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FARMER'S ADVOCATE

AND HOME MAGAZINE

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE. *

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EDITORIAL.

Welcome showers in the last two weeks have fallen over many districts in Ontario, doing good service in refreshing the pastures and young clover, as well as giving roots and corn a much-needed stimulus. The harvest is practically over in the greater part of the Province, and has been secured in excellent condition, although the hot and dry weather of the latter days of July hastened the ripening too rapidly, and in consequence the oats and peas are not as well filled as could be wished, but the quality of straw is very fine.

A dairy farmer writes to thank the FARMER'S ADVOCATE for the plan and description, published some issues ago, of the inverted milk pan aerator for airing factory milk. He says he has had no complaints this season about "gassy" milk, and by its use and a little cold water and ice has been able to keep the milk of a large herd perfectly sweet in the hottest July and August weather from Saturday night till Monday morning. Last year he lost milk enough to pay for a dozen aerators.

A leading dairyman advises us that he has been flooded with circulars advertising substances, both in the form of liquid and powder, for which extraordinary claims are being made by a U. S. firm. It is warranted to keep milk and cream sweet and fresh in hot, thundery weather from five to seven days, prevent "ropy" milk, and bring the cream to the surface. We again advise dairymen, as we have scores of times before, to let the substances alone and stick to thorough cleanliness in every step of the dairy process, and the use of abundance of pure water, pure air, and pure food. The British authorities are on the alert to detect any such compounds in importations of butter and other products, and would probably not hesitate to impose another "embargo" for their own protection.

Mr. Ruddick Remains in Canada.

Mr. J. A. Ruddick, Superintendent of the Kingston (Ont.) Dairy School, who in the absence of Prof. Robertson in Great Britain has been doing some work in the Department of Agriculture and Dairying at Ottawa, not long ago received by cable from the New Zealand Minister of Agriculture an offer of the position of Dairy Commissioner for New Zealand, with more in the matter of remuneration than he is at present receiving. He declined the offer, rightly considering that the Dominion has a greater future in store for it than New Zealand, or, for that matter, any other colony of the British Empire. Canada's star is in the ascendant, and it is gratifying to find the services of the young sons of Canada in demand for positions of practical importance all round the globe, but we cannot spare too many of them just yet.

Why Educate the Farmer's Son?

We have been asked whether a lad, son of an Ontario farmer, who has a liking for a mercantile life and who expects to have a little leisure next winter, would do better after taking the public school course to go on to the high school or take a short course at a good business college. From what we know of the curriculum and tendencies of the high schools and collegiate institutes in that Province, we should certainly say take advantage of the business training at a commercial college. The very existence of these institutions, of which there are now many excellent ones, shows a serious weakness in the educational system of the country.

The complaint has been made that farmers do not share to the extent that they ought in directing the affairs of the country. Considering that some 40 per cent. or more of our population is engaged in agriculture, which as an industry is the main-

stay of Canada, it is but right that agricultural affairs should have a foremost place in public concern. Politicians admit this. A corresponding parliamentary representation, properly qualified and able to grapple with questions relating to practical agriculture, as well as with such problems as transportation, etc., is therefore necessary. The FARMER'S ADVOCATE does not favor class legislation nor class representation simply as such, but it is the professional classes, which number less than three per cent. of the population, that largely hold the representation. Farmers' sons in large numbers are annually drained to fill the ranks of the city professions, their brain and brawn going to sustain the physical and mental stamina of the latter. Many of them gravitate into positions of eminence and influence. A late example was the selection of Wm. Ogilvie, a Russell (Ont.) Co. farmer's son, to be Administrator of the newly created and fabulously wealthy Yukon Territory. But directly the professional class, such as lawyers, largely mould the country's legislation.

With these considerations in view we would remind Canadian farmers and our readers elsewhere that it is the educated classes who, in the affairs of church and state, control the destinies of countries. They qualify themselves to rule, and they do rule. There is no escaping this conclusion. The moral for the farmer is obvious. It is positively amazing how much effort and money will be expended to equip the farmer's son for law or medicine, and how little on the one who is to carry on the farm. Is he encouraged with a good general education and given a course at some of our agricultural institutions of learning? The dairy schools in our different Provinces should be crowded, and likewise the schools of agriculture and horticulture in Nova Scotia, and the Ontario Agricultural College, with its world-wide celebrity for efficiency in science and practice. It is high time that Western Canada was advancing on these lines. Let no one run away with the idea that by education we mean mere book scholarship such as finds its apex in a B. A. or a Ph. D., which may only represent the temporary passport of a literary lightweight. We mean a fair share of the best useful schooling of the day and such training as will open the eyes and ears of our youths to the delights, advantages and possibilities of country life and lay the foundation of sound agricultural and business principles.

Probably every agricultural neighborhood in the land has its examples of farming made a splendid success and farmers coming to the front. How? Why? Education! EDUCATION! EDUCATION!

These men respect their calling and seek to promote its interests. They make a study of it; they read the best current agricultural literature of the day, as men find necessary in less difficult and complicated occupations; they apply business principles to it—the principles that make any business a success, and without which farming may become a miserable failure. A few days ago the writer was walking about a grand agricultural neighborhood with a friend, who was regretting having sold his farm and gone into a commercial venture that was not paying as expected. "Why," said he, "these men about here with their fine homesteads are like little independent kings." So they were. They were inspired with the true genius of agriculture. They were putting knowledge of nature's laws and thought, as well as the other elements of thrift, into their business; and their success was certain; they never could degenerate into mere hewers of wood and drawers of water. The socialistic demagogue howls against plutocracy and the vast and dangerous encroachments of corporate wealth. How are these tendencies to be met? How is the farmer to hold his own? What is the remedy? The most potent and effective weapon with which the coming farmer can be equipped in this great Dominion is a good practical education with agriculture as its vital constituent.

Types in Judging.

The nomination of the judges of the different classes of live stock at the leading shows in Canada having been undertaken by the various breeders' associations, and accepted by the fair boards as a rule, there should be less difficulty now than formerly in securing the services of competent men. Where the judges are selected from the list nominated by the breeders the responsibility rests with the breeders, and for that reason, among others, care should be observed in the preparation of their lists. Fortunately, there have been but few cases in recent years when the judges were taken from these lists in which there has been good reason for complaint of their work. In order to be up-to-date as a judge in any class of stock a man must have had experience in breeding and handling good specimens of the breed, or at least have followed the work of good judges as a close observer and one who has taken a live interest in watching and studying the characteristics of the various breeds and the best and most approved types of the breeds. The judges are largely responsible for fixing the standard of type, and for this reason there should be as nearly as possible an agreement among breeders and judges as to what constitutes the ideal type in each breed. Uniformity of type or character is a desirable feature in any class of stock, and if there is a general agreement on the part of the judges appointed from year to year as to what is the standard, breeders, and especially exhibitors, will in all probability aim to conform to that standard. It was for the purpose of fixing the type in some of the newer breeds of sheep in England that at some of the leading shows the same judges were continued in office for a number of years, and it is said with good results. While we would not favor this rule in a general way, believing as we do that among the breeders of most classes of stock there are more than two or three who know the best type and are capable of adjudicating in the class, yet we can readily understand that in special cases it may be a desirable course to follow. Each particular breed has certain peculiar characteristics which distinguish them from all others, and one who has studied these characteristics will be competent to judge with tolerable accuracy as to the purity of an animal's breeding, and yet it is not safe for even the most expert to depend upon his judgment as to this unless supported by the evidence of the pedigree record and the good character of the breeder and the exhibitor, for it is well-known that the grades of some breeds show all the fancy points and peculiarities of the pure-bred, and in the hands of dishonest or unscrupulous men may deceive the very elect.

In judging the beef breeds of cattle and most of the breeds of sheep the work of the judge is comparatively plain sailing, since the dominant type is generally acknowledged and agreed upon, and as a rule, other things being equal, he will hew to the line of the modern ideal; but in these classes, as well as in all other classes of stock, we have no hesitation in saying that a judge is not justified in placing a weak, unthrifty, and, consequently, inferior specimen of the approved type above a thrifty, robust, well-proportioned animal of an older fashioned or less fashionable type. As a rule, judges aim at uniformity in their work, and rightly so, if there is the proper material before them from which to make a uniform list; but if there be not enough good ones of the approved type to fill the prize list, then let them look for the best individual outside of the ideal type and place the prizes there rather than encourage fashionable meanness. We have heard exhibitors complain that a judge did not stick to his type, when in reality the judge had much better cause to complain that there were not enough decent specimens of his type to go round the prize list, and he was quite right in

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giving the prizes to animals that looked like living and paying for the food they ate.

In judging the dairy breeds of cattle the task of the judge is not so plain, since the ideal type in each breed is not so clearly defined, and men are not so generally agreed as to what is the standard of excellence when judging by conformation and the many outward indications which are admitted signs in a general way of their capability for high-class dairy production. This no doubt accounts for much of the apparently inconsistent work we sometimes see in the awards in these classes, for the many reversals of decisions at different shows in the same season by different judges, and for the many cases of dissatisfaction and complaint on the part of exhibitors. If the outward signs of milk and butter production were infallible there would be little difficulty in making selections, but every practical dairyman knows that as all signs fall in a time of drouth, so do all signs fall in an inferior cow. The corrugated backbone, the dimpled shoulder, the pelvic arch, the prominent abdominal cord, the large and tortuous milk vein, and the favorite escutcheon marks, may all be there, and her udder may be large and shapely, and yet the cow be quite below mediocrity as a producer, and she may be anything but a typical representative of the breed to which she belongs, and not by any means of the ideal type in general conformation and breed characteristics. The probabilities are that she is a good cow. She may be the largest milker and butter producer in the ring, but the probabilities are not always correct; the scales and the churn only can decide that question, and the milking test is the proper tribunal to settle it. The judge in the ring is expected to select the best animal in dairy conformation and the one that comes nearest to the ideal type of the breed he is judging. If it be a Jersey, he should be guided by the Jersey type and dairy conformation, and if an Ayrshire or a Holstein, by the most approved type of the breed and dairy conformation, always keeping in view the importance of a strong constitution and a well-formed and well-balanced udder and moderately large and well-placed teats, all of which may be found combined in an animal of beautiful and symmetrical proportions. The duty of the judge is to select from the material before him the animal most perfect in dairy conformation and the most perfect representative of the breed. His office is that of an instructor, an educator, a teacher, and he is there to give object lessons in dairy form and family type so that onlookers may keep the ideal

animal in their mind's eye, and in their breeding and selection of stock aim to secure and produce animals after the ideal pattern as nearly as possible. And if the judges are selected from among those who are competent and up-to-date in their ideas the standard so set up will be safe to follow, but if the judges appointed are behind the times or have not clear-cut ideas of what the times demand, and courage to work to that line, they will fail to fill the place to the best advantage in setting the standard for the improvement of the stock of the country. If these thoughts commend themselves to the minds of breeders and judges, and if they serve to inspire in the latter a sense of the serious responsibility of their position and their influence, or if these sentiments prove in any degree helpful to them in the discharge of their duties, the purpose of their publication will be, in like degree, accomplished.

Canada's Opportunity in Hog Raising.

1. Great Britain and Ireland are losing thousands of hogs annually through swine fever, during the first 27 weeks of this year 27,648, diseased or exposed to contagion, being slaughtered, and the movement of hogs from place to place is restricted. There have been more outbreaks of the disease this year than last. Canada has not this obstacle to contend with. We have healthy hogs.
2. We can grow practically unlimited quantities of the choicest swine foods in the world.
3. Our climate and water supply for this industry in conjunction with dairying is unsurpassed on the globe.
4. We have unequalled pure-bred foundation stock, and the general hogs of the country are of a fairly good type.
5. Our breeders and farmers are progressive, enterprising, intelligent.
6. Our packers have already demonstrated their skill in sending pork products to England that are crowding the best for top place.
7. Our food products are growing more popular in Britain every day, and are being boomed by their intrinsic merit, private enterprise, and government effort.
8. The increase of our exports of bacon and hams to Britain in 1897 exceeded 1896 by nearly \$1,400,000.
9. Transportation and cold storage facilities are being improved.
10. England imports annually about \$55,000,000 worth of pork products. We sent last year less than \$6,000,000, while Uncle Sam furnished \$30,000,000, and little Denmark some \$14,000,000 worth.
11. New packing houses are springing up at various Canadian points, and old ones enlarged and improved.
12. Should the returns not pay the farmer, he can easily slacken production.
13. Swine raising but tends to conserve soil fertility.

MORAL.—Let Canada go up and possess the land.

The Policy of the Irish Bacon Curer.

Canadian hog raisers and pork packers need not imagine that their Irish competitors will yield supremacy in the English bacon market without a struggle. The bacon curers of Ireland have spent money freely in order to secure the class of hogs they wanted and from which their handsomest profits were derived. Realizing that the foundation of success lay in breeding an improved type conforming to modern requirements, we find that since 1885 what is called the Bacon Curers' Association has expended not less than \$10,000, chiefly in the introduction of high-class boars, which as a rule are given free of cost to the farmers on condition that they are properly fed and cared for, used only for breeding purposes, and that neighbors are charged only the ordinary service fee. The Association employs inspectors who visit those portions of the country from which the curers obtain their hogs, and make reports, after which the animals are allotted. If a farmer is found to have what is considered a bad type of animal, it is taken from him and another supplied. Sometimes they are changed from one district to another. Good three-months-old sows are occasionally sold at about £1 each. The inspector visits the farms from time to time to see that the animals are properly cared for. These breeding animals, which have been chiefly Yorkshires, have been purchased from English, Irish and Scotch breeders. Something over a year ago the Bacon Curers' Association started a breeding establishment or model piggery

of their own near Limerick to provide boars for sections of the south and west districts of Ireland, and it is proposed to have a second one at Cork, each having an inspector who also keeps an eye on the feeding and general management of the hogs raised by farmers. It is hoped under this system they will get at the root of trouble experienced by the Irish trade in recent years and place it in a permanently prosperous condition.

The Breeding, Management and Feeding of the Bacon Pig.

How shall I breed, manage and feed the bacon pig? Will he pay me as well or better than the heavy, fat hog? These are live questions with a host of Canadian farmers whose appetite for swine raising was keenly whetted lately by six cents per pound, live weight, Toronto prices. A multitude of councillors have suddenly sprung up to tell the farmers "how to do it," but some of them tend to confusion, not safety, Solomon to the contrary notwithstanding. This is *the* breed, says one; cross-breeds are the thing, contends another; "feed peas" is the panacea of a third. In an "instructive" circular the other day we read that corn feeding made *hard*, dry, coarse bacon, with *soft*, oily, yellowish fat. We once saw the magic "Canadian pea-fed" brand—the delight of political editors—going on boxes of bacon from hogs that never tasted a pea. A letter by a leading Toronto packing house, published in the report of Agricultural Commissioner Robertson, states, in reporting on the great excellence of wheat-fed pork, that the complaint in England about pea-fed pork was that both fat and lean were too hard. The farmer usually gets the blame for everything, including some of the drover's work, but we never hear that any defects in the bacon, "soft" or "hard," originate in the packing house. Seriously, however, we believe the fair-minded farmer will take the view that he should give heed to the character of hog wanted by the packer, who must understand the market end of the business, so far as is consistent with a reasonable margin of profit over cost of production. Let there be fair dealing on both sides and an effort to get on common ground. As far as the FARMER'S ADVOCATE is concerned, we aim to get at the facts based on the experience of our staff in breeding and in feeding swine many years for both butchers and export packers, extended observations and special researches into the results of experimental work, as well as into the methods pursued on farms where it is made a specialty. Intelligent farmers and breeders who have been engaged the greater part of a lifetime in swine raising must surely be credited with having learned something about their end of the business.

We have endeavored to set forth elsewhere in this issue the needs of the bacon trade, according to the extended experience of the Ingersoll (Ont.) Packing Co.; have briefly reviewed the Danish practice in bacon production, according to Mr. Ginge, a native of Denmark, who is not only at the present time giving his undivided attention, as manager of the Canada Packing Company, to the production of bacon of high order, but who was for years closely identified with the Danish bacon trade with England; and in another article facts are given as to the plan of the Irish curers to improve their product.

BREEDING.—On one hand we have what is termed the special purpose bacon type, such as the pure-bred Tamworth, and at the other the heavy oblong style of hog common in the Western States. Besides the various pure breeds, we have the great army of varied grade and cross-bred swine. Canadian breeders for the past ten years have been aiming to conform the leading breeds more or less toward the bacon type, and this has had a corresponding effect on our swine generally, though many marketed are yet far from the packer's ideal.

Now the breed type of sire and dam fixes largely the character of the offspring. It is idle to fancy that any combination of feeds will convert the fat, dumpy Suffolk into the long, deep-sided, lean-meated bacon hog. As well expect a Jersey cow, that converts her food into rich milk, to be metamorphosed into a four-sided Aberdeen-Angus, beef to the heels. It is the *well-bred* hog too that converts his food into flesh at a profit. He has been bred for years with the object of fixing that power in his nature. For generations several of the chief breeds of swine have flourished, and to-day all merits are not, nor are they likely to be, wrapped up in one skin, be it red, white or black, and in our opinion no greater misfortune could befall live stock than to sweep away all breeds but one, even though the curers agreed as to which that should

be. Without competition and emulation progress would cease and degeneracy would set in.

Why does the packer ask for the bacon type? No doubt because its product realizes his best profits, hence he can pay more for it, and if more costly to produce, the farmer should get more for it. There is less competition in the fancy brands. The United States sends over \$30,000,000 worth of pork products to the British markets; Canada less than \$6,000,000, so the less heavy fat pork we produce the less will we have to compete with the vast mass of that character which brings a lower price. The American farmer, with his model of a Western Poland-China for example, and cheap Dent corn, especially when picked from the undigested droppings of steers—a common system with them, which we cannot think would ever commend itself to the discriminating nostril of the British consumer—says he can produce so cheaply that he makes just as much money and does it easier, even though he gets less for his pigs than the Canadian. We will surely do better to take our chances at the top. Without dictating as to breeds, let the farmer, in the choice of his brood sows, usually grades, and pure-bred males, look to the bacon form, including a good ham, and seek to get with it what is known as a good feeder, according to his best knowledge, judgment, and conditions.

GENERAL MANAGEMENT.—Let the young pigs as they grow up have plenty of exercise, grass to pick in its season, and learn to feed at the trough with the dam. At two or three months old they should be going on well. Don't allow them to get stunted on the one hand nor too fat on the other. Feed them shorts, peas, barley, oats, wheat, etc., mixed with skim milk or whey, so that they will get the elements (protein and ash) necessary to develop flesh and strong bone. At five or six months old the finishing period, with heavier feeding, will begin. The packer seems to prefer attaining 180 average weight in about eight months, providing that lean dominates rather than fat. The fact is demonstrated beyond question that as the hog grows heavier it costs more to put on each pound of flesh; but we are not aware that it has been shown definitely how the cost of a 180 pound pig at six months compares with that of the same weight at eight months. There should still be moderate exercise, pure air in the pens, and scrupulous cleanliness.

FEEDS AND FEEDING.—We recommend feeding mixed grains, ground fine as a rule and soaked 12 to 24 hours before using. By mixing aright we get a ration that will go to make a better class of meat, and, we think, gain in palatability. Something green in summer and pulped roots in winter aid digestion, and access to the soil promotes good health. If the pigs begin to get disordered and crippled up, vary the feeding and try a mixture of sulphur, charcoal and ashes, salt, and a little blue-stone, placed in a separate box or trough where they can take it at will. In a very clear and able article elsewhere in this issue, Prof. Day, of the Ontario Agricultural College, explains the relation of foods to animal increase, which every feeder in Canada should carefully study. No one grain is a perfect food for hogs. Seek to get an economical combination that will be rightly balanced for flesh, fat and heat (or energy) production. Barring peas in Manitoba and the Northwest, and some other sections where "the bug" is troublesome, we grow all the leading grains to perfection, including the hard flint corns. Corn, however, is carbonaceous, largely fat and heat producing, so in feeding the bacon pig must be used in limited quantities along with such foods as shorts, oats, peas, wheat and barley. It is thought by some that the Western dent corns are not equal to the hard Canada corn for fine quality of product. A bad general system of pig management may be responsible for some defects attributed to certain foods. Barley is one of our best "all-round" pig feeds, and for bacon is regarded most favorably in Great Britain and Denmark. Ground peas alone make too heavy and compact a food, but a favorite way with many is to feed them soaked whole, especially to young pigs. Beans, though not unlike peas according to analysis, are regarded in great disfavor as producing pork dark in color, and of soft, inferior quality. In one or two limited districts where grown extensively, owing to depressed prices the lower grades especially have been utilized in hog feeding. From one "bean and corn" locality nearly 50 per cent. of the pigs received by one of our packers were reported as producing soft, oily, undesirable pork; and another packer is equally pronounced against them. Fattening with clover has been condemned, as it is supposed to produce soft, "flannelly" pork; that is, pork with the feel of flannel drawn through the hand. The experience of Mr. Freeman, of South Oxford County, Ont., a very successful bacon swine raiser, related in our issue of July 1st, was that fattening on clover did not pay, and all experiments, except one with alfalfa in Utah, point in the same direction. Pending the results of further investigation in these doubtful points, the Canadian farmer will do well to keep on the safe side, which, in the light of present knowledge, we have above endeavored to indicate.

Professor Babcock is credited with saying that hand separators rightly handled will give five per cent. more butter than any other system, and that you can churn separator cream at a lower temperature and more exhaustively than by any other system of getting cream.

STOCK.

Operations of the Ingersoll Packing Co.

The institution operated by the Ingersoll Packing Company, Ingersoll, Ont., having a capacity for killing and dressing from 6,000 to 8,000 hogs per week in summer to 10,000 weekly in winter, is an interesting concern to visit. We recently spent a portion of a day with the manager, Mr. C. C. L. Wilson, who presented us with the photographs of groups of pigs illustrated herewith. Fig. I. represents a sample bunch of pigs, from which Wiltshire-cut singed sides are produced. While they do not quite fill the bill for



FIG. I.—HOGS OF BACON TYPE.

ideal bacon pigs, they represent a general average of the best sort received. Ideal bacon pigs would be longer, but without greater thickness, except of belly, and having the light shoulder as shown in cut. These are from Yorkshire-Tamworth parentage, the Yorkshire being the sire. They are about 6 months old, and average 180 pounds. Mr. Wilson claims a preference for weights ranging from 170 to 200 pounds, from 7 to 8 months old, that have been given plenty of opportunity to grow lean meat before fattening commences, 6 to 8 weeks before finishing.

Fig. II. represents a bunch quite too heavy and fat for singers. They averaged 217 pounds, and represent a cheaper class of pork, which goes to supply cheaper markets. By comparing these two groups a valuable object lesson can be gained. For the class represented by Fig. I there is an almost unlimited demand at a high price, not only in England, but in Canada it is growing rapidly, especially for a milder cured bacon. The export trade, how-



FIG. II.—HOGS TOO THICK AND FAT FOR BACON.

ever, is the one largely to be depended upon, and the more nearly its requirements are met the more rapid will be its development. We are yet far short of either growing our limit of pigs or supplying our share of pork products to Great Britain, and as it is the fancy brand that commands the best price, it is that sort we will show our wisdom in producing. There will always be an enormous quantity of cheaper pork products demanded by the poorer classes, especially of English cities, but let us be content to allow our American cousins to cater to that trade with their cheap corn-fed pigs. They seem satisfied to produce that sort, and indeed can do it cheaper than we, on their cheaper land especially adapted to corn growing. They laugh at our folly in alleged retrograde breeding and half-finishing our pigs, but so long as we see Canadian best cuts quoted at 52 shillings and American best cuts selling for 42 shillings per cwt. we can laugh too and each have a good time. A point which Mr. Wilson informed us of is that thick-finished hogs, such as Western feeders produce, shrink considerably less in dressing than do the bacon type, such as Fig. I. represents, and which dressed out about 62 per cent., while thick, fat hogs will yield over 70 per cent. of meat and lard.

Live hogs are received at the stock yards adjoining the works every day except Sundays, both by farmers' wagons and by care. They are run into the large, airy pens and yards, into which streams of cold spring water are running from pipes to cool the animals and provide them drink. They are not given any feed, so that they are in good condition for killing by the following morning. Killing and dressing is an expeditious operation and is much the same in all modern packing establishments. The pigs are driven in bunches into a pen close by the hoist, which pulls them up. They are caught by a chain, which draws tightly around one hind leg, and elevated a few feet, when the fatal stab is given. They are then elevated to an iron track which passes over the scalding-tank. Usually a dozen or more are hanging between the sticker and the tank, so that they are always dead by the time they are plunged into the scalding water. In this they are rolled, aired and turned, and pass out at the other end of the tank. They are then passed through a scraping machine,

which removes most of the hair. They are next slid down a table between two rows of men, who remove the remaining hair, and are then elevated and pass through a burning fiery furnace, which singes them perfectly bare, leaving them smoked and brown. They are now washed, and scraped white and clean, and pass a number of hands with knives, who remove the head, internals, etc., and are split down ready for the cooling room, into which they pass until the next day or the following one. This department, as well as the curing rooms, is kept at as near 40 degrees as possible by means of an ammonia refrigerating system. The refrigerating compartments have a very large area, sufficient to accommodate about three weeks' killing, as that is the time required for curing the meat. While in the curing process the sides are piled in layers, each covered with salt and saltpeter. The layers are piled about three and a half feet high, firmly packed together. After it is cured it is shipped in sides or cuts of various brands. Certain grades and forms of hams, bellies, backs, rolls and shoulders are smoked. The bulk of the bacon made by this company is sent to Liverpool and London mostly in the form of singed sides or Wiltshire cut, and the heavier class of bacon and other cuts are mostly sold here to the local trade. All cuts are deeply branded "Beaver Dairy-Fed Brand" with a burning brand about six inches in diameter. The various markets are intelligently studied, as are also the different qualities and cuts of pigs, and each dealt with to the best advantage. Everything that will make fancy meat is turned in that direction, and what will not is disposed of to the best advantage.

The business is without doubt a complicated one, needing expert hands and careful oversight to avoid serious loss. For instance, in packing the meat in boxes to ship care must be exercised lest a bruised portion should go in with the first grade. Just here it might be stated that serious loss is involved by shippers and others handling the pigs roughly with clubs and other missiles. Sometimes as high as five per cent. of a lot of gammon hocks or hams will show dark bruised spots, which have to go into another case and are sold as seconds. It is well to remember this point while shipping hogs, as losses that occur in this way must be borne by somebody, and the farmer doubtless bears his share in the price of later shipments.

Without carefully observing the disposal of the offal, we could see that nothing is allowed to waste. The blood and other offal are mixed, treated and dried for fertilizer. When finished it consists of a fine brown powder, containing a high per cent. of nitrogenous matter. We also observed that this company are enlarging and improving their extensive plant. At the time of our visit a large cold storage room was being fitted up especially for the curing of hams, and other improvements were going forward in various branches of the works.

Danish Methods in Bacon Production.

Danish bacon, like Danish butter, has been held up for years as being equal to the best in the world, barring that from Ireland. In 1880, Danish bacon sold in England for nearly \$4 per hundred less than Irish. To-day it sells at a price little below the Irish, and over a million and a quarter hogs annually are produced. The increase in bacon output to England has been enormous—from about 17,000 hogs in 1882 to nearly \$14,000,000 worth in 1897, while Canada sends less than \$6,000,000 worth. The improvement in quality created the demand and caused the advance in price, and strict supervision of breeding and feeding has kept up the standard of the rapidly increasing numbers.

The Canadian Packing Co., of London, Ont., is conducted on as nearly strictly Danish lines as the character of the pigs secured will allow, but they complain of too many stout, lardy hogs, and too few of the long, lean, deep-sided, thick-bellied sort which brings the most money to the country. Mr. J. H. Ginge, manager of the above company, was for years in close contact with the Danish bacon industry and has furnished the FARMER'S ADVOCATE with data as to their methods. Danish farmers select long, lean sows from the best mothers, more especially of white color. Pork-packing corporations bring in the right sort of boars, which are usually of the Middle White English Yorkshire breed, as these, he says, produce the best English bacon. Satisfactory sires and dams are retained in the breeding herd for years, but inbreeding is never tolerated. The finest Danish bacon is made by feeding the right sort of pigs on barley, rye, wheat and peas, along with boiled potatoes, raw turnips cut fine, skimmed milk, buttermilk or whey, and grass in summer instead of the roots. The young pigs are allowed to run out and grow without putting on much fat from the time they are weaned till within six or eight weeks from the time they are to go out finished. A finished Danish bacon pig ranges from 180 to 220 pounds live weight. It is a long, lean hog, with plump, well-developed hams; thick, straight belly, and fat on back not exceeding one and a half inches thick. The Danish pigs are raised largely on dairy farms, but many small lots are raised and fed by peasants or laboring men. As a rule the grain feed is ground and soaked over night, mixed with other foods and given to the hogs when on the point of turning sour. The pigs are kept clean and comfortable and are not fed more than is eaten up clean at one meal.

Mr. Ginge is convinced that if Canadian farmers

will raise the right kind of hogs and feed them on the Danish principle they will find hog raising to pay them better than anything else on the farm. He recommends that a steady supply be maintained throughout the year in order to meet and satisfy the demands of the English customer.

Crushed Oats, Cut Hay and Straw Better than Whole Oats and Hay.

The London General Omnibus Company have recently completed an interesting experiment with their horses. They divided them off for the purpose of testing the effects of two systems of diet. The first section were given daily 16 lbs. of crushed oats, 7½ lbs. of cut hay, and 2½ lbs. of cut straw. The other section had 19 lbs. of whole oats and 13 lbs. of uncut hay. It was found that the condition of the animals under No. 1 diet had decidedly improved, while at the same time a saving was effected of 2½d. per horse a day. The whole stud is accordingly now placed on the first-named dietary.

Feeding Beans to Hogs.

To the Editor FARMER'S ADVOCATE:

SIR.—There is no doubt but that the extremely low price of beans during the past two or three years has been the cause of large quantities of them being used for feeding purposes. Milch cows, fattening steers, hogs, sheep, and even horses come in for a share. Parties who wintered their horses on boiled beans as grain ration claim great things for them. By converting them into pork, beef, milk, etc., it is claimed that \$1.00 a bushel and better can be made out of them. The usual method of preparing them for feeding (except for sheep, which eat them raw) is to boil them in a large cooking pan made for the purpose, and then mix in bran, shorts or chopped coarse grains, or else boil beans and whole coarse grains together. Although some of the local hog buyers think that beans are the cause of the soft pork which is supposed to come from this district, we can't see it that way, as the hogs we kept for our own using last winter were fed on the above, and better tasting pork we never handled. W. A. MCGEACHY.
Kent Co., Ont.

Corn vs. Peas.

To the Editor FARMER'S ADVOCATE:

SIR.—We are hearing a great deal these days about the comparative merits of pea and corn fed pork, the latter being generally condemned as being too soft and fat. The quality of the carcass, in my judgment, depends not on the feed alone, but also upon the type of hog, determined by its breeding and the system of feeding, a longer period of fattening, with more exercise, tending to produce a greater proportion of lean meat, but probably at a slightly increased cost. I trust our experiment stations will take up this most important question. From its composition we look for fatter pork from a corn diet, but other conditions being right, I do not think, judging from my own observation, that good Canada corn makes soft pork, and it certainly makes the lean meat of a fine bright color. I find in Prof. Robertson's report of 1890, in a comparison of carcasses of hogs given different rations, that the corn-meal-fed meat was brighter than that from peas, was equal to it in firmness of flesh and lard, but the latter had more of a "chalky" color. Shorts and rape ensilage gave the largest proportion of lean to fat, shorts second, barley meal and shorts third, while corn and pea meal were equal at the bottom of the list in that particular. We evidently need more trustworthy light on this subject, because we cannot afford to risk injuring the growing popularity of Canadian bacon by taking any course about which there is doubt, as the FARMER'S ADVOCATE very clearly points out. ESSEX, Ont.

FARM.

The Guelph College Chair of Biology.

The chair of biology at the Ontario Agricultural College which was made vacant by the death of the late Prof. Pantan has been filled by the appointment of Mr. Wm. Lochhead, B. A., late Science Master of London Collegiate Institute. Mr. Lochhead graduated from McGill University in 1885 with first rank honors in natural science, after a brilliant four-year course. After working for a time as a Fellow in the Science Department of Cornell University he filled positions as Science Master in Perth, Galt, Napanee and London Collegiate Institutes, teaching eleven years in all. In all these positions he has proved himself a popular, efficient and painstaking teacher. He returned to Cornell and took the degree of Master of Science in 1895. He has also been an active member of the Ontario Entomological Society, to which he has contributed some special studies. He has withal a particularly practical turn of mind, which will give him peculiar value in connection with his College work.

There has also been created a position on the College staff, of Assistant Biologist, which has been filled by the appointment of Mr. W. Doherty, B. S. A., a graduate of Guelph College in 1895. Since his graduation Mr. Doherty has pursued a course of studies at Cornell University along the lines in which he will be called to assist Prof. Lochhead in his new field of labor.

Winter Wheat Growing in Ontario.

VARIETIES TO GROW—SELECTION AND TREATMENT OF SEED
—SEEDING OPERATIONS.

(BY C. A. ZAVITZ, B. S. A., EXPERIMENTALIST, ONT. EXP. FARM.)

The area now devoted to winter wheat in Ontario amounts to about one million acres annually. This crop occupies more land than any other farm crop grown in this Province, with the exception of the hay and the oat crops, for each of which nearly two and one-half million acres are used each year. The annual market value of the winter wheat grown in Ontario is upwards of ten million dollars, and this amount is likely to be considerably increased in 1898. A large portion of the Province is well adapted to the growth of winter wheat, and this crop will undoubtedly be one of considerable importance to Ontario for many years to come, notwithstanding the facilities for growing wheat in Manitoba and the Northwest. The winter wheat occupies an important place in a regular rotation, admits of the autumn sowing of timothy, tends to a more even distribution of labor throughout the year, supplies straw in abundance, and furnishes a grain which will sell for cash at any season of the year.

The great aim in wheat growing in Ontario should not be so much the sowing of large areas as the adoption of methods of cultivation and the selection of varieties most likely to give the best results. With this end in view, the importance of making a proper selection of seed, of sowing at the right time, and of having suitable conditions of soil, cannot easily be overestimated. It would usually be much better not to sow winter wheat at all than to sow it under conditions not likely to produce a good crop.

Selection of Varieties.—The winter wheat grower who does not give special attention to the varieties which he sows in his fields is certainly not looking after his best interests, as undoubtedly the variety used has a marked influence upon the character of the crop produced. To this fact thousands of farmers who saw the varieties of winter wheat grown side by side under similar conditions in the experimental grounds at the Agricultural College during the present season can testify. The varieties grown on these plots in 1898 varied from 43 to 60 inches in height, from 0 to 92 per cent. in amount of crop which lodged before being ready for cutting, from 2.1-5 to 4.7-10 tons in yield of straw per acre, from 58.2-5 to 65.4-5 pounds in weight of grain per measured bushel, and from 30 to 52 bushels in yield of grain per acre. For heavy, rich soils, which usually produce a large growth of crop which is apt to lodge badly, those varieties possessing short, stiff straw should be selected, while for light, weak soils those varieties with long, heavy straw would likely give the best satisfaction. Generally speaking, the white wheats possess stiffer straw and yield more grain per acre than the red varieties, but the latter produce grain which weighs about one pound per measured bushel more than that produced by the white varieties. The hard, flinty red wheats produce a strong flour, which is comparatively dark in color, while the white wheats produce a white, weak flour. Millers frequently mix the red wheat of Manitoba with the white wheat of Ontario in order to get a flour having a proper combination of both color and strength. The very hard wheats, such as are principally grown in the Canadian Northwest and in the North-western States, are nearly all red in color, while the softer wheats are represented by varieties of both the red and the white classes.

The five varieties of winter wheat which have given the highest average yields per acre among seventy varieties grown for five years on the experimental plots at the Ontario Agricultural College are as follows:

Varieties.	Weight per bu. 5 years.	Yield per acre. 5 years.
Dawson's Golden Chaff.....	59.7 lbs.	52.6 bus.
Early Genesee Giant.....	59.8 "	48.7 "
Egyptian.....	60.6 "	48.6 "
Imperial Amber.....	59.8 "	48.6 "
Early Red Clawson.....	58.9 "	48.5 "

The first two of these are white and the rest are red varieties, and none of them are very hard wheats. In comparison with these varieties the hard wheats yield less grain per acre, but in most cases produce wheat which weighs a little more per measured bushel, as illustrated by the records of the five following varieties of very hard wheat taken from the average of the five years' test:

Varieties.	Weight per bu. 5 years.	Yield per acre. 5 years.
Tuscan Island.....	60.6 lbs.	42.8 bus.
Red Velvet Chaff.....	58.3 "	41.3 "
Longberry Red.....	60.0 "	38.8 "
Kentucky Giant.....	60.0 "	38.8 "
Turkish Red.....	61.5 "	36.8 "

The Dawson's Golden Chaff and the Early Genesee Giant are among the stiffest-strawed varieties, and the Tuscan Island, Longberry Red, Kentucky Giant, and Turkish Red are among the weakest-strawed varieties of all those grown in our experimental grounds within the last nine years.

Selection of Seed.—While it is important to select the varieties which are best adapted to the locality and the soil in which they are to be sown, it is also important to select seed which is of superior quality. Nothing but large, plump seed, true to name, and having a high degree of vitality, should be used. From a test made in our experimental grounds with two varieties of winter wheat in 1897 and again in 1898, we found that large, plump seed produced a yield of 6.3-5 bushels per acre more than that produced from small, plump seed, and 8½ bushels per acre more than that produced from shrunken seed; and also that seed grain which had been broken by the threshing machine gave a yield of only about one-fifth as much as that grown from the large, plump grain. In this experiment the yield of straw and the weight per measured bushel of the grain produced was also greatly influenced by the different selections of seed which were sown.

Treatment for Stinking Smut.—On a good many Ontario farms the winter wheat is badly infested with what is known as the stinking smut, which is also sometimes called hard smut, bunt, or smut balls. This disease produces a very unpleasant odor, and, besides reducing the yield of wheat

per acre, it frequently lessens the market value of the grain fully 25 per cent., and in some cases renders it practically useless for the production of flour. This disease can be so easily and so effectually treated that there is no reason why any farmer cannot practically rid his wheat fields from this trouble in a very short time. An experiment in treating seed wheat for the prevention of smut has been conducted on our experimental grounds during each of three years with very gratifying results. Badly infested seed wheat not treated for smut produced a crop containing an average of 170 smut balls per pound of grain, while that treated with potassium sulphide produced an average of 12 balls of smut, and that treated with either copper sulphate or hot water an average of less than 1 ball of smut per pound of grain. The treatment with copper sulphate was made by immersing the seed for five minutes in a solution of one pound of copper sulphate dissolved in one gallon of water. The hot water treatment consisted in immersing the seed wheat for fifteen minutes in hot water at a temperature of 132 degrees F. For this treatment the water should not go below 130 and not above 135 degrees. Every farmer in smut-infested districts should treat sufficient seed to insure the harvesting of clean grain for seed next year.

Date and Method of Seeding, etc.—The proper time for sowing winter wheat must be largely governed by locality, season, quality and preparation of soil, and variety of grain selected in order to get the best results. A well-kept bare summer-fallow can be sown with safety somewhat later than a soil which has produced a crop the same season, and which is apt to produce a slower growth of winter wheat in the autumn. A well-drained, rich, low-lying soil can also be sown later than a high, light, weak soil, even though the other conditions are similar in both cases. Our experiments in sowing at different dates for six years in succession show that under ordinary conditions we get the best results at the College by sowing during the last week of August or first week of September, and that it is not usually safe to sow later than about the 9th of September.

It would not be wise to sow the same amount of seed wheat per acre under all circumstances, as less seed may be sown on a rich than on a poor soil, early in the season than late in the season, by using a large-strawed variety than by using a small-strawed variety, etc. An experiment which has been conducted at the College by sowing different quantities of seed of each of two varieties of winter wheat for five years in succession shows that 1½ bushels of seed per acre produced an average of 2.3-5 bushels of grain per acre more than when one bushel of seed was used. There was not much difference in the results from using either 1½ or 2 bushels of seed per acre.

If the soil is in a good state of cultivation and the seed is sown carefully, it matters but little whether it is drilled or sown broadcast. In the average of five years' carefully conducted experiments there is a difference of only 1-500 part of a bushel between the two methods of seeding, the same amount of seed being used in both cases.

The average yield of winter wheat per acre throughout Ontario for the past fifteen years is practically 20 bushels per acre. This is a greater average yield than that of any of the wheat-growing States of the American Union. We are pleased with the good record of our Province, and feel confident that with a more general adoption of the very best methods in wheat growing our average yield and financial profit can still be considerably increased.

Distribution of Seed Wheat for Testing Purposes.

The Ontario Agricultural College will send the following three sets of winter wheat varieties free, by mail in one-half pound lots of each variety, to farmers applying for them, who will carefully test the three kinds in the set which they choose, and will report the results after harvest next year. The seed will be sent out in the order in which the applications are received as long as the supply lasts:

SET 1.	SET 2.
Dawson's Golden Chaff.	Dawson's Golden Chaff.
Early Red Clawson.	Imperial Amber.
Early Genesee Giant.	Golden Drop.

SET 3.
Dawson's Golden Chaff.
Bearded Winter Fyfe.
Stewart's Champion.

Each person wishing one of these sets should apply as early as possible, mentioning which set he desires, and the grain, with instructions for testing, and the blank form on which to report, will be furnished free of cost to his address, until the supply of grain for distribution is exhausted.

All communications should be addressed to—
C. A. ZAVITZ, Agricultural College, Guelph, Ont.

Saving the Second Clover Crop.

To the Editor FARMER'S ADVOCATE:

SIR.—As there was an unusual amount of clover throughout the country this season, and being cut early, has since made a very rapid growth, which is now almost ready to be cut again. This will be done in many instances, and as it is difficult to save, a few words giving our method, which has been practiced successfully for a number of years, may be of use to some who are thinking of saving their second cut of clover this year for the first time. Cut as soon as in full bloom. If very heavy it will require turning. It is difficult to describe the degree of dryness or time after cutting at which to turn or rake up, as so much depends on the weather and the thickness of the swath. A very important consideration is having plenty of room in which to store it without packing or tramping it. This may be accomplished by threshing the grain right after harvest, thus making room for the clover. Do not leave the clover in the field to dry perfectly, but haul it in as soon as thoroughly wilted, and better if warm with the heat of the sun. Make a scaffold across the center of the mow, resting on the beams. This may be accomplished with the aid of a few

rails thrown across the mow and a few boards across the rails. This scaffold extends to within a few feet of either end of the mow. On this scaffold the mow-men stand, and on it the forkfuls of clover are dumped, when the men proceed to build tiers of the clover at the ends of the mow. These tiers must not exceed three and one-half or four feet in width. The mow-men do this from their scaffold, being careful to loosen up every forkful of the clover and letting it drop on the tier as loosely as possible. As each layer of clover is placed on the tier it is evenly sprinkled with salt. As these tiers reach the scaffold, or higher, if necessary, the scaffold is narrowed and two more tiers started on the bottom of the mow, leaving one foot of clear space between the tiers. This space is all-important and must be left clear for the circulation of air. When the center of the mow is reached the scaffold may be opened at the front or back of the mow, as necessary to build the center tiers. When the lower part of the mow is filled spread your scaffold over the mow to form the bottom of the upper tiers. Make a scaffold on the upper cross beams and use it as the former one was used, building your tiers on the first scaffold. The advantage of this division in the tiers is that the hay will dry evenly without producing mold or turning black. Where there is only a small quantity of second-cut clover it may be stored in the top of lofts or mows which have been filled with hay but have settled down, leaving two or three feet of space. In any case do not tramp the clover, but leave it as loosely as possible that the air may penetrate it. J. C. H. S. Carleton Co.

A Point in Clover Growing.

To the Editor FARMER'S ADVOCATE:

SIR,—I cannot refrain from calling attention to the following statement in an editorial in your issue of July 15th, though to disagree with the editor is usually a dangerous course to pursue: "If clover was sown every year with all cereal crops on well-prepared land, we should have no fear of the future fertility of the farms of Canada. With this and barnyard manure, made from feeding of stock on the farm, our land may be kept in good enough condition to grow the best of crops in perpetuity."

This is a dangerous doctrine, and, in the light of experience and latest research, a misleading theory, practically and scientifically incorrect. This plan has been tried and found wanting, after awhile clover becoming a total failure, and other crops failing in like manner. Clover and all leguminous plants are able to feed upon the nitrogen presented to them by the micro-organisms of the land, which convert the nitrogen of the atmospheric air into forms which furnish plant food for legumes. But clover and all legumes hunger for the mineral elements of the soil, of which phosphoric acid is proved the most important. Without a plentiful supply of phosphoric acid and lime, which we speak of as phosphate, not only will the clover suffer for phosphoric acid, but the land will suffer in that there will not be the needed development of myriads of little nitrifying organisms referred to. We, then, arrive at the point when the clovers bring us no longer atmospheric nitrogen, but merely feed upon the soluble nitrogen presented to them from the decomposition in the soil of manure, either animal or vegetable.

The failure to succeed with just such a plan as you suggest arose from a want of knowledge of the requirements of the clover. The real value of clover as manure lies in its power, under proper conditions, of bringing us something new into the land, viz. atmospheric nitrogen. Wagner, of Darmstadt, who is admittedly the authority *par excellence* on this subject, says: "You may cultivate clover, peas or vetches, but these plants will not have the power of making use of the rich supply of nitrogen in the air, which is to be had free, if they are allowed to starve for the want of phosphoric acid."

Clover and its confreres are undoubtedly tremendous aids to farming, as by a proper attention to their necessities a valuable and costly element may be incorporated with our soils; but I think it is the place of an agricultural journal to warn the farmer that serious disappointment may be in store for him if he simply follows the plan laid down in the second paragraph of the above quotation from the *ADVOCATE*.

It will not do to depend upon the animal or barnyard manures to supply phosphates, as they only contain the amount remaining in the undigested portion of the food passing through the animal's stomach, and such as the straw litter contains. It, then, does not add anything new to the soil, but merely is the product of the soil worked over. The phosphate of the land is used up and carried away by the bone of animals and people fed on the farm, or in the cities from the products of the farm, and unless some provision is made to return it, clover growing will not be a success after awhile.

The present season has seen luxuriant growths of clover, as nitrification has been very active, and, as under such circumstances the earth brings forth clovers with a seeming spontaneity, it behooves us to study so as to, if possible, simulate the conditions of nature.

The clovers are unusually rank this season. Can they be continued, and can they be improved? My answer is that they can, if means are taken to balance with phosphoric acid, well combined with

bases, the great store of nitrogen which, in many cases, has been brought into the land from the atmosphere by the clover.

T. O. WALLACE (Wallace & Fraser).
Toronto, Ont.; St. John, N. B.

Death of Mr. Joseph G. Snell.

It is our painful duty to record the death of the well-known stock breeder, Mr. Joseph G. Snell, of Snelgrove, Ontario, brother of Mr. J. C. Snell, of the *FARMER'S ADVOCATE*, which took place on Aug. 10th, resulting from a fall from a ladder in his barn. Mr. Snell was the third son of the late John Snell, and was in the fifty-second year of his age, though his appearance would indicate a much younger



THE LATE JOSEPH G. SNELL.

man. He was one of the best known and most enterprising and successful stock breeders and exhibitors in Canada, and also one of the best all-round judges, having frequently been called upon to act in that capacity at Provincial and State fairs, and he acted a prominent part in promoting the improvement of stock in Canada on sound lines, his specialty being Berkshire swine and Cotswold sheep, an importation of the latter being in quarantine at Quebec at time of his death, including a number of prize-winning animals at the Royal Show of England. He was a kind-hearted man and of a very cheerful disposition, and was deservedly popular in his own neighborhood and also amongst the stockmen with whom he had been associated for many years at the leading exhibitions and at the conventions of breeders. He will probably be missed as much as any one man at these gatherings. He leaves a widow, two brothers and seven sisters, who will have the sympathy of a large circle of friends among the readers of the *FARMER'S ADVOCATE* throughout the country.

Filling the Silo.

Doubtless before another issue of the *FARMER'S ADVOCATE* reaches our readers silo filling will have commenced in the earlier sections, and owing to the earliness of the season this work will be general throughout September. As years go on not only is the number of silos increasing rapidly, but the advantages of growing early-maturing varieties of corn are being appreciated. Along with this is the better understanding of growing and cultivating the crop, till the harvesting of the corn and filling the silo is being done earlier and earlier in the season. This has its advantages, in avoiding possible loss by frost, in having good weather and long days in which to do the work, and in clearing the fields that they may be plowed if so desired.

While early filling has its advantages, the experienced man will not commence before the crop is ready. The glazed stage of grain on the cob is doubtless the condition of maturity to wait for, as then the crop contains the maximum of nutriment in best form for digestion by the animals, and if properly put into a deep, air-tight silo it will come out neither mouldy nor containing too much acid. The former condition is caused by overdryness and the latter by immaturity. With corn that has become overripe, or allowed to wilt or dry after being cut, mouldiness can be prevented by sprinkling the corn with water as the silo is being filled. Some stockmen, who grow more corn and like more ensilage than their silo will hold at one filling, shock that which the silo will not hold and put it into the silo during the early winter or as soon as there is room. Liberal use of the water-can in the silo at almost every load is necessary in such a case.

Cutting the corn in the field continues largely to be done by hand by means of the corn knife or sickle. It would seem at present, however, as though the old tool is to be relegated to obscurity sooner or later. The various platform cutters and sleds with knives have been tried with satisfaction in nice standing crops, but these have little advantage over a first-class man with a corn knife, if he can be secured at a reasonable wage, as he will leave his bundles in nice shape to pick up. The corn binder seems to be the coming machine. Last year in some districts a number of machines were bought by three or four neighbors in partnership, and satisfactorily used in that way. In other sections machines were owned and operated by individuals, as are threshing machines, by charging a certain price per acre for binding up the crop. A man who owns a team and has time can do a good business in a corn district in this way, as the crop does not come in together, as with oats, wheat, and other grains. From our experience of last year a farmer will do well to employ one of these ma-

chines, if it can be secured reasonably and at the time the crop is ready. His own men and teams will then be free to haul the crop to the barn and put it in the silo. Some object to the twine being mixed with the feed, but we have never known injury from this source. Should it be feared that evil may result from the twine being in the feed, a boy could stand on the side of the feed board opposite the feeder to cut the bands and pick them out just as the sheaf is going into the machine. Again, the length of stubble usually left by a corn harvester is too great to suit some, but this can be reduced by cultivating the crop the last time or two towards the rows. When commencing to fill a stave silo, don't be alarmed if you can see through the cracks; the damp silage will swell the cracks tight in twenty-four hours, but beware of knot-holes or places in the edges in the boards that do not fit; tack a piece of tar paper over them. Try the hoops after the silo is filled a few days, and if too tight, slacken the nuts, or there is danger of bursting the hoops.

A wagon with low wheels and platform is generally preferred for hauling the crop. It is easy to load, and if driven onto a platform or higher ground beside the ensilage cutter, no inconvenience is noticed in unloading, especially so when the crop is bound. Owing to the number of hands needed to fill the silo, it is well to calculate on doing a rapid job. One man in the silo is considered necessary to keep the corn evenly distributed and the edges tramped. It is well, however, to allow two or three days interval between the time the silo is first filled to the top and when more corn is put in to fill the space made by the corn settling. This should be done two or three times if one has corn enough to fill the silo completely. Leveling the silage is facilitated by allowing the corn to drop from the elevator on to a small platform which will form a cone of corn, shedding it in every direction as it falls from the carriers. Where a blower is used this would not be necessary. Neither weighting nor covering the silage is now considered necessary. Simply carefully level and tramp each day till the settling has nearly ceased, and then sprinkling well with water. This forms a dense mould on the surface which excludes the air. Another plan, and one which Mr. Wm. Rennie, Agriculturist at the Guelph Experimental Farm, has found successful, is to spread snugly over the corn an oiled cotton spread, tucking the edges well down to exclude the air. This is, perhaps, the best covering yet produced.

Ensilage Corn Two Years Old.

Mr. J. A. James, of Nilestown, Ontario, who has a model silo built of concrete cement and gravel, recently left at this office a full ear of corn of the variety known as Butler's Dent, which is his favorite, and which had been dropped into the silo two years ago uncut and enclosed in the husk. It is perfectly well preserved, shows the dents in the kernels clearly, and evidently has sufficiently matured to have made good seed corn if it had been husked and thrown in a crib at the time it went into the silo. Mr. James had more ensilage in the spring of 1897 than he could feed, and the old stock was left in the bottom of the silo, the new crop being put on top of it. This summer the cows have been fed daily from the silo since the first flush of the pastures was over, the flow of milk being kept up well all through the hot and dry weather, and though they are now in clover to their knees, they relish the corn ensilage thoroughly, and are doing splendid work in the dairy. Mr. James is a strong advocate of well-matured corn for silage, and says that in his experience corn which was cut and shocked for a time and thus partially cured before being put in the silo made better ensilage than that cut and put directly into the silo, and that cut and left a day or two in bunches on the ground and partially dried made a better quality of ensilage than that cut and taken to the silo while fresh and green. These lessons serve to emphasize the advantage of having a supply of ensilage on hand to supplement the summer feed of the cows when pastures fail; to prove that an excess of moisture in the content of the silo is not conducive to the best quality of ensilage, and that there is no risk in leaving old ensilage in the bottom of the silo from year to year, if a few inches of the top which has been exposed to the air is removed before commencing to refill the silo. We recollect hearing Mr. Rennie, of the O. A. C. farm, state that he had not seen the bottom of the silo there for several years.

If any of our readers have experienced any ill effects from this course, or know of any valid objections to it, we should be glad to have them tell of it through the columns of the *FARMER'S ADVOCATE*.

An Effective Dressing for Ringworm.

There are many cures for ringworm on the market—few of them better than the ointment prepared by Mr. R. Gibson, the well-known dairy enthusiast of Limerick. An ointment which we have more than once seen used with excellent results is made up of equal parts of hog's lard and flour of sulphur. When these are thoroughly mixed there should be added to every five ounces half an ounce of pure carbolic acid dissolved in one ounce of glycerine. Rubbed in every second day, this ointment will be found very effective in destroying the parasites to which the ringworm is due.—*Farmer's Gazette*.

To Prevent Harness Galls.

A correspondent of the *Indiana Farmer* thus writes on this ever-important subject: The first thing necessary before one can work a horse or team is to have a good set of harness, and the next is to keep them in good order. The harness should fit the form of the horse, the collars especially requiring very careful attention. The collars should be neither too large nor too small, for in either case the horse will be seriously injured. Galls and bruises are always caused by ill-fitting, neglected harness. Before the busy work begins in the spring, the harness should be taken apart and washed well with soap and warm water. When partially dry they should be well oiled, with about all the oil they will absorb. Now with a little care in the beginning any farmer will be able to do a big summer's work without skinning his horses. At least three-fifths of the sores are found on the horses' necks and shoulders. By a little attention these may be avoided. The horses should do about half work the first week and their shoulders washed in hot water twice a day, at noon and night, until they are thoroughly toughened. They will then stand any amount of work without injury. A wash of alcohol and water is also good for this purpose. To prevent sore necks, use zinc neck-pads all the time, sore or well. But very frequently a farmer trades for a horse with a sore on his neck or shoulder. In this case we must have some remedies to assist nature in the healing process. If the sore is on the shoulder, a place should be cut in the collar a little larger than the sore and the filling removed, and as there is now no pressure on the sore it will heal of itself. Commonly the hair pads that a great many farmers use are a nuisance, as they scald the horses' shoulders worse than the naked collar; but in this case, if one does not wish to spoil a good collar, he may cut a space out of the pad to fit over the sore, or if it is very large use two pads, removing a space from a pad. A good ointment for collar sores, and especially for sore necks, is made from white oak bark. Place a quantity of the bark in a vessel, cover with rain water and boil until the liquid is about as thick as thin sorghum molasses, and then apply with a swab. Well-fitting, well-oiled harness, a little care on the part of the owner, and there will be very few bruises to require attention.

The Influence of Food on Animal Increase.

BY G. E. DAY, AGRICULTURIST, ONT. AGR. COLL.

The question of animal nutrition is not yet thoroughly understood by the scientist, and investigations are still being energetically pushed forward. But while there is still much to be learned, there is also much that is known, and he would be foolish indeed who would refuse to avail himself of the knowledge which science has placed at his disposal simply because there are still some things which remain hidden. The object of this paper is to indicate as briefly as possible some of the leading principles underlying animal nutrition, and, if possible, to draw a few lessons therefrom.

In the first place, it must be understood that vegetable matter contains substances very similar in composition to the substances which comprise the animal body. Animals eat vegetable matter, digest a portion of it, and use the digested portion in building up the different parts of their bodies, in producing progeny or milk, or in producing heat and energy. Thus, some of these food substances form bone; some form muscle, blood, milk, wool, hair, horn, etc.; some form fat; and others are burned (though there is no blaze) to produce heat in the body, which is necessary to sustain animal life and energy. The undigested part of the food is voided by the animal as solid excrement.

The substances contained in the food of animals may be grouped under five heads, as follows:

1. Water.
2. Ash, or mineral matter.
3. Protein (sometimes spoken of as "proteids," or albuminoids).
4. Carbohydrates (also called "nitrogen free extract").
5. Fat (usually called "ether extract" by chemists).

Water in foods is counted by some to have no more value than the water which an animal drinks; but it is well known to feeders that the use of some fodders containing a considerable amount of water, such as roots or ensilage, seems to have a beneficial influence in keeping animals healthy and in stimulating their appetites. Some overestimate and others underestimate the value of succulent fodders.

Ash, or Mineral Matter, goes to build up the bony structure of the animal, hence this is a very important part of the food of young growing animals.

Protein comprises several substances more or less similar in general character, and serves many purposes in the animal body. It contains nitrogen, and hence is concerned in the formation of those animal products containing nitrogen, such as lean meat, the nitrogenous part of milk, and many other substances. It is affirmed by some scientists, and denied by others, that protein may, under some circumstances, form fat. At best, however, this can be but a minor function of protein.

Carbohydrates, of which starch and sugar are good examples, contain no nitrogen. One of their

functions is to supply the animal with heat and energy, and another is to form animal fat.

Fat also contains no nitrogen, and, like the carbohydrates, it produces animal heat and fat.

From a practical standpoint, these substances may be grouped into three classes: 1. Ash, to furnish bone for the growing animal; 2. Protein, to produce muscle, lean meat, etc.; 3. Carbohydrates and fat, to form fat and supply energy.

All fodders contain a certain amount of ash, but some contain more than others. For animals that are nearing maturity, ash may be left out of consideration in the selection of fodders, but in feeding growing animals it should not be forgotten. Below is given a rough classification of some leading concentrated fodders on the basis of their ash constituents. The classification is possibly not perfect, but it may prove helpful to some. The fodders in each column are arranged in order of their percentage of ash, the richest heading the column and the poorer ones following in order.

CLASSIFICATION OF FODDERS ON BASIS OF ASH CONSTITUENTS.

Very rich in Ash. (5 per cent. and over.)	Rich in Ash. (3 to 5 per cent.)	Medium in Ash. (2 to 3 per cent.)	Poor in Ash. (Below 2 per cent.)
1. Cottonseed meal. 2. Oil cake. 3. Malt sprouts. 4. Wheat bran. 5. Buckwheat shorts. 6. Buckwheat middlings.	1. Wheat shorts. 2. Wheat middlings. 3. Oats.	1. Pea meal. 2. Barley. 3. Low grade flour. 4. Buckwheat.	1. Rye. 2. Wheat. 3. Corn. 4. Gluten meal. 5. Gluten feed.

A glance over this classification will furnish one reason why such foods as oil cake, bran, shorts, middlings, and oats have long been popular for feeding young animals. Much more might be said regarding bone-forming constituents, but space will not permit.

Regarding the protein, carbohydrates and fat, nature has so constituted animals that they must receive a certain amount of all these in their food. Generally speaking, those fodders rich in protein or fat cost more per pound than those low in these constituents and rich in carbohydrates. As a result, there is a tendency to feed rations which are rich in carbohydrates. It is true that animals require a much larger percentage of carbohydrates than of protein in their food, but there is a limit beyond which the feeder cannot profitably go, because the animal requires a certain amount of protein in order to make the best use of the carbohydrates which it receives. When a ration contains just the right proportions of protein, carbohydrates and fat to meet the requirements of the animal, it is said to be a *balanced ration*. A ration may be out of balance as regards ash constituents, though ash is not taken into consideration in the term *balanced ration*. If a young animal is fed a ration poor in ash, the result is weak bone and stunted growth. If the ration is poor in protein and is made up almost entirely of carbohydrates, the effect will be to produce an animal deficient in muscle and lean meat, but abounding in fat. Stunted growth is also likely to result from too small a supply of protein. On the other hand, no advantage is gained by feeding an excessive amount of protein, and the ration will be an expensive one. If extreme protein feeding is carried too far, deranged digestive organs will be the result. These are not theories, but facts which have been demonstrated by actual tests.

It is not practicable to feed with mathematical exactness, and fodders, especially the coarse ones, vary in digestibility according to their condition, so that many allowances must be made. It is practicable, however, for a feeder to have a general idea of the characteristic qualities of the fodders he is using, whether they are rich or poor in bone, flesh or fat forming constituents, and so it is practicable for him to mix those poor in protein with those rich in protein, thus producing an approximately balanced ration. In order to simplify the matter, the fodders which were previously classified on the basis of ash constituents, are here classified on the basis of digestible protein, the fodders being arranged

in each column in the order of their percentages of digestible protein, the highest percentage at the top of the column, and so forth.

CLASSIFICATION OF FODDERS ON THE BASIS OF PERCENTAGE OF DIGESTIBLE PROTEIN.

Very rich in digestible Protein. (Above 30 per cent.)	Rich in digestible Protein. (Between 20 & 30 per cent.)	Fairly rich in digestible Protein. (Between 10 & 20 per cent.)	Poor in digestible Protein. (Below 10 per cent.)
1. Cottonseed meal.	1. Gluten meal. 2. Oil cake. 3. Buckwheat middlings. 4. Buckwheat shorts.	1. Malt sprouts. 2. Gluten feed. 3. Pea meal. 4. Dried brewers' grains. 5. Rye. 6. Buckwheat flour. 7. Wheat middlings. 8. Wheat shorts.	1. Barley. 2. Wheat. 3. Oats. 4. Corn. 5. Rye. 6. Buckwheat. 7. Corn.

It is unnecessary to classify these fodders on the basis of percentage of carbohydrates, because the feeder will know that if he is feeding a ration poor in protein it must of necessity be rich in carbohydrates. It would be of interest to discuss the utility of the different fodders and methods of combining them, but this cannot be entered into here, and the reader is asked to study the two classifications for himself. However, one exception must be made. So much has been written regarding corn, that it is of more than passing interest to notice its position in the two classifications given. It will be seen that it is the lowest in protein of all the fodders mentioned, and nearly the lowest in ash. These two facts stamp it as entirely unsuitable as an exclusive ration, or as the main part of a ration for growing animals, since it is very deficient in both bone and muscle forming constituents. It is essentially a fat-former, and for this purpose it is, perhaps, unexcelled by any other single grain.

It is very true that many successful feeders know practically nothing of the composition of fodders, but long years of experience have taught them how to combine the fodders they are accustomed to use so as to produce a balanced ration, though they may never have heard the term. But when a man is forced to change his methods or to deal with fodders which are new to him, then surely a general idea of the characteristics of the fodders he is called upon to use, and an intelligent conception of the requirements of the animal body, would be of service to him in obtaining satisfactory results, provided, of course, that wisdom accompanies knowledge. Science is not a substitute for common sense, but is its powerful ally.

Great is the influence of food upon the character of the animal body, and much may be done by judicious selection of foods to improve the quality of meat produced by the animal. But he who claims that food is all-important in influencing quality of meat, takes a position quite as unreasonable, if not more unreasonable than he who claims that food has nothing to do with it. What would be thought of the dairyman who entirely ignored selection? Here are two steers receiving exactly the same kind of food, yet one gains rapidly in weight, while the other is a source of loss to his owner, and the longer he is fed the greater the loss? One more example must suffice. Among the pure-bred hogs sent from the Experimental Department of the College to the Wm. Davies Co. last fall there were three, numbered 10, 11 and 12, regarding which Mr. Flavelle wrote as follows: "Hogs 11 and 12: lean; fat even down the back; thick bellies; . . . generally desirable. Number 10 is quite too fat on the back for the best side; . . . this is a good pig spoiled by too rapid feeding and too much of it." Now, these three hogs were all of the same breed and ate out of the same trough. What is it, then, that enables one cow to produce more milk than another from the same kind and quantity of food; that makes one steer profitable and another unprofitable, though accorded exactly the same treatment; and that causes one hog to form more fat than another, though fed from the same trough? It is simply that mysterious something which is known as *individuality*. Food can influence and modify individuality, but it cannot overcome it. Food can do much, but its influence is limited, and intelligent feeding must be accompanied by intelligent selection if progress would be made.

Canada at Omaha.

Mr. W. H. Hay, Secretary of the Dominion Experimental Farms, who had charge of the installation of the Canadian exhibit at the Trans-Mississippi Exposition at Omaha, Neb., says Canada's magnificent display in the International Hall at the Omaha Exposition is a matter of surprise and in many respects is a revelation to thousands of people who were not previously aware of the extensive resources of our great country. The Canadian court covers an area of nearly 5,000 square feet. The location is first-class, as it takes in the main entrance to the building both on the south and west sides. The first feature to attract attention on entering the court is a large grain trophy. This trophy is octagonal in shape and is composed of eight magnificent arches of grains and grasses. In the center is a solid pyramid of grains 17 feet high and surmounted by a large sheaf of Manitoba hard wheat. The grain is from the Experimental Farms in Manitoba and the Northwest Territories, and is acknowledged to be the best at the exhibition. About 300 specimens of bottled grain are shown, besides several large bins of wheat, oats, and barley. These bins are constantly surrounded by farmers and millers, who delight in handling the grain, and keep the attendants busy answering questions regarding the soil and climate of the country. Along the east end of the court are three large arches of grains and grasses; the central, or main arch, bears the motto—

"WELCOME TO THE CANADIAN COURT."

The southern and western walls of the court are beautifully decorated with grains and grasses in all sorts of fancy designs. On the walls are also several large charts, as follows: "Canada Welcomes Settlers from all Nations"; "Free Farms of 100 Acres in Canada"; "Manitoba Hard Wheat, the Best in the World"; "Canada Supplies 60 per cent. of the Cheese imported by England"; "A Prosperous Agricultural People is the Basis of a Nation's Strength"; and many other charts of like nature.

Along the north side of the court, forming a sort of boundary, extends a screen of Canadian woods. Here the lumbermen and others particularly interested in the lumber business may be seen to gather and examine the very beautiful specimens and discuss the relative value of the oak, maple, ash, birch, cherry, and other hard woods. The specimens of our world-famous white pines attract special attention.

One very interesting feature of the Canadian exhibit to the general visitor is the extensive collection of photographs. These photographs are neatly grouped on the back of the screen of Canadian woods and constitute an interesting study on account of the great variety that is exhibited. They include views of the Parliament buildings at Ottawa and Victoria; many of the cities and towns of importance in Canada; the Experimental Farms; fruit farms; ranching; lumbering; mining; salmon fishing in British Columbia; harvest scenes in Manitoba, illustrating how the Manitoba hard wheat, the best in the world, is grown and harvested; also several good views of settlers' homes in the Canadian Northwest, showing the farm when first located and again a few years later, the improved conditions demonstrating clearly that whenever and wherever intelligent and experienced farmers locate in the Canadian Northwest they prosper phenomenally.

In the center of the court is our mineral trophy. This trophy is triangular in shape, being composed of three large cases so arranged that the contents may be seen at a glance. These are filled with rich specimens of gold, silver, copper, lead, zinc, tin, iron, and other metals, from the dull gray sulphates to the most beautiful and delicate forms of crystallizations. Over each case of minerals is an arch bearing the word "Canada." In the center of the triangle is a pyramid about 12 feet high. On each of the three sides of this pyramid are grouped photographs of mining scenes. Out of the top of the trophy rises a flag-pole on which are draped both the British and American flags.

The mines and mining interests of Canada are immense. Information in detail would fill a space ten times as large as can be given here. In brief, it may be said that Canada is a land of gold. We have gold fields all along the line from the new Klondyke to old Nova Scotia.

Other exhibits in the Canadian court deserving of special notice are those of maple syrup and honey. The honey exhibit is made up of 275 sections of clover honey, and several bottles of choice clear extracted honey.

The first shipment of fruits to the exposition will be made this week; further consignments will be made from time to time during the season from the Experimental Farm at Ottawa and Agassiz, and also from Essex County and the Niagara District, Ont., thus assuring a display second to none at the Exposition. Our fruits carry off the premiums everywhere, and most of the premium fruits are seedlings, showing that it is the climate which produces them.

On the whole, the Canadian court may be said to be one of the most attractive and most popular at the Exposition. The court is large, and contains a number of seats where visitors are invited to rest themselves.

The Canadian Immigration Agent, Mr. W. V. Bennett, assisted by Messrs. C. H. Meyers, H. C. Knowlton and J. Duncan, are doing good service in explaining to visitors the nature of the exhibits, and more particularly in talking up the merits of

our great Northwest and Manitoba, and giving information to people desiring to find a better country. All the Trans-Mississippi States are employing every means to induce settlers to locate in their particular districts, so that the idea of making such a large and collective Canadian exhibit is to be commended. This display of the products of our country will serve as an object lesson to intending settlers, and will no doubt in a great measure dispel the impression, held without warrant, but natural to our neighbors to the south, that Canada is a land of ice and snow. We have rain and sunshine in plenty. We have water and timber, and soil and climate, and we have a social condition that will compare favorably with the best communities in the United States. "What else could the intelligent immigrant desire?" He will certainly find no warmer welcome anywhere on the globe than in our Canadian Northwest.

Shallow vs. Deep Plowing.

In our issue of July 15th, page 336, a subscriber, referring to an alleged statement of Mr. Rennie, of the O. A. C., that "practically we only plow when breaking sod, and then only four inches deep," asks the question, "Would this shallow cultivation be sufficient for clay or loam soils? We have been hoping for an answer to this question from some of our readers, but have had none directly, though Mr. John Burns, of Perth Co., in our August 1st issue, in writing on the preparation for fall wheat, says: 'I am one of those who have never been convinced that it is all nonsense to get down to the subsoil, having been taught the old maxim in my early days to 'plow deep while sluggards sleep and you'll have corn to sell or keep.'"

It has also been said that "all extremes are error, and the truth lies between." While many maxims are good and safe under general circumstances and conditions, there may be, and often are, circumstances under which these maxims may well be modified and possibly ignored, and this is especially true of the operations of the farm in general and of the cultivation of the soil in particular. Much depends upon the quality and con-

Jersey Cow, Adelaide of St. Lambert 73652.



Owned by Miller & Sibley, Franklin, Pa. Milk yield: Average for 31 days, 64 85 lbs.; highest single day's milk, for H. Harrison, Cannington, Ont., 82 1/2 lbs.; for Miller & Sibley, 75 1/2 lbs.

dition of the soil and the subsoil in deciding upon the best treatment to be given it for certain purposes or for different purposes. Farmers having clay soils to deal with which are not underdrained, we believe do not, as a rule, find it practicable to carry out Mr. Rennie's system of surface cultivation, without plowing, to nearly the extent to which he does on the comparatively light soil of the College farm, but find it necessary in fall plowing for spring seeding to plow at least six inches deep and in ridges from twelve to sixteen feet in width in order to facilitate surface drainage and thus to prevent the heaving out of clover and wheat in low places by the frost. If the land were thoroughly underdrained this difficulty might not and probably would not occur, but we all know that underdraining is not practiced to the extent that is desirable, and farmers have to adapt their practices to existing circumstances. In our opinion fall plowing as a preparation for spring seeding should, not as a general rule, be less than six inches deep, but we have known serious damage to a field by deeper plowing bringing up cold and sticky clay which contained no plant food in itself and rendered the surface soil more difficult to work, less adapted to the production of good crops, and requiring years to get over the injury thus done to the fertility of the field. In the case of spring or summer plowing an average depth of five inches is, as a rule, sufficient, and Mr. Rennie's system of surface cultivation and surface manuring is generally practicable and commendable. Nature's plan of restoring and retaining fertility is by top dressing, and humus is the great want of most farms in the older settled sections of the country, and this can best be secured by the plowing down of clover and the use of barnyard manure applied on the surface or worked into the soil by shallow cultivation. By this method of applying manure the surface soil is kept from baking, the manure serving as a mulch. The decomposed manure is carried down to the roots of the plants by the rains, and another advan-

tage is that by this means a catch of clover or grass is more generally assured. Many good farmers have almost abandoned spring plowing for any purpose except for peas, for which a sod plowed in the spring is generally considered a good preparation. Even in the case of land intended for corn, roots or rape, if it has been plowed in the fall it is considered good practice to confine the spring working of the soil to thorough surface cultivation, first by the use of the harrow and a narrow-toothed cultivator, and later by the use of cultivators having wide and well-sharpened feet to cut all weeds and thistles and well stir the ground. By this means the moisture in the soil is retained, and the surface soil which has been mellowed by the action of the winter's frost and warmed by the sunshine of spring makes a congenial seed-bed and tends to early germination of the seed and rapid growth of the crops.

DAIRY.

Care and Modification of Milk "Certified" Pure.

The oft-repeated assertion that "what the eye does not see does us no harm" is not accepted by the Medical Commission of Essex Co., New Jersey, who, with their Fairfield Dairy, seek to produce milk suitable for infant and invalid feeding. The requirements of good milk are given as:

First—An absence of large numbers of micro-organisms, and the entire freedom of milk from the pathogenic (productive of disease) varieties.

Second—Unvarying resistance of early fermentative change in the milk so that it may be kept under ordinary conditions without extraordinary care.

Third—Having a constant nutritive value of known chemical composition and a uniform relation between the percentage of the fats, proteins and carbohydrates.

These are given by Dr. Milton Yale, of New York, in a paper read before the Trinity Medical Alumni Association at Toronto, and published in the *Canadian Lancet*.

The Fairfield Dairy referred to secure their "certified" infants' milk from a herd of about 200 cows. Jersey grades predominate, and all retained animals have to pass the tuberculin test. All cows are bought subject to the test and those are returned that do not stand it. As soon as they have passed they go to the regular barn, and from here the best cows are selected by the veterinarians to recruit the "certified" herd.

The stable is clean, dry, and constructed with a view to being kept clean. There is a cellar beneath which is used as an air space, not as a receptacle. The manure and other refuse is removed seven times, or oftener if necessary, in 24 hours, the watchman attending to this duty at night. It is removed to a receiving pocket which is suspended in the cellar beneath the stable floor. It tilts so as to load a cart instantly without further handling, and is removed twice daily in iron carts. Bedding is of rye straw, turned daily.

For greater cleanliness a milking shed is used to accommodate 20 animals at once. It is well lighted, the sides being largely composed of movable glazed sashes. The floors are of hard pine laid in tar. The side walls and ceilings are lined with sheet-iron, painted, so that the whole may be flushed with water.

All feed is kept in separate barns away from the cattle. It consists of corn meal, wheat middlings (shorts), bruised barley sprouts, cottonseed meal, ensilage from matured corn, clover and timothy hay. The water supply is from a spring guarded by a roof and by sides of wire screen. The water is shown by analysis to be very pure, but for still greater safety driven wells are contemplated. The cattle are groomed once each day, and the cows' bellies and udders are brushed by an attendant who does it in advance of the milkers. The cattle are out of doors from two to seven hours daily, according to season and weather.

The workmen, who are Poles and Hungarians, are examined physically by a local physician once or twice a month. Tubercular subjects or those with skin affections are excluded, and when actually ill are quarantined until seen by the physician in charge of them. This physician renders reports to the Commission. The men all wear white duck suits and caps, which are changed and sterilized daily. The milkers have elbow sleeves when milking. The forearms and hands are carefully washed and nails cleaned before milking, and the hands are re-washed with every full pail, or about every second cow.

The milk pails are of block tin, the top soldered to the edge of the pail, leaving only a circular opening about seven inches in diameter, which is filled by a fine brass wire gauze disk, upon which the milk falls in milking. The pails are sterilized in the large sterilizer at the dairy house under five pounds pressure, equivalent to a temperature of 226° F.

The milk is poured into sterilized forty-quart cans, which are sent over a suspended wire cable to the dairy house about two hundred yards away, being received into the second story of the building. It is immediately put into a large strainer of white metal which contains two filtering layers. The upper consists of several thicknesses of sterilized gauze, beneath which is a wire netting; the lower, of a layer of absorbent cotton. This filtering only removes visible particles, but not bacteria.

From this filter it passes directly to the cooling coil. This consists of 21 tubes carrying spring water of a temperature of 51° F., and 12 tubes of ice water. The coil is carefully sterilized just before using, with a hose bringing steam directly from the boiler in great quantity. This has sufficient force also to wash down all dust. The walls and floors of the room are also sterilized by steam, and the floors are kept moist. The milk goes over the outside of the coil and is aerated as it goes. It is delivered at a temperature of 38° F. into a trough leading to a filter of metal, lined when in use with sterilized gauze. The spring water is not wasted, but passes on through pipes to the stable for use there.

From the filter the milk passes to the bottles, eight bottles being filled at once. The bottles are stopped with a wad of pastebord sterilized in an oven at about 160° F. for 20 or 30 minutes. This wad bears the date of milking. The whole is covered with a metal cap to exclude dust, melted ice, etc. The cap carries the certified stamp and the injunction, "Keep between 40° and 50° F." The bottles are immediately packed in partitioned boxes and covered with broken ice, and are ready for distribution. No milk is sold more than 18 hours after milking.

Bottles are washed in soapstone tubs in three waters by hand, and examined before sterilizing. All bottles from houses where contagious diseases exist are brought in separate wagons, and are all boiled before washing and sterilizing. They are then put into a sterilizing chest, the door of which is fitted with steam packing and is screwed tightly into place. Steam is turned in and kept at a pressure of five pounds, giving a temperature of 226° F. In 20 minutes the bottles are completely sterile. When they are placed upon the filling table they are covered with a sheet of sterilized duck to keep out the droppings. The milk is examined every two weeks by the chemist and bacteriologist; the Medical Commission inspects every detail thoroughly monthly. If all the examinations and inspections are satisfactory the Commission "certifies" the quality of the milk. Periodically-printed copies of these certificates, with the analyses which have been made, are sent to those interested in such matters. These are of great assistance to the physician, as giving him exact knowledge of the constitution of the milk he is using.

Now, it is not to be expected that dairy farmers, even those who supply milk to town or city customers, will institute such elaborate systems as the Fairfield Dairy has done, chiefly, perhaps, for the reason that it would not be profitable to do so, as the milk-consuming public is not sufficiently discriminating to place a proper value upon a "certified" milk. In fact, it would be an inconsistent thing to do, unless the same scrutiny were exercised in the selection and preparation of all other food products. There are lessons, however, in the foregoing description for the humblest of dairymen, one of which is the need of the most cleanly habits in caring for milk, in order to preserve it as wholesome as when it leaves the udder of a healthy cow. There is not a step in the entire system outlined that is deemed unnecessary, and that by men eminently qualified to pass righteous judgment. Every portion of the process costs money to provide for and to operate, but all are determined to be necessary in turning out the most healthful sort of milk. No doubt the same conscientious care, in kind, is exercised by many milk producers, if not in degree, while it is also true that too large a proportion pay little, if any, heed to cleanliness, further than necessity compels them in order to get their milk off their hands to the factory or customer. It should not be forgotten that while milk in pure and fresh condition is a highly valuable food product, its susceptibility to deterioration renders it highly important that all practicable effort should be made by dairymen to provide against conditions that would lessen its wholesomeness.

Jersey Butter Test at the Tunbridge Wells Show.

The following is the official report on the butter test at the Tunbridge Wells Show for the medal and prizes of the English Jersey Cattle Society. Sixteen cows were entered for the test, of which fourteen were present. The cows were milked out on Wednesday evening, July 20th, the next twenty-four hours' milk being taken for the test at seven o'clock on Thursday morning, and six o'clock in the evening.

Directly after the evening's milking on Thursday the milk was passed through a Farmer's Alpha Turbine Separator at a temperature of 90 deg.

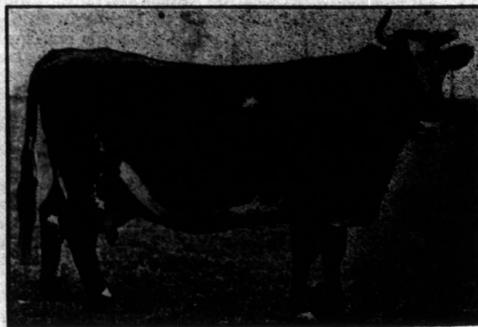
Churning began at 9.30 on Friday morning with five Wade's champion churns, the cream and churns being cooled down to a temperature of 51 deg.

The awards were as follows:

	Weight of butter. lb. oz.
First prize, gold medal, to Mr. J. R. Corbet's cow Em...	3 4
Second prize, silver medal and £5, to the Jersey Herd Dairy Company's Ruby	2 7 1/2
Third prize, bronze medal and £3, to Mr. W. McKenzie Bradley's Miss Dawish	1 15 1/2

The fourteen cows yielded an average of 1 lb. 12 1/2 oz. of butter each, at a period of 120 days after calving.

A Good General Purpose Cow.



The above illustration represents an excellent dairy cow, the property of Mr. Edmund B. Gibson, of Saffron Walden, Essex, Eng. She was reared by a neighboring farmer and bought by Mr. Gibson in the autumn of 1889. Her milking record is as under:

	LBS.
1890.....	9,837.23
1891.....	10,344
1892.....	8,916.5
1893.....	8,571.72
1894.....	8,904.16
1895.....	7,897.4
1896.....	7,725
1897.....	5,500.2
Average.....	8,491.1 during 8 years.

She has bred regularly, her heifers are invariably good milkers, and there are at the present time sixty-six of her descendants on the farm. She is now barren, and will soon be fit for the butcher. She is a Shorthorn grade, and is truly a rent-paying animal.

GARDEN AND ORCHARD.

Gnarled Pears.

"Fruit Grower" writes: "Last year I enquired, through the FARMER'S ADVOCATE, of the Dominion Horticulturist as to cause and treatment of gnarled pears produced on a couple of trees for several years, but the trouble seemed to be wrapped in more or less obscurity. However, by way of experiment, this season for the first time I gave these trees three thorough sprayings with Bordeaux mixture and Paris green, and not only are the pears larger and finer in color, but there is very little trace of the old trouble to be seen. The trees and soil were not treated differently in other respects. I do not say spraying will cure gnarling of pears, but simply give the facts as observed."

A Fruit Experiment Station for Algoma.

Mr. L. Wolverton, of Grimsby, Secretary of the Ontario Fruit Growers' Association, and Prof. H. L. Hutt, of the faculty of the Agricultural College at Guelph, at the request of Hon. John Dryden, Minister of Agriculture, recently visited the Algoma District to examine into the fruit possibilities of the New Ontario.

It was found that such varieties of apples as Baldwins, Greenings, Spies and Kings have not been grown successfully there, but such kinds as Transparent, Duchess, Wealthy and Gideon do well.

The commissioners found that a few hardy varieties of pears and cherries can be successfully grown there, and that where apple trees live they bear fruit earlier than in the older sections of the Province. Another object of the visit was to decide upon a suitable locality for an experiment station for fruit culture, and they found that the resident farmers generally favored locating it on St. Joseph's Island at a point convenient of access for visitors. Mr. Wolverton and Prof. Hutt will, it is understood, report favorably to establishing a fruit experiment station in Algoma.

Picking, Packing and Shipping Fruit.

Canadian fruit growing and the Grimsby district are closely identified. The sorts of fruit produced there are apples, pears, peaches, plums, grapes, and all sorts of small fruits, such as berries, currants, of all good sorts that grow well in Ontario. One of our editorial staff recently spent a day on each of the farms of Mr. Murray Pettit, of Winona, and Mr. A. H. Pettit, of Grimsby, making a few observations on the methods employed in conducting these farms and in handling the crops of fruit. Mr. Murray Pettit's fruit plantation occupies about seventy acres of rather heavy soil, and includes 25 acres of grapes, 14 acres of winter apples, 14 of plums, 13 of pears, and a few peach and cherry trees. While all the fruits grown are given the best possible attention, as indicated by the condition of the trees and vines and clean condition of the soil, Mr. Pettit's specialty is grapes, of which he has some 160 varieties, many of which are grown for experimental purposes. It is the intention to have exhibits of all these at the Toronto Industrial Exhibition, where our grape-growing readers should make it a point to visit. It is feared that owing to the earliness of the exhibition some of the later varieties may not be matured, but at all events an instructive display will be made. It will be remembered that Mr. Pettit with a collection of

similar magnitude secured 1st honors at the Columbian Exposition over all American grape growers, Californians included, but through some irregularity was never granted the premium. This was a great feat for a Canadian, and much credit and gratitude are due Mr. Pettit for his success.

The 25-acre vineyard is an interesting spot to visit at this season, but more interesting a few weeks later when the crop has ripened. The uniform, well-laden rows of about half a mile in length, leading up to the foot of the mountain, indicate thoroughness in the general and detailed management. The vines spread evenly over the wire trellises, and the ground between the rows is kept clean and level. The ground is usually plowed twice during the fore part of the season and shallow cultivation follows up till the crop is ripe so as to retain moisture. Of the 100 varieties grown, the following ten sorts include Mr. Pettit's choice as being most profitable to grow: Of black grapes, Champion, Worden, Concord, and Wilder (Rodgers' No. 4) were mentioned; of red, Red Lindley, Delaware, Agawam, and Cataba; of white, Moor's Diamond and Niagara. These embrace early, late and mid-season varieties, and therefore extend the picking for about two months, commencing about September 1st. The packages used are largely the ten pound chip basket, but some fancy lots go in California cases. They are usually picked into large baskets and held one day to wilt, when the bunches pack more closely together and shrink less afterwards.

Pears were the only fruit being picked at the time of our visit. The sorts most largely grown by Mr. Pettit are Early Giffard, Bartlett, Flemish Beauty, Duchess, and Keifer. Early Giffard, or Bourra Giffard, is the sort now going to market and is a ready seller. It is of medium size, bears a pretty blush, and has a delicious flavor. These, as most of the pears except the winter sorts, are being shipped in twelve-quart baskets, covered with red gauze. Some of the late varieties go in barrels and half-barrels. Early pears especially require to be picked quite on the green side, as they acquire a better flavor ripening off the tree than on and are less liable to go soft around the core. All the trees are gone over each day, and those most fit are taken, thus prolonging the picking season without waste by overripeness and by getting the largest possible growth. Their season lasts about two weeks and are followed in close succession by later sorts till late fall. Mr. Pettit pointed out the advantages of spraying as shown between sprayed and unsprayed rows. Those sprayed four times were decidedly larger and cleaner than the unsprayed rows next them.

Plums are showing a full crop of numerous standard varieties. While spraying was attended to, Bordeaux for rot and Paris green for curculio, a small portion of the crop will be lost from those pests. Mr. Pettit is of opinion that more thorough spraying would have almost entirely prevented these troubles. Plums are handled like the pears, in twelve-quart gauze-covered baskets. They, like all other fruit, are carefully picked after they have acquired the mature bloom, but before they have become soft. Only first-class, perfect fruit is put in the cases, and the quality of fruit is the same throughout the shipment.

The Peach Crop is well-nigh a failure in the Grimsby district owing to the prevalence of curl leaf during the early part of the season. A few growers have a fair crop of some sorts, especially on young trees, but these are the exception. Spraying has been resorted to in thoroughness, but evidently the correct mixture or the nature of the disease has not yet been discovered, as little, if any, good effect has been shown.

Shipping and Marketing.—For a number of years there has existed what is known as the Niagara District Fruit Growers' Stock Co. It has about 100 members, who supply between 30 and 40 agencies, extending from Winnipeg to Halifax. The central office of the company is at Grimsby, in charge of the Secretary, Mr. L. Wolverton, who receives dispatches each morning from different agencies as to the supply and price of fruits in season. These are telephoned to the members of the company, who judge for themselves where to ship. Sales are reported to the senders and also to the secretary, who pays the members their checks monthly, after deducting a 10 per cent. commission, which goes to defray expenses of telegraphing and other items. In this way the best possible market is secured just when the fruit is ready. The fruit is shipped each day right from the grower's door, chiefly at this season to Toronto, Ottawa, Montreal, and other north-eastern markets. The electric line, which passes in the case of Mr. M. Pettit through his farm, connects with the Canadian Pacific Railway at Hamilton, and takes on fruit all along the way, carrying it by Dominion Express to all points touched by that line. The Grand Trunk line also goes through the fruit district, and takes through a daily fruit train which stops at all stations. By this line all Grand Trunk points are reached by quick dispatch, so that Niagara fruit growers have little to complain of in the way of marketing facilities. We here have an evidence of the value of co-operation and strict business methods.

Of course the prices of fruit, especially grapes, pears, and plums, are not as good as they used to be a few years ago, but the more modern cultivating implements, methods of handling the crop, and better marketing facilities have made it possible to make money by correspondingly lowering the cost

of production. These have to be continually studied and advantage taken of them as the price goes lower. Strict business principles are involved, perhaps, to a greater extent in fruit growing than any other line of agriculture, which gives the wide-awake, brainy man the advantage over his naturally less fortunate brother.

THE BRITISH MARKET FOR FRUIT.

For a number of years Mr. A. H. Pettit, who was Canada's Fruit Commissioner at the World's Fair, has made the markets of Great Britain a study, and has consigned a number of shipments, principally of apples, to London, Liverpool, and Glasgow. His fruit plantation covers some 50 acres, on which he has 1,100 to 1,200 pear trees, mostly of Bartlett and Duchess; 1,100 apple trees, of Baldwins, Greenings, Spies, Russets, and a few trees of Astrachans and Alexanders; and the remainder in grapes, peaches and small fruit. Astrachan apples and black berries were being picked and shipped at the time of our visit to the stock company's agencies mentioned above. It is the intention to send forward a shipment of Alexanders to the English market through the Dominion Agricultural Department, who sent 14 cars of early fruits last year in cold storage. The fruits sent last year were early apples, pears, plums, tomatoes, and grapes. This year cases for ten cars have been provided the committee of nine members of Grimsby fruit growers who have agreed to supply the fruit. The fruit when ready is packed and stored in the new cold storage building erected for this purpose in Grimsby. When thoroughly cold one or two cars, or whatever is ready, is sent forward by refrigerator cars to Montreal, then by steamship cold storage to a commission house in Britain. The growers are guaranteed the home market wholesale price for their fruit, and have with all other fruit growers the advantage of opening the new market for future years, which will be of no small consideration if the shipments arrive in first-class order and are immediately put on the best markets under the name "Canadian fruit." In connection with this enterprise one car of grapes was taken last year and will be again this season. This seems like a very small quantity with which to introduce our excellent Canadian grapes at a time when we have so many to spare. The plea is made that Englishmen will not eat Canadian grapes while they can get better flavored sorts from Southern Europe, but it does seem reasonable to suppose that hundreds of tons would be consumed, especially by the middle classes, if put down to them at a low enough price. The average wholesale price received in Canada for grapes has during late years been not over two cents per pound, and in Britain for continental grapes six to seven cents. Now our growers could very much undersell the European and still have the best Canadian price, which, if it were no better than is now received, would relieve the Canadian market considerably.

The Apple Trade with Great Britain could be made much better than it now is if more care were taken in packing the crop, and better ventilated, cooler steamship facilities afforded. The former trouble lies largely with the packers, who buy up whole orchards, employ cheap help, and pack apples of all grades together and stamp them No. 1 XXX, or something to indicate a good product. During a conversation with Mr. G. H. Shuttleworth (of Simons, Shuttleworth & Co., of Liverpool), Apple Commissioner, we learned that a serious lack of confidence in Canadian apples results from the cause of dishonest packing and branding. The remark was made by the gentleman referred to, that every barrel of poor fruit takes the place of four or five of a first-class sort, for the reason that the poor barrel injures the demand for more, while a good one would improve it by causing a greater consumption.

The question of better steamship quarters will have to be taken hold of by our Government with more vigor than in the past. As it now is, ship companies claim they cannot provide special cool quarters for apples for the short season of two or three months, and the result is apples are often sent down below in the hottest place in the vessel, which, of course, seriously deteriorates the fruit by causing it to heat and sweat, and in some cases completely ruins it, so that the shipping of apples across the ocean, even when well packed, involves considerable risk and sometimes serious loss.

Notwithstanding the dangers of a ruined shipment, Mr. A. H. Pettit sends his winter apples direct to Great Britain. His method is to secure boat space ahead, which always enables him to get cars when he wants them, and then oversees the picking and packing personally, putting in only No. 1 choice stock. As fast as the apples are picked and packed they are taken away and forwarded to the commission house decided upon, so that every chance is given the fruit to open out in fine condition. Occasionally a lot arrives slack and deteriorated, but taking one year with another a good price is secured in this way.

Mr. Pettit's pear orchard is a sight to delight the eye. The bulk is of Duchess and Bartlett grafted on quince stocks. The trees are nourished in such a way as to produce fruit and not wood growth, by giving liberal cultivation and only the coarsest of barnyard manure. The result is a tremendously heavy yield of beautiful, even, clean fruit throughout the entire orchard, with very little new wood out the ends of the limbs. A neighboring pear orchard we noticed that had been given every care and advantage, receiving liberal dressings of bone

meal, has made great wood growth this season, but has produced no fruit to speak of. It is probable the returns of future years will make up for this season's deficit. We instance this to show the treatment that produces fruit and that which advances growth of tree. Much of the first-class stock from the pear orchard will be sent to England in the Government department shipments.

The peach crop on this farm too is well-nigh a failure this season. Mr. Pettit is studiously pursuing experiments to combat the curl leaf, and it is hoped will soon find a remedy.

The tomatoes sent forward last year to the British market were complained of as being too large, so Mr. Pettit is endeavoring to grow dwarf sorts such as that market asks for. He has a quantity of plants growing between rows of peach trees more as an experiment than as a marketing crop. These will not produce heavily, but the fruit will be smooth and fine. The cultivation on this farm is of a sort similar to Mr. Murray Pettit's.

POULTRY.

Early Moulting

AND HOW IT MAY BE BROUGHT ABOUT—DETAILS OF MANAGEMENT—EXPERIENCE LEARNED AT THE EXPERIMENTAL FARM—SUMMARY OF POINTS.

To have early winter layers, the hens should moult early and be in prime condition—that is, neither too fat nor too lean—by the middle or end of October. They should begin to lay well in early November, when the price of eggs is going up in the cities and large towns. In the colder districts of Canada, hens go into winter quarters about the beginning of December, sometimes earlier, and from that time until the following April they are artificially fed and housed. It is during that period that the up-to-date poultry-keeper has his harvest, for in Montreal and Ottawa prices for new laid eggs range from 45 to 30 cents per dozen, according to severity or otherwise of the season. The highest figures are obtained about a week previous to the Christmas season, and for a month following. In the milder portions of the country, where the curing of winter eggs is not so much a matter of skill in feeding and management, because the hens can run out, occasionally prices are lower. It is, however, an object in either case to have the laying stock over their moult by October. It must be remembered that while hens are moulting they do not lay eggs, hence the moulting period is one of non-production. It should be an object, then, to cut short, if possible, that season of non-production. Can it be done? Yes, but success is conditional, and here are some of the conditions:

1. The laying stock should not be over two years of age.
2. They should have a run in midsummer in a field where they can find insect life and get clover and grass.
3. Meat or cut bone should be supplied in regular quantity. The meat should be cooked.
4. Where the fowls are confined to limited quarters, green stuff and meat, in some shape, should be regularly supplied.

HOW WE MANAGE AT THE EXPERIMENTAL FARM.

For the past three or four years attention has been given to the bringing on of an early moult and the shortening of the non-revenue producing season. Every effort was made to have hens moult in the midsummer months when the price of eggs was about the lowest. In order to bring this about, during the first week in July the breeding pens were all broken up and the male birds were removed to quarters by themselves. The hens were then allowed to run promiscuously in small fields then allowed to run promiscuously in small fields they had grass and clover and a certain amount of insect life. The rations were composed of wheat, buckwheat and oats—the two latter mixed—and were fed twice per diem. During August, a warm mash composed of ground grains, to which was added deodorized blood meal in the proportion of one ounce to every ten hens, was fed three times per week in the morning, and a grain ration in the afternoon. When cut bone could be procured, it was fed in lieu of the deodorized blood meal, and in a quantity of one pound to every fifteen hens. A light noon ration was occasionally given. This treatment was continued until the new feathers were fairly well out, when the noon ration was dropped and every care was taken to prevent the hens becoming too fat. Towards the end of October, cut bone, in the proportions named, was fed three times per week regularly. When laying had fairly commenced in November, a small quantity was given every day. Roots or cabbage were in abundant supply.

WHAT WAS LEARNED.

Experience proved that if the above treatment is carried out, with care that too much is not fed and an overfat condition result, the laying stock will make a satisfactory response in the winter months, commencing with a moderate output in late October or early November, and gradually but surely increasing. For instance, in the fall of 1896 we had 204 hens and pullets, and they gave in November 508 eggs, and in December 1,466 eggs. We calculated we had 120 active layers, for we had kept over a certain number of old hens for set-ters, as we had no incubator. A certain number of old hens were also kept over for breeders. Winter

laying commenced at end of October. Your numerous readers interested in poultry will know full well that no hens could have laid the number of eggs and in the months named unless they had gone into winter quarters in prime condition.

Another lesson taught was that winter layers moult early. The moral is obvious to the farmers. Let them make their hens lay well in winter. Have your hens moult during the hot summer months; at that period prices are low. As it is, the hens of the great majority of farmers begin only to lay in spring, and do not moult until late in the fall. Nay, some of the old stock take all winter to drag through their moult. It is needless to say that such stock are not only unproductive, but eat a certain portion of the profit made by the active layers.

SUMMARY.

A synopsis of treatment recommended may be interesting:

1. Let the laying stock have access to clover and grass and insect life if possible. If kept in limited quarters, supply cooked meat and green stuff regularly.
2. In middle of August give mash three mornings of week. Other three mornings, cut bone or cooked lean meat, beef heads, etc. For afternoon ration, sound grain of some kind.
3. When new feathers appear be careful not to overfeed. Keep hens in exercise searching for their grain food if possible. If in limited quarters, exercise is imperative to avoid an overfat condition.
4. The early pullets will stand a greater quantity of stimulating food than the older hens. May hatched pullets ought to begin to lay in December or late November.
5. The above applies to hens not over two years of age, and which are winter layers.
6. A supply of grit, pure water, lime, and green stuff are at all times essential, particularly so during the winter season. Hens running at large will, of course, supply themselves if it is to be had. Do not say, "Oh! you have fine buildings, all the requisites, and the Government at your back, and you can do what we cannot." Not so; we have fourteen breeds, composed of old, middle aged and young birds. We experiment with a view of giving you what we learn. And we do know that a farmer with one breed of fowls ought to have a good time in handling them so as to make money out of them. In poultry keeping, as in every other department of farm work, intelligence, energy, and a thorough knowledge of your business is imperative. With proper care there is money in poultry.

A. G. GILBERT.

Central Expt. Farm, Ottawa, 25th July, 1898.

MISCELLANEOUS.

Tamworth Standard of Excellence and the Bacon Temperament.

SIR.—The following is the standard recently adopted by the National Pig Breeders' Association of Great Britain:

TAMWORTH.

- Color.—Golden-red hair on a flesh-colored skin, free from black.
- Head.—Fairly long; snout moderately long and quite straight; face slightly dished, wide between ears.
- Ears.—Rather long, with fine fringes, carried rigid and inclined slightly forward.
- Neck.—Fairly long and muscular, especially in boar.
- Chest.—Wide and deep.
- Shoulders.—Fine, slanting, and well set.
- Legs.—Strong and shapely, with plenty of bone, and set well outside of body.
- Pasterns.—Strong and sloping.
- Feet.—Strong and of fair size.
- Back.—Long and straight.
- Loin.—Strong and broad.
- Tail.—Set on high and well tasselled.
- Sides.—Long and deep.
- Ribs.—Well sprung and extending up to flank.
- Belly.—Deep, with straight underline.
- Quarters.—Full and well let down.
- Flank.—Long, wide, and straight from tip (hip) to tail.
- Hams.—Broad and full, well let down to hock.
- Coat.—Abundant, long, straight, and fine.
- Action.—Firm and free.
- Objections.—Black hair, very light or ginger hair; curly coat; coarse mane; black spots in skin; slouch or drooping ears; short or turned-up snout; heavy shoulders; wrinkled skin; inbred knees; hollowness at back of shoulder.

In my opinion points of superior excellence would be shown (and added to the above) by (a) a slightly prominent pelvic arch; (b) well-developed vertebrae; (c) strong navel development; (d) udder of long abdominal attachment from front to rear, and well balanced as to form; and (e) femininity and musculinity. My theory is that the special bacon hog must possess great nervous energy—indicated by the conformation—like that of the dairy cow and the race horse. Milk-giving is a nervous function; so is speed in the horse, growth of fine wool in the sheep, and red meat—bacon—in the hog. Judges at our fairs this fall would do well to study these points when judging Tamworths, and there is no reason why the Tamworth and all other breeds having a standard of excellence should not be scored by points.

J. A. MACDONALD.

P. E. I., July 18.
[NOTE.—The system of judging by score-card has been tried and found wanting. It is now discredited and discarded even by the leading poultry associations, where it had a fair trial, and where, if anywhere, it might have been expected to give satisfaction. There is just as much difference in the men's judgment of the comparative value of the various points as there is in their estimate of the comparative excellence of the animals as a whole judged by the senses of sight and feeling.—EDITOR.]

QUESTIONS AND ANSWERS.

In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.

Veterinary.

Caked Udder.

W. M. S., Ontario Co., Ont.:—"I have a cow which was allowed to go till calving without being milked, and now she has a hard and distended udder, a hard lump at base of each teat, and a large lump, apparently of same nature as udder, at side of milk vein about six inches in front of udder. No sign of pain anywhere when parts are pressed. Milk comes all right. Should the udder have been allowed to get into this condition? How ought it to be prevented, if not, and what is the cure? Does it affect calf in any way to milk cow before calving?"

[Unless this is a very exceptional case, it will probably yield to simple treatment, such as fomenting with warm water, followed by warm vinegar, and rubbing with lard. Give a teaspoonful of nitrate of potash or saltpeter daily in feed. If an extreme case and the hard lump at base of teat remains, rub daily with compound tincture of iodine mixed with three times its bulk of water, or with iodine ointment. Milking the cow before calving does not affect the calf materially, and in an extreme case such as the above we would advise milking, though as a rule, and except in a case where the udder becomes abnormally distended and painful, we do not recommend it.]

Worms in Dog's Throat.

SUBSCRIBER, Palmyra, Ont.:—"I have a valuable collie dog one year old. He acts as if trying to get something out of his throat, and is always coughing. I have lost three the same way. They quit eating after awhile, then pine away, and after a time, about a month, die. Can you tell me what is the matter, and tell me what to do for him?"

[Parasitic diseases of the dog are numerous, and this particular form is known as *Strongylus Filaria Bronchialis*; in appearance very like small pieces of white thread. They are more abundant in the small bronchi of the lungs at its bifurcation, and it is only when one becomes detached from the mass that it gives rise to the symptoms of coughing. Treatment is difficult and tiresome: consists of sub-tracheal injection of the tincture of iodine, iron, and spirits of turpentine every second day, but only one well skilled in canine diseases should undertake what is at all times a difficult case. Inhalation of chlorine is successful with sheep when it is known as "sniffles," and hoose in cattle, and from observation in our packing houses find it very prevalent among hogs. I would advise that you consult a veterinary surgeon in your immediate district.]

DR. WM. MOLE, M. R. C. V. S., Toronto.]

Diarrhoea in Pigs.

SUBSCRIBER, Huron Co., Ont.:—"I have had several pigs about three months old affected with diarrhoea. Two have died, and one more is pretty near dead. Have them running on field of alfalfa, feeding also once a day, at night, a mess of whole peas. I have taken two away from the rest and put them in a pen, but they don't seem to get better; everything seems to physic them. Information how to cure will be thankfully received?"

[It may be that alfalfa has had the effect of producing this trouble, though we have not heard of its doing so in any other case. We would recommend a change of pasture and feed—a short timothy or blue grass pasture and dry bran for a few days—water being supplied in a separate trough. If the diarrhoea continues we would give to each pig a dose of castor oil, say about four tablespoonfuls, to allay the inflammation in the bowels and cool them; then give dry feed, bran and shorts, for a few days, when, if improved, the feed may be varied and increased gradually.]

Miscellaneous.

Couch Grass (*Triticum repens*).

A. G. J., Simcoe Co., Ont.:—"Inclosed please find a head and root of grass that is in part of one field on my place. Could you give me name of it and a sure method of getting rid of it, for it seems almost impossible to kill it?"

[The head and root of grass sent us by "A. G. J." is clearly couch grass, sometimes called quack grass or twitch grass. Its correct designation is *Triticum repens*, and is indeed a bad weed to get rid of. It is a creeping perennial, the root-stalks of which are so numerous as to soon fill the soil. The root-stalks are really underground stems; they produce buds at their numerous scaly nodes, and these buds develop into new plants in exactly the same manner as branches are produced above ground. The stems grow to a height of from one to three feet, according to the soil and season, and each terminates in a slender head three to five inches long, having small, oat-like seeds distributed over one-third to half an inch apart on alternate sides of the stem. The plants make a good growth early in the season, usually maturing seed in July or August. It is easily distributed by seeds and by portions of the roots adhering to harrow and other tools and being taken to other portions of the farm. The eradication of couch grass is not a simple matter. One plan is to plow the infested field shallowly im-

mediately after harvest, then harrow thoroughly with spring-tooth or other harrow, so as to shake the roots of the grass free of soil. Then draw the roots together in windrows, and after they are dry, burn them. Repeat the operation a second or even a third time through the autumn, plowing the ground more deeply each succeeding time, so as to bring up fresh root-stalks. This, however, is useless in damp weather. Late in the fall rib the land by turning two furrows into one, which exposes the most possible roots to the frost, which kills them and frees them from the soil. In spring repeat the operation of the early fall until time to plant a hoed crop. This should be frequently and thoroughly cultivated throughout the season. If the hoed crop is desired in some other field of the farm, the remaining couch grass can be fairly well smothered out by sowing buckwheat, one and one-quarter bushels per acre, about the middle of June, and harvested when ripe or plowed down when in bloom. The following spring sow rank-growing oats more thickly than usual, which will succeed in smothering the last vestige of couch under ordinary circumstances.]

Rules for Stone Masonry.

STONEDIKE, Ont. Co., Ont.:—"What proportion of lime, fresh and air slaked, and sand should be used to make mortar for a foundation wall? Can you tell me how much mortar would be required, say per 10 or 20 cubic feet?"

[The proportions ordinarily vary from 3 to 6 of sand to one of freshly slaked lime. In ordinary practice the proportions in mortar are roughly made by the mixer and depend on the working quality of the mixture, according to fineness or coarseness of the sand used. One cubic yard or 27 cubic feet of rough wall requires approximately 33 cubic feet of rough stone and 9 cubic feet of mortar.]

VETERINARY.

Goitre in Sheep.

An unhealthy condition in the sheep flocks of Canada is of rare occurrence, which is due, no doubt, to our generally healthful climate, moderate size of flocks maintained, and the sanitary conditions in which they are kept. During the last few months, however, our attention has been drawn to the prevalence of goitre in flocks in certain districts, showing itself more particularly in lambs, at or soon after birth, causing death in numerous instances. This disease is characterized by a non-inflammatory swelling of the thyroid gland below the throat, and in lambs often causing a great swelling reaching from beneath jaw to brisket. At first the swelling is soft and doughy to the touch, but gradually may become hard, and when cut into may be found to contain gritty particles, especially in cases of long standing. So great does the swelling become in some instances that breathing is interfered with, causing the lambs to fail and often succumb.

A case submitted to us for advice, and published in April 1st issue, page 155, illustrates a phase of the trouble of a very serious nature, viz., the affection of many of the lambs of a crop, attended by serious fatality. In the opinion of the writer on this disease in the bulletin of the National Wool Growers' Association, such cases as the above, where the majority of the lambs of a flock are affected, is that the disease is of a hereditary nature, and the inherent predisposition in the lamb is aggravated into the disease itself by the character of the soil upon which the flock is maintained, or, more correctly speaking, by the food produced from such soil, and the drinking water peculiar to it. As we pointed out in replying to the inquiry above referred to, the disease is common to soils and water abnormally rich in the salts of lime.

In looking for a remedy for this trouble, the above facts must be borne in mind, and that where a predisposition to this or any other disease exists, all debilitating influences increase the tendency to and severity of the disease. Avoidance of the recognized causes of the trouble is the first important effort of the shepherd who would eliminate it from his flock or prevent its annual recurrence. In a limestone section, one thing that can be done is to furnish no drinking water other than rain water, but this will not avail much where succulent food is used liberally, such as turnips or mangels, as in such cases little, if any, water would be taken. When the inherent tendency is present by reason of the ewes for generations having been reared on a limy formation, the chief means of prevention is frequent introduction of fresh blood from rams produced upon different geological formations, and known to inherit no such predisposition. It would also be necessary to fatten off, instead of breeding, all young ewes showing any trace of the disease, and as soon as possible get rid of any ewe giving birth to a "goitred" lamb. Were it practicable to use fodder grown on some other formation, it would be a wise means of getting rid of the trouble, but such a method is out of the question, even for consideration.

The approved treatment for goitre, as given by the authorities, is iodide of potash internally, and tincture or ointment of iodine externally, or the tincture injected hypodermically into the body of the goitre. With young lambs, however, success even with this treatment has been slight. Another treatment, and one which has been found to give good results, is local bleeding. The writer

above referred to recommends making an incision into the swelling with a sharp lance, so as to scarify it deeply without making the cut in the skin wider than the narrow blade of a knife. In other words, insert the knife and move the blade within the body in several directions, so as to cause profuse bleeding. Care must be taken not to sever the jugular vein, but the incision should be lateral, and in two or more places if the swelling is large. After the bleeding has lasted some little time, inject with syringes into each wound as much tincture of iodine as possible, then paint the entire swelling with the tincture. With otherwise healthy sheep, when not too old, the bleeding and iodine treatment has been found to restore goitred subjects to healthy condition.

SHOWS AND SHOWING.

Exhibitions for 1898.

Trans-Mississippi, Omaha	June 1 to Nov. 1
Stanstead, Rock Island, Que.	Aug. 24 and 25
Toledo Tri-State	Aug. 22 to 27
Toronto Industrial	Aug. 29 to Sept. 10
New York, Syracuse	Aug. 29 to Sept. 3
Ohio, Columbus	Aug. 29 to Sept. 2
Bedford, Ont.	Aug. 31 and Sept. 1
Minnesota, Hamline	Sept. 5 to 10
Eastern, Sherbrooke	Sept. 5 to 10
Metcalfe	Sept. 6 and 7
Morrisburg	Sept. 6 to 8
London Western	Sept. 8 to 17
Indiana, Indianapolis	Sept. 12 to 17
Quebec	Sept. 12 to 21
Prescott, Vankleek Hill	Sept. 13 to 15
Richmond	Sept. 13 to 15
New Brunswick, St. John	Sept. 13 to 23
Bay of Quints, Belleville	Sept. 14 and 15
Northern, Walkerton	Sept. 14 and 15
Renfrew	Sept. 15 and 16
Bowmanville	Sept. 15 and 16
Ottawa Central	Sept. 16 to 24
Brantford	Sept. 17 to 22
Wisconsin, Milwaukee	Sept. 19 to 23
Napanee	Sept. 20 to 21
Northern, Collingwood	Sept. 20 to 23
Peninsular, Chatham	Sept. 20 to 22
Prescott, Prescott	Sept. 20 to 22
St. Thomas	Sept. 20 to 22
Stratford	Sept. 21
North Bay, Ont.	Sept. 21 and 22
Lanark, South Perth	Sept. 21 to 23
Stratford	Sept. 22 and 23
Lindsay	Sept. 22 to 24
Halifax	Sept. 22 to 23
West Williams and Park Hill, Park Hill	Sept. 26 and 27
Illinois, Springfield	Sept. 26 to Oct. 1
Shedden	Sept. 27
Cayuga	Sept. 27 and 28
Lanark, Almonte	Sept. 27 to 29
Centre Bruce, Paisley	Sept. 27 and 28
Northwestern, Goderich	Sept. 27 to 29
Peel, Brampton	Sept. 28 and 29
Prince Edward, Picton	Sept. 28 and 29
Barrie	Sept. 28 to 30
Dalhousie, Ontario	Sept. 29 and 30
Oxford, Kempville	Sept. 29 and 30
Elgin West, Wallacestown	Sept. 29 and 30
Galt	Sept. 29 and 30
Ontario and Durham, Whitby	Sept. 29 to Oct. 1
Peterboro, West Peterboro	Sept. 29 to Oct. 1
St. Louis, St. Louis, Mo.	Oct. 3 to 8
Woodstock	Oct. 3 to 5
Norfolk, Tilsonburg	Oct. 4 and 5
Tara	Oct. 4 and 5
Markham	Oct. 5 to 7
New Westmin's'er, B. C.	Oct. 5 to 13
Caledonia	Oct. 6 and 7
Norwood	Oct. 11 and 12
Norfolk, Simcoe	Oct. 11 to 13
Woodbridge Stock Show, Brantford	Oct. 18 and 19
Ontario Fat Stock Show, Brantford	Nov. 30 to Dec. 2

[NOTE.—If Secretaries of Fair Boards will send us dates of their shows we will include them in the lists of succeeding issues of the FARMER'S ADVOCATE.—EDITOR.]

"What Can I Learn at the Fair?"

The continued dry weather and consequent rapid ripening of the crops has resulted in an early harvest-home, which goes far towards opening the way for farmers generally to attend the fairs which commence with the last days of August. We predict a larger attendance than usual of farmers at the fairs this year. The spirit of recreation is in the air, and so too is the spirit of enquiry, and the desire to learn more of the best methods and means in stock raising, in agriculture, horticulture, and dairying. All these and many other departments will be unusually well represented at the fairs this fall. To get the greatest benefit from these events there should be on the part of the visitor some definite purpose or plan and inspection should be made systematically. To rush from point to point and from place to place, taking only a hurried glance at each department of the show, is anything but satisfactory, and results in a tired body and a confused mind. It is well to decide first which departments one is most interested in or is most desirous of gaining information about. The next step is to secure a programme of the proceedings mapped out for each day, and the hours when they can be seen to best advantage, then study the plan of the grounds and buildings with a view to economy of time, and you are in a fair way to get the best of the show. To view the stock to best advantage it is well to see them in the ring when the judges are making their examinations and where comparisons are most readily made, and where by the aid of the catalogue, if one is prepared, information as to ownership and breeding may be obtained. The departments of grain,

roots, fruits, dairy, and implements can often be seen and their advanced productions studied and carefully compared to good advantage early in the morning or late in the evening when the live stock is not in the ring, and when the buildings are less crowded than at other times. Those more intent on the lighter lines of entertainment will readily find their way to the grand stand in the day time, where their curiosity will be catered to, but visitors who go to learn and profit by careful observation will do well to devote the day to the solid spheres of practical work, and if they are disposed to combine amusement and entertainment they can find it in the programme for the evening sessions. The farmers and their wives and sons and daughters are well entitled to a few holidays after the toil of the summer days, and there is no place where they can better combine pleasure and profit than at the fairs, and that at a comparatively small expense, since transportation is furnished at a very moderate rate by the terms of the excursion trains and boats which are run during the days of the fairs.

Toronto Industrial Exhibition.

The virtue of Canada's great fair and Toronto Industrial Exhibition, which will be held this year from August 29th to September 10th, is that it is never permitted to get into a rut. Each year something novel is forthcoming, and something that can be seen at no other annual fair. Toronto Fair, in fact, is unique in itself. Its fame is far-spread and its enterprise and resource warrant its fame. This year there will be an unusual number of new features in the Exhibition proper. For the first time French and English firms will make classified exhibits, for which special agents are now in Toronto completing the necessary arrangements. There will be fully twenty-five English firms represented by several carloads of goods, and a score of French establishments. An exhibit that will command attention will be that of automobile or horseless carriages, four of which will be shown in action. Another interesting display will be made by Mr. C. F. Holtermann, apiary lecturer at the Ontario Agricultural College, who under a large gauze tent will show bees making honey. He will deliver addresses explaining the methods of beekeeping, ancient and modern, and by way of illustrating how little experts have to fear from the sting of those busy little creatures, Mr. Holtermann will allow them to swarm upon his arms. The experimental farms of the Province and country will contribute their usual quota, and will each be represented by one or more professors who will deliver explanatory addresses. In every department, almost without exception, there is a marked improvement, both in the quality and quantity of entries. More manufacturers are showing and more inventions will be on view than ever, while the exhibit of electricity and electrical appliances will be of a nature to attract world-wide attention. Upwards of 1,000 horses, 700 cattle, 650 sheep, and 500 swine will be on the grounds. One of the prime features, and the prime attraction to many, will be the grand scenic spectacles, one of which will be presented by day and the other by night. By day will be given in the lake off the grounds an illustration of real warfare, and the chief incident that led to the Spanish-American conflict. Submarine mines will be laid and exploded by a detachment of the Royal Engineers, under Lieutenant Dumble, from Halifax, N. S.; ships will be blown up; craft will be fixed up to represent battleships, and a fort will be erected in the lake, that will be stormed at with shot and shell, quick-firing and Maxim machine guns being operated by the Royal Canadian Artillery. At night a representation will be given of the siege of Santiago, the sinking of the Merrimac, and the destruction of Admiral Cervera's fleet, a captive balloon and hundreds of soldiers being employed, and a troupe of dancing girls to take part in the celebration of the American victory, which will be the closing number. The usual international dog show will be held, and \$2,500 given in premiums and prizes in kind. There will also be horse racing every afternoon, the purses for which average nearly a thousand dollars a day. Entries for poultry close on Saturday, August 20th, and for dogs on Thursday, August 25th. Single fare tickets will be on sale everywhere.

A Silver Jubilee Show.

This year the Western Fair celebrates its Silver Jubilee. As an exhibition it does not need to put on additional frills, but it will, nevertheless, in honor of the occasion, and for the greater gratification of its tens of thousands of annually delighted patrons. London, Ont., has had a phenomenal record as an agricultural show center as far back as 1854, the regularly organized Western itself dating back to 1868. This is partly due to the superb farming and live stock country which it specially represents, and to the enterprise and integrity with which its affairs have been managed, and to the wholeheartedness with which leading citizens and agriculturists have devoted themselves to promoting its interests. Its record has been one of steady progress. The FARMER'S ADVOCATE has taken occasion a few times to point out where we thought improvements were needed, and must acknowledge that the administration of the fair has always shown itself more than anxious to do the very best possible for its patrons. The grounds on Queen's Park are naturally the most beautiful fair site in many respects we know of, either in America or Great Britain, and the magnificent buildings of recent erection stand in evidence of a liberal policy. Could some Rip Van Winkle of the old Lake Horn Show days suddenly wake up amidst the show of 1898 he would find himself amazed in a new world, and this season's visitors will find numerous and unexpected improvements, even compared with 1897. During the past few years nearly \$31,000 has been spent in permanent improvements, and still the board has a cash balance on hand of over \$3,150. Good management has enabled them to put up a handsome cash prize list, and to make an increase for the approaching show, which will be held from Sept. 8th to 17th inclusive. It will particularly interest breeders of live stock to learn that there have been additions to the premiums in that department instead of trimming down. As our readers will remember, only two years ago the

new stock, machinery, and other buildings were erected, and yet this year over 5,000 square feet had to be added to the carriage building, 79 box stalls erected in the horse buildings, a beautiful new art gallery added to the main building, which will be greatly appreciated by lovers of paintings and other fine arts. An examination of the entry books and space plans afford an idea of what the coming show will be. The revival in the live stock trade naturally brings out more and better exhibits in all classes, and numerically this is the case this season. The occupants of the stalls and judging arenas will speak for themselves later on. We were pleased to note among the new exhibitors in the horse department Messrs. D. & O. Sorby, of Guelph, Ont., who will be forward with a string of 21 animals, which will be a show in itself; while in the cattle department Mr. W. E. H. Massey, of Toronto, one of the heads of the great Massey manufacturing establishment, who is devoting attention to agriculture, will be out with a herd of about 30 Jerseys, including the famous importation brought out this year from the native home of this great butter breed in the Channel Islands. Western Ontario dairy and stock men will be glad of the opportunity to view the select contingent from Mr. Massey's great herd, now one of the finest in Canada. The boom in swine raising will likely bring out big exhibits in that department.

Turning to the agricultural machinery department we find that every foot of space in that immense building was allotted some time ago, and extra provision is being made for others. The implement men are in high fettle this year, and we have no hesitation in predicting that the exhibit will eclipse anything ever before witnessed on a London show ground.

The Secretary, Mr. Thos. A. Browne, assures us that it will tax to the utmost their resources to accommodate completely the exhibits coming forward, and they are fixing the space for animals, etc., as the entries are made, and it has been decided that late comers with entries will not be allowed to crowd and inconvenience those who live up to the rules. Those concerned will do well to take the hint in time, or else suffer the consequences.

In the way of entertainment before the grand stand and on the speeding track the Attractions Committee have prepared a programme extending from Saturday afternoon till the following Friday, sparing neither trouble nor outlay to get the best in that line. Lack of space prevents our going into details, all of which will be found in the official programme. One novel feature of the evening fireworks display will be a realistic representation of the battle of Manila Bay, where Admiral Dewey's fleet annihilated the Spanish squadron.

In the way of distinguished official visitors, the Western Fair's ways secure the best, and this year will be no exception. On Tuesday, 13th Sept., we are pleased to learn the show will be honored with the presence of Sir Oliver Mowat, Lieutenant Governor of Ontario, the unbeaten Premier and champion statesman of that banner Province. Western Ontario readers, you may miss some good things in 1898, but you cannot afford to miss the Silver Jubilee of the Western Fair.

Ottawa Central Exhibition.

"The Siege of Delhi," the spectacular to be presented at the night entertainments of the Central Canada Fair next month, was the first victory of the British in the great Indian mutiny just at the close of the Crimean War, in which Sir Henry Havelock distinguished himself. The thrilling spectacle will be presented by means of pyrotechnics in the hands of special artists, who will be assisted by five hundred soldiers of the Capital. The Fair directors are up to date in every respect. Their latest move, and it is a most excellent one, is to issue a '98 Fair souvenir. The book is a creditable specimen of the printer's art and contains pretty nearly everything one wants to know about the exhibition, including the daily programme. The places of interest in the city, hotel rates, and a fund of other information are also to be found in the book.

A number of prominent English firms are to exhibit at the Central Canada Exhibition next month, as they have come to the conclusion that it is to their best interests to exhibit in the Confederation's Capital.

MARKETS.

FARM GOSSIP.

Still Another Pork Packing Establishment.

The corner-stone of a new co-operative pork packing establishment at Palmerston, Ont., with a capacity for 1,000 to 1,500 hogs per week, was laid on August 3rd by Mr. Joseph Stratford, of Brantford, manager of the Farmers' Binder Twine Co. The company has a capital of \$90,000. Mr. W. J. Falconer is president; Mr. John Burns, vice-president; Mr. Wm. Lynch, treasurer; and Mr. John Oliver, secretary. The other directors are Messrs. A. Meyer, G. V. Poole, Jacob Ankenman, Scott Cowan, John Seiler, Alex. Hamilton, Jos. Ballamy, and Wm. Grose. There are already some 400 shareholders on the books. About 1,500 farmers from the adjacent townships, besides all the leading townsmen, were present.

It was the town civic holiday, and the citizens entertained all comers to lunch in the agricultural hall, after which President Falconer took the chair, introducing the various speakers of the day, among whom were Rev. E. Marshall and Mr. Duncan McKewin (of Brantford), who advised farmers to feed all their coarser grains on the farm, and advocated hogs instead of horses. Mr. James McMullen, M. P., congratulated the people of Palmerston and vicinity on their enterprise, and after a trip to the States he concluded that the Canadian farmer was ahead of anything seen there in appearance, intelligence and enterprise. Mr. Joseph Stratford, the speaker of the day, recounted the battle of the Farmers' Binder Twine Co., and stimulated the promoters of the new Palmerston enterprise to renewed zeal.

At the close of his address \$1,000 was added to the stock list. At the close of the speechmaking there was a procession, headed by the band, to the site of the packing-house, where the stone-laying ceremonies took place. Rev. A. K. Caswell, of Philadelphia, Pa., advised the farmers to start right by using the best bred hogs, and feeding them on the best foods. Mr. Stratford poured upon the stone small quantities of corn, wine, and oil as emblems of plenty, cheerfulness, comfort and consolation. Mr. John Oliver, the energetic secretary of the company, read an interesting historic sketch of the movement, the conception of which, he said, was due to Mr. Stratford, who had seen the results attained by the twine company, and noting the excellent railway and other facilities of Palmerston, and the excellent class of hogs raised and shipped from that locality. The matter was introduced last March, during the spring show, and subsequently it was encouraged by the town council, which sent delegations to Ingersoll and Collingwood, Ont., to look into the establishments at those places, and which reported in favor of going ahead. Mr. Wilson, architect, of Collingwood, was selected to draw the plans. The stone basement was now completed, and by August 15th it was expected the brickwork would be well under way. Mr. Oliver said this was the first co-operative pork packing establishment projected in Canada. They felt sure there was an almost unlimited demand in the British market for the best brands of Canadian bacon, and further that there was a good profit in the manufacture and sale of such produce. In six months they expected to have in operation one of the best equipped factories in the Dominion, backed up by a thousand of our very best farmers, who have made swine husbandry a special study. He trusted that in years to come they would be able to look back to this occasion as a red-letter day, not only in the history of Palmerston and adjacent townships, and the counties of Wellington, Perth, and Huron, but of the Dominion itself.

Co-operative Pork Packing at Harriston, Ontario.

Announcement is made of the incorporation of a new enterprise, viz., the Harriston Pork Packing Co. (Limited), with a capital of \$100,000. The chief promoters are Messrs. Robert Fallis, W. D. McLellan, Miles Bateman, John Copland, Wm. Douglas, Joshua Homes, Richard Wilkin, Geo. Fulton, and Joseph Lavery, of the Township of Minto, Wellington Co.; Richard Dowling, Dr. S. M. Henry, J. W. Wilson, John Meiklejohn, J. L. Eddy, Geo. Leighton, and James Bailey, of Harriston, Ont.; and Aaron Wenger, of Ayrton, the latter being the well-known creamery-man. Harriston is a thriving town, having connection both with the C. P. R. and G. T. R., and is located a few miles north of Palmerston, where the corner-stone of another packing enterprise is under way, as reported above. These two establishments will draw their supplies of hogs largely from the counties of Wellington, Huron, Bruce, Grey, North Perth, and Waterloo, and probably part of Dufferin, in which fine district they should give an immense impetus to swine husbandry.

On Saturday, August 6th, there was a monster general meeting of the stockholders interested in the new factory, and much enthusiasm was shown. Secretary W. D. McLellan reported that the concern had secured Government incorporation with a subscribed capital of \$100,000, and work was being rushed on the erection of the building at Harriston in a position favorable to both railways. When the meeting was called to order at five o'clock there was not even standing-room to be had in the Harriston council-chamber, where the gathering was held. The farmers were enthusiastic, and much business of importance was finished. Harriston has shipped this year to Ingersoll and Toronto an immense number of fine bacon hogs, and the promoters feel that this co-operative pork-packing establishment has not been undertaken by the farmers and the citizens of Harriston any too soon.

Nova Scotia Crops.

Mr. B. W. Chipman, Secretary for Agriculture, Nova Scotia, summarizes as follows the crop conditions in that Province: "The outlook for the agricultural year 1898 in this Province is, upon the whole, satisfactory. The crop bulletins for this year were made returnable to the Office of Agriculture on July 4th, and the probabilities of the various crops are estimated on information received up to that date. Eighty-four returns were received from the counties of Nova Scotia proper, and twenty-four from the Island of Cape Breton. All the principal agricultural districts of the Province are represented in these returns and a careful analysis of them has been made. These show that the hay crop is an abundant one, being eight per cent. above a full average crop on uplands, six per cent. on improved dykeland, and four per cent. on intervals. Owing to the excessive crop of last year there is a greater supply of old hay still in the country than has been the case at this time of the year in many years. The big crop of this season, coming on top of that, assures a great supply of fodder, which ought to tell in the shape of a large increase of stock for beef and dairy purposes. The large hay crop of last year has told already, as the returns show that in many districts there has been an increase in beef and dairy stock. The potato crop promises to be slightly above a full average, and roots generally promise well. With suitable weather the oat and other grain crops will be better than usual. There is quite a notable increase in the acreage devoted to wheat in recent years. This is due to two causes, namely: (1) The yield of last season was extra large wherever sown, and gave great encouragement to increased cultivation. (2) The great jump in the price of flour in the early spring, caused by the outbreak of the Spanish-American war, made the growth of wheat a leading feature among farmers generally in favorable localities. Lack of warmth and sunshine during the month of June retarded the growth of Indian corn for ensilage and the crop will therefore be considerably below the average. This is to be regretted, as no more valuable and profitable fodder can be raised for beef and dairy cattle when used judiciously with other nutritious food. "The fruit crop, which promised to be exceedingly

abundant in the period of bloom, will fall far below early expectations, as the returns from the great fruit region of the Oorwallis Valley indicate. The wet and cold weather which succeeded the blossoming season prevented perfect pollenization and the fruit did not set well. It is curious to note that outside of what are known as the great fruit counties the apple crop promises better than usual."

Prince Edward Island.

Haying is not near through yet. The haying season has been so wet that it is difficult to get along with the work. Hay is a heavy crop, but some of it will be damaged by wet. The grain crops are very heavy in straw, and considerably lodged. Wheat is filling well, except in some few localities where there is complaint of midge. Harvest will begin about August 20th. Root crops are coming on splendidly, and are well advanced for the season. Potatoes are doing finely, and the early varieties are ready for use.

Pastures are the best we have had for many years, and need very little supplementing yet with green feed. The flow of milk has never been checked, as is generally the case at this time of the year. Many of the dairy stations will double last year's output. The make of cheese is especially large. June cheese has mostly been marketed. The price ranged from 7½c. to 7¾c. July cheese is not sold yet. Two cheese buyers are operating on this market, A. J. Biffin for Hodgson Bros., and T. J. Dillon on his own account. Cattle are in excellent condition, and grass beef is going to market. Most of the winter-fed beef stock is used up. Grass beef is worth about six cents dead weight. Lambs sell for 2½c. to 2¾c., live weight, according to quality. There are very few fat hogs to market just now, but there are double the number being fed for the fall trade than there was last year. Farmers have given up raising thick-fat hogs, and have turned their attention to producing hogs of the bacon type. We have no exhibition here this fall, and many of our stockmen are preparing to show at St. John and Halifax. W. S. August 6th.

Lincoln County, Ont.

Comparatively little change has taken place in this district as far as the prices of cattle are concerned. Very few export cattle are left, and the best butchers' stock is barely touching 4c. Milch cows of the best type are far from plentiful, and sellers can command from \$40 to \$45 for a good animal. Butter has taken the customary upward step at this time of the year, and good rolls are bringing from 20c. to 25c. per lb. It would undoubtedly pay farmers to give more attention to soiling crops to keep up the flow of milk during July and August. Eggs are somewhat scarcer, and are selling at 15c. to 18c. Hay can be bought anywhere from \$4 to \$5.50 per ton. There was a big crop, and as a rule saved in excellent shape. Wheat was above the average; the midge did a little damage in some sections, but on the whole the yield will be fair and the straw bright and heavy. Oats promise a medium crop only, and the straw somewhat short. What I reported about the fruit crop in June turns out to be pretty much the case. On the whole the crop is a disappointment. A few peach orchards will turn out fairly well, but thousands of trees will be painfully bare of the luscious fruit. "Curled leaf" doubtless weakened the trees and helped create the present condition of things. It is questionable if a quarter of a crop will be marketed from this district. Apples are lighter than was anticipated two months ago, many orchards have practically nothing. Plums also will be decidedly light. The codling moth and auroulic have naturally done a vast amount of harm; with a small supply of fruit to breed in, their work has told disastrously. No doubt climatic conditions and insufficient fertilization of blossoms caused much of the "dropping off" so generally complained of, but insects are responsible for a good deal of it. Where practicable it would be well to gather up this fallen fruit and prevent the larvae maturing. Pears will probably be an average crop, though Bartlett's in the eastern part of the county are reported light. Grapes will be one of the best crops for years in this district, most vineyards promising a clean, full crop. M. B.

Prince Edward Island's Crops.

NO MORE CORN FOR THE ISLANDERS—CHEESE AND BACON.

The crops on the Island are continuing to do splendidly, the best in years, and the same is true of Nova Scotia and New Brunswick. The potato crop in Prince Edward Island is comparatively free from bugs, and the fact of immunity from this pest alone gives them a luxuriant appearance. Early potatoes are now being used for table use, and are quite large. The oat crop will be an enormous one, and the abundance of straw is quite unusual. The hay crop was very late, owing to wet weather so that it could not be made. At this writing Islanders are in the midst of the hay harvest. Much of the crop will not be cut and saved before the 15th. Turnips are doing well. I hardly see any fodder corn at all. The majority of farmers here abandoned fodder and ensilage corn, owing, probably, to the bad results from the crop last year. Prof. Robertson gave some bad advice to us farmers in these lower provinces when he exhorted us to grow corn in place of roots. Many of us tried corn for several years, and slighted our old friend root, but as Poor Richard says, "Experience is a hard school, but it is the only one where fools will learn."

There are 42 cheese factories in full swing this season, and I hear of no shortage in the milk supply from any of them. The weather being so cool thus far, the cheese cures well, and probably June and July cheese of this season will, in quality, surpass anything of the kind ever placed on the British markets. Prince Edward cheese has already made for itself an enviable name in the markets of Britain; in fact, our Island cheese sold last year for higher prices than any other cheese produced in Canada. It seems there is something in our pasture grass, from the saline breezes of the Gulf of St. Lawrence, that gives a pleasant and peculiar flavor to the Island cheese which suits the discriminating palate of Mr. John Bull. Several factories have sold for 8c. It is estimated that \$500,000 of British gold will be brought across the seas this season in exchange for the product of our cheese and butter factories. And perhaps more impor-

tant to the Maritime farmer than even the cheese, is the bacon industry, and will draw as much British gold to our shores as our dairy products. There will be fully half a million of British gold taken to this Province alone this year for bacon and hams. The dairy cow and the bacon pig are going to be, if turned in partnership, the salvation of our farmers. J. A. MACDONALD.

Herrmannville Farm, P. E. I., Aug. 4th.

[EDITORIAL NOTE.—It would be interesting to have the views of other Maritime readers as to their experience with corn, of which such a doleful account is given above. We shall be glad to hear from them on this topic. It would be well to bear in mind that heavy turnip feeding and fine flavored butter do not, as a rule, go together.]

Middlesex Co., Ont.

Reports from threshers are most disappointing, especially in case of fall wheat and oats. In odd cases the former may reach 30 or 35 bushels per acre, but it drops as low as 13—chicken feed at that—but as a rule the sample is fine. The average yield will be under 20 bushels, I feel certain, and in view of these facts and the general shortage in wheat supplies farmers will be loath to sell at the wretchedly low prices now offering. Barley and peas (where grown) are yielding better than the other two grains. Rain has come in streaks, so that while roots, corn, after-grass and pasture look well in some sections, they are discouraging in others. Everything points to an early-matured corn crop and an early fall-wheat seeding.

Central Eastern Ontario.

Since harvesting commenced with us until the finishing of the same to-day we have not lost one hour of working time from wet weather. On the other hand, all growing stuff is suffering seriously from the terrible drouth; grain filled wonderfully well, notwithstanding. Corn is almost at a standstill, and promises an early, dwarfed maturity. Mangels made splendid promise of great things early in the season, but both mangel and turnip foliage is withering rapidly, meaning a stop to further healthy growth. This is a season of discouragement for our dairymen. Low prices are ruling for cheese and butter; added to this, the complete failure of our best pastures in most places makes bad worse. Most farmers do not care to do much supplementary feeding of their dairy stock. Mill-feeds are still too high: bran, \$14, shorts, \$16. They think it unwise to draw heavily, so early in the season, on the corn fields. This all means that many cheese factories will have a very short season's run. The demand for all lines of fat stock is very good. Lambs are being contracted for at 8½c., with the prospect of a further rise. Winter and early spring pigs are being marketed at 5c. and 5½c. Very few silos are being built this summer. Although the silo is past the experimental stage, many of our most progressive farmers have not adopted it. While there are certain points in its favor, there are likewise several contra. Mr. Jos. Yuill has just finished a large square stone one, 18 x 20 x 30 ft., estimated capacity 225 tons. About 60 cords of stone were used in building. Since the ground here is too dry for plowing, threshing, which is just commenced, will probably be finished early. J. J. F. Leeds Co., Ont., Aug. 8th, 1898.

Toronto Markets.

The cattle market receipts for July show that while the cattle and sheep returns are just holding their own as to former years, the hog trade goes on increasing by leaps and bounds. The receipts this year to the end of July were 163,807, as compared with 110,990 for the same period of last year. Our heaviest receipts are usually in October and November, and by that time the new packing houses at the foot of Bathurst street, the property of Messrs. Parks, Blackwell & Co., will be in running order, with a capacity of 5,000 per week. Mr. Wm. Wilson, of Collingwood, is appointed architect to draw plans and specifications of a packing house at Palmerston, Ont., with a capacity of 1,500 hogs per week, the base of supply being the townships of Wallace, Minto, Howick, Peel, Maryboro, and Arthur, Ont.

Export Cattle.—The receipts of fat cattle were small compared with recent deliveries, and the price unchanged. Exporters sold at \$4.25 to \$4.50 per cwt. Mr. W. H. Dean bought one load of exporters, 1,265-lb. average, at \$4.45 per cwt. Messrs. Brown & Snell bought one load of exporters at \$4.35 per cwt. Daniel McDougall and McCulloch, of London, Ont., sold two carloads of best exporters, equal to any on the market, 1,346-lb. average, \$4.35 per cwt., to Joseph Gould, of Boston. Messrs. Rountree and Halligan bought 44 exporters at \$4.50 per cwt., less \$10 on the deal, and 15 steers, 1,270-lb. average, at \$4.45 per cwt.

Butchers' Cattle.—Choice butchers' cattle sold at \$4 to \$4.12 per cwt.; good, \$3.75 to \$3.90; rough cattle, \$2.50 to \$2.75 per cwt. Mr. Zeagman sold a load of butcher cattle, 1,000-lb. average, at \$4.40 per cwt., the top price for the day. Light deliveries caused the price to advance in some cases as much as 20c. per cwt. William Lavoah bought 165 cattle, mixed butchers, at from \$3.75 to \$4.35 per cwt. Only two carloads of butchers' cattle went through for Montreal.

Bulls.—Export bulls, light, of good quality, in demand; two carloads sold at from \$3.80 to \$4.12 per cwt.

Stockers.—The large supply of small stockers from Montreal market made the demand from Buffalo slow. Choice \$3 light steers. Culls at \$2.50 per cwt. Mr. C. Cambell bought one carload of stockers and shipped to Bismarck, Ont.

Feeders.—There was very little demand for heavy feeders, which were slow of sale at \$3.50 to \$3.75 per cwt.

Sheep.—The demand quite active, with prices firmer. Ewes selling at \$3.25 to \$3.35 per cwt. Mr. J. W. Flewelling sold a bunch of ewes, for which he obtained top price, \$3.25 per cwt.

Lambs were in better demand, holders firm, at from \$3 to \$4 per head; all sold on offer.

Calves were in good demand, with prices firmer at \$3 to \$7 per head; in some cases \$4.25 to \$5 per cwt.

Milk Cows.—A few choice milkers wanted, but generally the inquiry is easy for dairy cows. Prices easy, at from \$25 to \$35 per head.

Hog Market.—Choice selections of best bacon hogs sold at \$6.25 per cwt. off car—that is, unfed or watered. To obtain top price, they must be 150 to 200 lbs., long, lean, suitable for the export bacon trade. There is likely to be an unlimited demand for this class. Light fat hogs sold at \$5.50, heavy fat demand for this class. Light fat hogs sold at \$5 to \$5.25. There were at \$5; corn and grass fed hogs ready for shipment. They do not delay if you have any hogs ready for shipment. They are now at their highest and a drop is expected any time. Look at the Buffalo market: best off cars \$4.20 per cwt.

Dressed Hogs.—Market firm; all-round dressed hogs in farmers' loads sell at \$7 to \$7.25 per cwt. Messrs. Davies & Co. shipped to the Old Country \$25,000 worth of bacon products through the Custom House last week; this went in cold storage through New York for Liverpool, England.

Cheese.—Business in the export cheese trade was quite

brisk this week. Prices quoted are 7½c. for delivery. There should be a better method of transshipment from the cars to the steamers at Montreal. We had occasion to visit the wharves during last week, and the way that cheese is handled would require cast-iron boxes to stand the rough handling we witnessed. Six men were wheeling boxes of cheese on trucks to the ship's side. They were then dumped into a net and hauled up by windlass into the ship's hold, and during our short observation we saw eight boxes smashed by being squeezed together. There seems to be no reason why they could not be raised with the trucks bodily into the hold at one handling. Dealers quote new cheese at 8c. and old at 9c. per lb. Eggs.—A little steeper; quality of stock an improvement on the last two weeks, and quite a few dealers are cold storing all their surplus choice stock; 10c. to 11½c. per dozen. Grain Market.—Only two loads of new Ontario wheat sold, at 71c. to 72c. per bushel. Hay.—A slight advance on all offerings this week—\$6 to \$7.50 per ton. Toronto, Aug. 9, 1898.

Chatty Stock Letter from Chicago.

Following are the current and comparative prices for the various grades of live stock:—

	Top prices			
	Extreme Prices	ago.	1897.	1898.
CATTLE.				
1500 lbs. up.....	\$4 75 to 5 50	\$5 40	\$5 25	\$4 50
1250 @ 1200.....	4 60 to 5 65	5 65	5 25	4 00
1000 @ 1200.....	4 20 to 5 50	5 55	5 05	4 45
1050 @ 1200.....	4 00 to 5 35	5 40	5 00	4 45
900 @ 1000.....	3 90 to 5 30	5 25	4 85	4 30
Fed Western.....	3 85 to 5 40	5 50	4 90	4 25
Stockers and feeders.....	3 00 to 4 70	4 70	4 50	3 60
Fat cows and heifers.....	3 50 to 5 00	5 40	4 40	4 15
HOGS.				
Mixed.....	3 60 to 4 05	4 12½	4 07	3 55
Heavy.....	3 50 to 4 10	4 17½	4 00	3 45
Light.....	3 55 to 4 02½	4 05	4 12	3 65
Pigs.....	2 75 to 3 90	3 95	4 12	3 65
SHEEP.				
Natives.....	2 75 to 4 75	5 00	4 25	3 25
Western.....	3 50 to 4 50	4 50	4 00	3 15
Texas.....	3 40 to 4 12	4 40	4 12	3 65
Lambs.....	4 00 to 6 65	6 60	5 40	5 85

In the opinion of some good authorities current receipts of cattle are about one-fourth less than they would have been if it hadn't been for the late heavy and general rains. It is expected that Western range cattle will soon be coming freely, to make good the shortage in native cattle, but they will have to come more freely than seems fair to expect to make good the shortage in range cattle.

Heifers are selling to good advantage, but really not as well as they should if the old traditional idea of the inferiority of heifer beef on the hoof could be dispelled. Fred Alberts, Clarence, Iowa, was in with 21 cattle of his own feeding, 835 lbs., which sold at \$5. There were 19 heifers and 5 steers in the lot. P. Wibaux, Montana, marketed 1,232-lb. range steers at \$4.75, and 1,087-lb. heifers at \$4.50.

There were 17,638 Texas cattle in quarantine last month and 2,481 calves. For the year to date 72,000 cattle, 4,120 calves, 3,022 cows. The grass fat cattle-going to market this summer from Texas and the Territory are the best in years, due to a mild winter and an abundance of early spring grass on the ranges. Prices too are in the main satisfactory, and in consequence ranchmen are happy. The canning grades of Texas cattle, which were so extremely high, are now much lower than a while ago, but the desirable fat cows and Texas beef steers are selling well. Texas cattlemen are busy buying improved breeding stock. They have wisely come to the conclusion that it does not pay to use time and money and opportunity in breeding and feeding scrubbs. An authority says: "The market for pure-bred animals and for farm machinery has never been so good in Texas as it will be during the coming season."

Of the 9,000 carloads of hogs received at Chicago last month Iowa contributed 4,060, against 4,377 a year ago, and 3,912 two years ago; Illinois, 2,601, against 2,133 a year ago and 1,604 two years ago; Missouri, 322, against 1,077 a year ago and 1,273 in July, 1896. While Illinois increased 397 cars, compared with two years ago, Missouri decreased 341, compared with July, 1896.

Everybody has been surprised at the smallness of receipts. Salesmen have largely advised country shippers to buy at lower prices lately, and they found it difficult to do, a large share of the hogs being in the hands of people not compelled to sacrifice them. As light as the run was recently, there were hogs here that came earlier than intended on account of cholera in the neighborhood.

Average weight of hogs at Sioux City last month, 266 lbs., the heaviest since last January. Average in June, 262 lbs., and in July, 1897, 270 lbs.

The 4,872,041 hogs received at the Chicago Stock Yards the first seven months of 1898 averaged 228 lbs. The 4,698,740 received the same period of 1897 averaged 238 lbs.

William Pilcher, Ida Grove, Iowa, had in 70 head of 244-lb. Texas-fed hogs, which sold at \$3.30. They were of choice quality, and attracted considerable attention. They were very solid, being on corn since last fall. They averaged 55 lbs. last fall when Mr. Pilcher bought them in Texas.

Some 78-lb. Idaho lambs right from the ranges sold at \$6.65, an unprecedented price for this class of stock at this time of the year. The talk about an abundance of range lambs seems as yet to be mainly talk, and there cannot be many good native lambs or they would be attracted by the present high prices.

A horseman, speaking of the Chicago horse market, says: "Smooth, blocky, fat export, 1,200 to 1,400 lb. chunks are still worth from \$70 to \$100; Eastern 1,100 to 1,200 lb., \$50 to \$75; good, blocky, 1,500 to 1,600 lb. express and draft, \$90 for fair to \$125 for good, and \$150 buys rather an extra one. The Government is not buying many now, either cavalry or artillery. No particular class in special demand, but good horses are always wanted, and prospects are receipts will be very light, which dealers hope will keep the market steady and in a healthy condition."

Buffalo Markets.

Hogs sold up to \$4.30 per cwt. alive for best sorts, 190 to 238 lbs., but \$4.10 to \$4.15 was the usual price of prime medium and heavies. Yerkers 140 to 180, \$4.10 to \$4.12, and pigs fair to good quality \$3.90 to \$4.00.

Cattle are advancing and sold to-day (Aug. 10th) for \$5.40 for steers averaging 1,670 lbs., and a really prime load would have brought \$5.50. Butchers' steers, 1,100 to 1,250 lbs., sold at \$5.10 to \$5.20 per cwt. Feeders, \$3.90 to \$4.25, and stockers, good quality, \$4.25 to \$4.40, and as high as \$4.50 was paid for 400 to 450 lb. steers of good quality and olders.

Milk Cows.—Fancy milkers and springers sold up to \$50 and down to \$38 to \$42 for medium choice. Calves are scarce, and fancy ones brought \$6.50, while \$5 was paid for common to fair stock.

Sheep and Lambs.—Prime ewe and wether grades, weighing 70 to 80 lbs. in the market sold readily at \$6.50, and one fancy load at \$6.75. The coarse, bulky, and half fat grades sold around \$6 to \$6.25, and down to \$5 and \$5.50 for culls and thin stuff. Sheep trade is not very active. Fat, coarse ewes sold for \$4.15 to \$4.35, and better grades of mixed ewes and wethers for \$4.60 to \$4.75. ERICK BROS. East Buffalo, Aug. 10, 1898.

Live Stock Exports.

The live stock reports for the two weeks ending Wednesday, Aug. 10th, as prepared by R. Hickerdike, of the Live Stock Exchange, Montreal, show that 6,756 cattle and 2,726 sheep have been exported to London, Liverpool, Bristol, Glasgow, Newcastle, and Manchester.



Memory Gems.

Patriotism is a blind and irrational impulse unless it is founded on a knowledge of the blessings we are called to secure and the privileges we propose to defend.—Robert Hall.

There's no dearth of kindness in this world of ours; In this our blindness We gather thorns for flowers.—Massey.

He that blows the coals in a quarrel he has nothing to do with has no right to complain if the sparks fly in his face.—Franklin.

Education begins at the mother's knee, and every word spoken within the hearing of little children tends toward the formation of their character.—H. Ballou.

Our body is a well-set clock, which keeps good time; but it'll be too much or indifferently tampered with, the alarm runs out before the hour.—Bishop Hall.

Time well employed is Satan's deadliest foe, for it leaves no opening for the lurking fiend.—Wilcox.

Experience, joined to common sense, To mortals is a providence.—Green.

Nature has many perfections to show that it is an image of the Deity; and it has defects to show that it is but an image.—Pascal.

The human heart is like heaven: the more angels, the more room.—Frederika Bremer.

There is no friend like the old friend, who has shared our morning days. No greeting like his welcome, no homage like his praise; Fame is the scentless sunflower, with gaudy crown of gold, But friendship is the breathing rose, with sweets in every fold.—O. W. Holmes.

Find Rest.

In all the long busy days the home woman with her numerous cares and duties certainly should find some few moments for absolute rest. She should avoid hurry as much as possible, and not try to crowd two hours' work in one. Many women feel that every minute they sit with idle hands is wasted, and of course this idea prevents them obtaining any benefit from enforced idleness. It makes no one richer in either health, strength or worldly goods to fill every waking minute with hard work. After a mother is through with her day's work she invariably picks up the never-empty mending basket and works until bedtime. Is there any wonder that her back is bent and her face is furrowed with wrinkles? The reaction which will come some day will cost more than was ever gained.

Life should not be made a treadmill, and to the housekeeper who works early and late at the expense of her health it is not much more. Help is hired for the outside farm work; improved machinery lightens labor on every hand except in the house. Why cannot the same be done there? The partners in the firm are equal though they be man and woman, and one should not flourish at the expense of the other. If consideration were always made a part of love, farmers' wives would be different looking women, as a rule, when youth had left them than they are. They are always the ones who remain at home that the others may take vacations; they are expected to do and know everything, and yet not complain.

To be sure, every mother wishes to see her children as well dressed as those of her neighbor, but if there is only one pair of hands to do everything the little ones must be dressed plainly if the mother is to keep her good health. A quantity of fancywork in a house looks very well, providing it has not been put there at the expense of strength. Constant work and grind will tell on a woman's nerves in time. Her good temper will take wings, if her health holds out otherwise, and then life will be made miserable for herself and all who must live with her. Begin in time to take rest, if it is only for ten or fifteen minutes every day, but let it be absolute rest—mental and physical. It is not lost time. A half hour a day spent thus will manifest its good effects at the end of the year. And when possible take a week or two, and that away from home, as a change of scene is often of inestimable benefit.

Wise Words.

Sir Thomas Browne never passed beautiful persons in the street without blessing God for the fair sight, and praying Him to enrich them with inward graces corresponding to the outward.

If he saw any deformed persons he asked for them beauty of soul instead of the comeliness of form which they lacked.

Can we not do something of this sort when we meet fair faces, or marred ones? How is it with the rows of childish faces which greet us in our school? Some so fair and innocent looking, like fresh blossoms in God's garden, and some bearing the sad stamp of hereditary depravity, or bodily and mental defect? Alas for that teacher who discerns not the soul within both, equally precious in its Father's sight.

How to Gain in Weight.

- 1. Aid digestion by avoiding what is difficult to digest.
2. Eat charcoal lozenges instead of taking other medicine.
3. Avoid tea and coffee and drink pure water.
4. Eat figs and apples between meals and eat whenever hungry.
5. Always rinse the mouth after eating.
6. Eat before going to bed and make it a rule so to do.
7. Walk and sing as much as possible.

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES.—

How often we say, "If only we were rich, how happy we should be!" Well, money is a very necessary article indeed; but it is not wealth that gives true happiness, for we can all point to some one of our acquaintances whom we know to be very happy although not blessed with a very full purse. Taste, culture, appreciation, and refinement will give a truer zest to life than anything else. The observant eye and the feeling heart are indispensable. With these, however humble may be our lot, we shall know the art of living. These qualities are marks of refinement, which is a charming social grace within reach of all. Refinement is a weaker twin sister of Self-Respect, though they are not always to be found together, for truly self-respecting people are refined according to their standard; but an outwardly-refined person is not always self-respecting. Refinement of habit is the polish of taste; refinement of heart is the luster of diamonds. This virtue is not necessarily the result of education or surroundings, as history will tell us if we study the doings of some of the royal courts in bygone days. We sometimes read there of coarseness as gross as could be found in any police court. The bon mot of the club and the on dit of the drawing-room are often so vulgar that the cloak of polished words and wit cannot disguise them, far less atone for them. So Refinement is within reach of us all, and it is our duty to aim at possessing this virtue. Step with me into the house of a friend, and let us find out what kind of person she is. It will not take us long to decide whether she is a lady or not. As we cross the doorstep there is an air of neatness and order, of grace and refinement, which gives us pleasure, though we can scarcely define or explain it. A flower in the window, a picture on the wall, a bird singing by the window-sill, books lying about, and everything tidy and comfortable, though perhaps common. We feel at once that the hostess is a woman of refinement and taste.

Now, let us pay another visit. Here we find profusion in everything: the rooms crowded with articles of furniture, chairs piled high with parcels; books, wraps, hats, etc., strewn about:—no order; but plenty of discomfort. This person has not learned the art of living—she is not refined. Now, this refinement in the home is partly the result of habit; but I think it comes originally from refinement of heart. It is as natural for some people to be cultured as it is for others to be coarse and rough. Lack of refinement is bad in a man; but absolutely revolting in a woman. Refined voice, refined manners, refined dress, are always pleasing; but a refined mind is more pleasing still, for it must be genuine, while the former may be but superficial. What is more grating than to hear a refined voice saying something coarse, or to see an attractive-looking girl enjoying low amusement?

This leads us to talk of a very common outrage on refinement often indulged in by girls. I refer to the use of slang. Some girls think that because some foolish, fashionably-dressed acquaintance uses slang words and expressions, it is all right for them to do so too. If they could only realize how ugly it sounds they would not use such words at all. If these girls who talk slang, and treat men in a "Hello, old chap!" style, only knew what these same men think of them we should hardly ever meet such young women. Let us all put down this vice (shall I call it?) of slang by declining the friendship of girls who use it, and by aiming to have our own behavior as beautiful as possible. By beautiful behavior I mean good manners, the requisites of which are politeness, courtesy, and kindness. The poorest may show good manners and refinement to each other as well as the richest. Politeness goes far and costs nothing. One may be polite and kind without a cent in one's purse. And how much good it does, not only to others but to oneself! It cheers others and helps them on through "the daily round," and it gives to the one who does the kindly and polite action a nobler feeling and a tender regard for her neighbor. It pleases others because it shows respect for them, and it gives tenfold more pleasure to oneself. Refinement in society is like the influence of light, silent yet coloring everything. It pushes its way quietly and surely like the tiny spring flowers, which silently force their way through the earth to the bright sunshine.

Success in life is greatly affected by one's manner. Many a girl loses a good situation through bluntness or abruptness of style. So we see that, to put it on the lowest scale, it pays to cultivate affability and good breeding. Even a kind look will give pleasure and happiness. A lady once told of "the delight, the tears of gratitude," which she saw in the eyes of a poor girl to whom in passing she "gave a kind look on going out of church on Sunday." How cheaply happiness can be given! "I remember doing it," she said, "full of sad feelings, passing on, and thinking no more about it; and it gave an hour's sunshine to a human life, and lightened the load of life to a human heart for a time." So, my dear nieces, let us all aim at being as refined as possible both in habit and in heart. Let us avoid imitating the girl who was once being

talked about by two young men. One said she was like brown sugar. The other asked why, "Oh!" said the first, "she is sweet, but unrefined." So let us not be brown-sugar girls and women, but truly gentle and refined—ladies in every sense of the term. Your loving old auntie—MINNIE MAY.

Only a Child.

Down the street came a happy crowd, A joyous, laughing throng, Their faces bright with pleasure, And in their hearts a song. On the door as they were passing Hung that solemn sign of woe, The white crape fluttering in the breeze, Gently waving to and fro.

"Hush, there's someone dead," said one, As she turned to those behind. "It's only a child," said another, And he meant it not unkind. Through an open window the mother heard, And the words so carelessly said, Like an arrow pierced her gentle heart As she gazed on the silent dead.

"Ah! little they know, my darling, Of my loneliness to-night, You were only a little innocent child, But you filled the home with light. Little they think of the sorrow, Of longing all in vain, For a glimpse of my 'gleam of sunlight' That never will come again."

No more the sound of the laughing voice Will answer a mother's call, No more will the pattering footsteps Echo along the hall. No more will mother bend at eve O'er the little cot so white, To kiss the brow of her sleeping babe And whisper a fond "Good-night."

No more will she hear the baby's voice Lapping the evening prayer, No more will she twine her fingers Through the ringlets of golden hair. No more will the small arms entwine her And fill her heart with joy, As her darling whispers, "I love 'ee best, I'll always be mother's boy."

Never again will she pillow The tired head on her breast, With the magic of a mother's song To soothe her babe to rest. "Only a child," but speak it not In a careless, thoughtless tone, There's an empty throne in a mother's heart, And a lonely, desolate home.—N. M. G.

Brought Up to Date.

These lines, of American origin, and written nearly twenty years ago, have started on a fresh round through their publication in the London Times, in answer to a correspondent's query:

Here lies a poor woman who always was tired, She lived in a house where help was not hired, Her last words on earth were: "Dear friends, I am going To where there's no cooking, no washing, nor sewing; But everything there is exact to my wishes, For where they don't eat there's no washing up dishes. I'll be where loud anthems will always be ringing, But having no voice I'll get quit of the singing, Don't mourn for me now—don't mourn for me never, I'm going to do nothing for ever and ever."

The cooking, washing, and sewing are obsolete now, or nearly so, but women are just as tired as ever, and the plaint will have to be revised some thing like this, perhaps:

Here lies a poor woman who always was busy; She lived under pressure that rendered her dizzy, She belonged to ten clubs, and would vote if she might; Showed at luncheon and tea, and would ride on a wheel. She served on a school board with courage and zeal. She read Tolstoy and Ibsen, knew microbes by name, Approved of Delcorte, was a "Daughter" and "Dame"; Her children went in for the top education, Her husband went seaward for nervous prostration. One day on her tablets she found an hour free, The shock was too great, and she died instantly.

Out of Arcadia.

The country boy was in love, and young, And he urged his cause with an eager tongue, But the maiden bade him work and wait; She wanted a man who was strong and great.

He loved his home and the country life, And he wanted a tender little wife; He wished to live in peace and ease, In the shade of his spreading old elm trees.

But the maiden bade him go and win A name she could prize and glory in. She said she would wait and wed him when He had made his place in the ranks of men.

Then the boy plunged into the city's roar, And he learned the market's sordid lore, And he learned that life is an awful fight, Where the wounded fall to the left and right.

But on their bodies he slowly rose, And he gained new strength from his vanquished foes; As he overcame them and beat them down He grew in wealth and in wide renown.

But his heart was cold. He forgot to feel; His chilling smile had the glow of steel. His brain grew keen and his face grew hard As he stood a victor, seamed and scarred.

Then his words were treasured throughout the State, And all men followed and called him great; But he smiled when he thought of the country boy, And he sneered at love as a childish toy.

New "Heading" for Home Department.

We regret to say that we have been unable to make any selection from among the pictures sent in for this competition. Many are extremely pretty, but unsuitable for the purpose.

This being the case, the prize, which was promised to the person who sent in the accepted design, will, of course, not be awarded.

THE QUIET HOUR.

The Plan of Christ.

"What heart can comprehend Thy name,
Or searching, find Thee out?
Who art within, a quickening flame,
A presence round about.

"Yet though I know Thee but in part,
I ask not Lord for more:
Enough for me to know Thou art,
To love Thee and adore."

The plan which Jesus proposes as the end and aim of His mission is not only completely unique and original, but so stupendous, so sublime, as plainly to transcend the bounds of merely human conception. Observe what the purpose avowed by Jesus Christ was: to establish a world-wide kingdom on this earth in the minds and hearts of mankind. Alexander undertook to subdue all earthly kingdoms in his own generation; but Christ undertook to bring under His sceptre not only all the peoples and kingdoms of one generation, but of all generations, present and to come.

"King of Kings" and "Lord of Lords" is the title He calmly assumes. He foresees His death, but this will be no check to His power or to the progress of His kingdom. This Carpenter of Nazareth, without any appearance of presumption, speaks and plans and acts as one superior to death (though He knows He is soon to die), as one to Whom the ages belong, and Whose work will go on from age to age—ay, unto the ages of the ages—and go on under His guidance, under His governing hand. He is a man—oh! never was such intense and sensitive humanity as His—and yet He seems independent of time and death and change: He is the King of the ages; eternity is his sphere of action. It is not merely that He founds a kingdom which He believes will endure, but that in spite of death He will still be the king of this kingdom, the living ruler of His church through all time.

Is it thus that men lay their plans? Did any other man ever dream of such an undertaking? If any living man should hold such language to-day would he be listened to? Would he not be laughed to scorn? Or would he not be pitied as a madman? Yet Christ was listened to. Men heard Him, followed Him, obeyed Him, gave up all for Him. More wonderful still, myriads who never saw Him or heard His voice have died for Him. This is what so impressed the Emperor Napoleon. He said in his conversations at St. Helena: "Alexander, Cæsar, Charlemagne, I myself, have founded great empires; but upon what did these creations of our genius depend? Upon force. Jesus alone founded His empire upon love, and to this very day millions would die for Him. . . . I think I understand something of human nature, and I tell you all these were men, and I am a man. None else is like Him: Jesus Christ is more than man. . . . Christ alone has succeeded in so raising the mind of man towards the unseen that it becomes insensible to the barriers of time and space. Across a chasm of eighteen hundred years Jesus makes a demand which is beyond all others difficult to satisfy. . . . He asks for the human heart; He will have it entirely to Himself; He demands it unconditionally; and forthwith the demand is granted. Wonderful! In defiance of time and space, the soul of man with all its powers and faculties becomes an annexation to the empire of Christ. . . . This phenomenon is unaccountable; it is altogether beyond the scope of man's creative powers. Time, the great destroyer, is powerless to extinguish this sacred flame. Time can neither exhaust its strength nor put a limit to its range. . . . This it is which proves to me quite convincingly the divinity of Jesus Christ."

Yes, the plan of Jesus Christ was so vast in its scope, so sublime in its aim—being nothing less than the moral and spiritual regeneration of the whole human race—that it is not only absolutely unparalleled, but plainly beyond the range of mere human conception. It soars into a region that the mind of man never before aspired to reach. Let us note also as one of the absolutely unique peculiarities of the plan avowed by Jesus, its relation to his own person. He was not only the founder of the kingdom, but its king, its head, the living center and heart of its being. Now try for a

moment to realize what it meant for a man (and a poor man, without place or power) to say, "I am the light of the world;" or to say, "Heaven and earth shall pass away, but My words shall not pass away;" or, "I, if I be lifted up, will draw all men unto Me;" or, "The Son of Man is come to give His life a ransom for many." This young Galilean peasant dares to put himself forward as the Saviour of the whole world, and makes His own sufferings and death a necessary part of the plan for the salvation of the world. He declares that His cross will become the magnet to draw all men unto Him. He affirms that His blood was to be shed for the remission of sins, and that no man could come to the eternal Father but by Him. He bids all the weary children of care and sorrow come unto Him and He would give them rest. He boldly assumes power to forgive sins, and even when nailed to the cross He claims power to open the gates of Paradise to the dying thief. When leaving the earth He encourages the disciples by the extraordinary promise of His perpetual presence: "Lo, I am with you always, even unto the end of the world." And as He puts Himself forward as the Saviour of the world, so also He advances the equally astounding claim to be the final judge of quick and dead. Yes, the judgment and the final destiny of every individual soul of all the generations of men, and of all races and peoples and tribes of mankind, is to be in the hands of this man Jesus of Nazareth. What then is He? Who is He? Whence came He? Is He a madman, or is He indeed the Christ, the Son of the living God? That is the inevitable dilemma. [TO BE CONTINUED.]



"SPOILS OF WAR."

"Unpossessed Possessions."

Is not that condition of passive acquiescence in their small present attainments, and of careless indifference to the great stretch of the unattained, the characteristic of the mass of professing Christians? They have got a foothold on a new continent, and their possession of it is like the world's knowledge of the map of Africa when we were children, which had a settlement dotted here and there along the coast, and all the broad regions of the interior undreamed of. The settlers huddle together upon the fringe of barren sand by the salt water, and never dream of pressing forward into the heart of the land. And so too many of us are content with what we have got—a little bit of God, when we might have Him all; a settlement on the fringe and edge of the land, when we might traverse the whole length of it; and behold! it is all ours.

"Quiet Hearts."

The highest energy of action is the result of the deepest calm of heart: just as the motion of this solid, and, as we feel it to be, immovable world, is far more rapid through the abysses of space, and on its own axis, than any of the motions of the things on its surface. So the quiet heart, "which moveth all together if it move at all," rests while it moves, and moves the more swiftly because of its unbroken repose.

A Family Affair.

"Willie," said papa, "you have wasted a charge of buckshot by carelessly handling that gun."
"Yes," answered the boy, as he pointed to the bodies on the floor, "but it's all in the family."

"Spoils of War."

There is something very pathetic in this picture. Chairs out of doors generally suggest a cool veranda or pleasant lawn—but here—what a difference! Possibly the victory was a just and glorious one; but the sight of all those "household gods" lying around in confusion goes to the heart. One wonders at the free and easy attitude of the elderly officer, seated in his enemy's chair, and at the jubilant air of the young soldier, who is showing some of the "spoils" to the other; but youth is often thoughtless, and the horror and sadness of war, perhaps, comes later—with many. Look at those quaint little teapots, perhaps not so long ago held by fair hands as they poured the refreshing tea into dainty cups. The ornamental clock, too, how many long years has it ticked the hours and minutes? Then the guitar—is the hand that swept its strings cold in death? And where is the little child who innocently played with that funny toy dog on wheels?

One soldier's face looks a little sad; he is looking at a picture, which, possibly, brings back some memory of home, of mother, wife, sweetheart—we know not.

Some of the sombre-looking group in the right background seem to be prisoners, and one can imagine what is in their hearts, although they are too proud to let their enemies see into them.

Alas! the "Spoils of War" mean untold misery to so many that we may well afford to give some sympathy to the vanquished, even though they be our enemies, and try to imagine the shattered homes and these grieving ones, who mourn their dead and their absent, even as we mourn our dear ones.

The Note of Thanks.

A WORD WITH GIRLS ABOUT THE ART OF WRITING IT.

Just a word, girls, about the gentle art of writing a graceful note of thanks. Don't be chary with such notes. Does somebody send you a pretty gift, it goes without saying that you write a cordial note of appreciation, but if some act of courtesy is done, or some little favor rendered, the written word of thanks is too often neglected.

It's an art; this art of writing a brief word of thanks, but it is one which every gentlewoman should cultivate, and it will, in the long run, be of far more service to her than even the mysteries of china painting or mandolin playing.

You go out of town, perhaps, and stay over night with a friend, and if you wish as pleasant a memory of your visit to linger with your hostess as with yourself you should write a line

repeating to her your spoken thanks. Oh, that's a "board and lodging letter," you say. Very true, but it's always appreciated by the woman whose hospitality you have accepted, and, presumably, enjoyed. Then, again, if a man sends you a book or a clipping from a newspaper, or a card for a reception, write that word of thanks, even if you have to get up in the middle of the night to do so. As a matter of policy, if nothing else, you will find the habit an expedient one, for people are much more apt to do a kindness for a person from whom the invariable word of thanks comes quickly and spontaneously, than for that unpleasant and matter-of-fact member of society who takes all such courtesies as her just due and does not trouble herself to send the slightest acknowledgment of small social courtesies.

Recipes.

CREAM SAUCE.

Melt one tablespoonful of butter, being careful not to burn it; add 1 tablespoonful flour; mix until smooth; then add $\frac{1}{2}$ pint of cream or milk; stir continually until it boils; add salt and pepper and use at once.

WASHING FLUID.

One box of alkali; five cents' worth of solid ammonia; five cents' worth of salts of tartar. Put the alkali into a large pot of cold soft water; as soon as the alkali is loosened take out the box. When the water is boiling add the ammonia and salts of tartar (taking great care that it does not boil up and scald you). Let it boil for a few minutes, then strain into an earthenware jar, and cork. Use a large teacupful of the fluid to a boilerful of clothes. This must not be used for colored clothes.



On the War-path.

Sing the fierce and famous fight
Of the bold Red Indian crew!
How they battled through the night,
And a thousand foemen slew.

The Children Who Saved Hamburg.

Hamburg was besieged. Wolff, the merchant,
returned slowly to his home one morning.
Along with the other merchants of the city,
he had been helping to defend the walls against the enemy;

A Year with Dolly.

We slipped thro' the gate this afternoon
When Bridget forgot to latch it;
A cricket fiddled a queer little tune,
And we hurried along to catch it.

I wish I'd minded mamma just right,
And thought of her smiles and kisses,
For if we were forced to spend the night
In any such place as this is,

Puzzles.

The following prizes are offered every quarter, beginning
with months of April, July and October: For answers to
puzzles during each quarter—1st prize, \$1.50; 2nd, \$1.00; 3rd,
75c. For original puzzles—1st, \$1.00; 2nd, 75c; 3rd, 50c.

Diagram.



Rung 1 is something which is second in im-
portance to girls.
Rung 2 is something which farmers could
not do without.

1-LADDER PUZZLE.

My FIRST is in bread but not in cake;
My SECOND is in flank but not in steak;
My THIRD is in lie but not in stand;

2-DROP LETTER.

A-t-l-g-a-t-e-l-f-e-g
-a-r-h-e-s-t-o-hs-uta-b-a-c
S-l-l-k-m-f-l-d-m-a-e-b-t-n
F-a-m-r-e-t-t-e-g-v.

4-WHAT WAS HIS AGE?

A lady asked a gentleman his age and he replied thus:
What you do in everything.

5-ANAGRAM.

I gain no rest.
Would that some higher power
Upon us would bestow
The gift of meekly bearing
Our sorrows here below.

6-ENIGMA.

My FIRST is in barn but not in house;
My SECOND is in rat but not in mouse;
My THIRD is in horn but not in blow;

7-CANADIAN RIVERS.

I. Neuygaa. II. Ooaastkashwa. III. Haasa. IV. Lhurcolho.
V. Lnoosa. VI. Lhaaw.

8-DIAMOND.

1. A consonant. 2. To bud. 3. A small-sized Spanish
horse. 4. Comprehensive. 5. To immerse. 6. To fasten. 7.
A consonant.

9-CHARADE.

In the warm and pleasant springtime,
When all is bright and fair;
The first you see as from tree to tree,
He travels through the air.

10-DOUBLE ACROSTIC.

Initials spell:
A king who illegally claimed a throne, and ruled it for
twenty years.

Finals spell:
His grandson, and successor, who in an invasion fell.

(1) A place where a fortress was raised by the Saxons.
(2) Name of the queen who was a captive in that fortress.
(3) Name of a soldier, historian, and a scholar.
(4) An ancient town.
(5) A word like Tyrol.
(6) A king who claimed his kingdom falsely.

11-TRANSPOSITIONS.

In other XXXX a woman poor,
Yet noble, gave her XXXX away.
Her dead XXXX a perfume rare
That lasts unto this very day.

12-RHOMBUS.

Across—1. Ascended. 2. New. 3. Satan. 4. Allude. 5. Kingly.
Down—1. A letter. 2. A preposition. 3. Turf. 4. Always. 5.
At no time. 6. Existence. 7. A limb of the body. 8. Roy-
al Academy. 9. A letter.

13-AMERICAN CITIES IN CHARADE.

1. (a) To perform completely.
(b) A vowel.
2. (a) Belonging to a ruler.
(b) The prevailing fashion.
3. (a) A division of an army.
(b) A current.
4. (a) A chariot of war.
(b) Expresses exhortation.
(c) Contact with a surface.

14-CHARADE.

(1) External appearance.
(2) Expresses an alternative of definitions.
(3) A pronoun.
(4) A prefix signifying in conjunction.
Whole an island in the Atlantic Ocean.

15-CROSS.

No. 1 is to perform or move.
" 2 is the past of to come together.
" 3 is a country of nice weather.
" 4 is the name of a Spanish ad-
miral who boldly steamed for
liberty.
" 5 is the commander of an army.
" 6 is the plural of is.
" 7 is the front of an army.

16-CHARADE.

My 1 is the name of a plant;
" 2 means part of the verb "to be";
" 3 is not me;
" 4 is fifth in the alphabet;
" WHOLE means not false.

Answers to July 15th Puzzles.

- 1. Car-path-1-ans.
2. Escape-scaps-cape-ape-pea.
3. (1) Chic-ago. (2) A-bun-dance.
4. Loveliness
Needs not the foreign aid of ornament,
But is, when unadorned, adorned the most.

11-POTOMAC, MAGDALENA, ESSEQUIBO,

Potomac, Magdalena, Essequibo,
Ottawa, Yukon, Nelson, Amazon,
Orinoco, Japura, Topajos, Ru-
pert, Yellowstone.

8-DIAMOND.

H. C. G.; Maud Weld; Una Shepherd; "The Khan";
"Eureka"; "John Keaney"; Esther Bartlett; Peter Hyde;
Jessie Hyde; Lizzie Conner; "Essex"; "Margaret"; H. C. G.; "The Khan";
"Dick"; John T. Goodall; "Eureka"; "Dennis"; Una Shepherd.

5-ANAGRAM.

H. C. G.; Maud Weld; Una Shepherd; "The Khan";
"Eureka"; "John Keaney"; Esther Bartlett; Peter Hyde;
Jessie Hyde; Lizzie Conner; "Essex"; "Margaret";

COUSINLY CHAT.

H. C. G.—Oh, no, I'll not throw the ink bottle at you, old
friend; not worth while, you know. To be perfectly candid, I
have heard more complaints from you in your two letters than
I have ever heard from all the others combined; in fact, they
never find fault. The puzzles you admire do not find equal
favor with others, so we must have some of all kinds.

"The Khan."—I think I neglected to answer your ques-
tion. No; it is not necessary to answer all the puzzles. The
person who answers the most will get the prize, supposing that
were only one-half of them.

Lizzie Conner.—Am glad to have you in our corner, as you
prove an excellent solver. I hope you will stay with us.
"Margaret."—"Pete" is a jewel for making you send in
those answers. I only hope he'll keep you at it. I got "it"
safely; will write you some day. Visitors are trumps now.

"Essex."—You lazy lad, such a short little letter. Whom
do you suppose came to see me recently? Your old corre-
spondent from Essequibo; he was asking for you. Let me
know the result of your exam., as I may not see the paper.

"McGinty."—I've been quite proud of a little neighbor of
mine who did great work at school, but I believe you beat
him. I was very glad to get your letter, it was quite interest-
ing. Success to you, little friend.

Peter and Jessie.—You must not talk of quitting. You
are unconsciously gaining much benefit from your work here,
and then we want you to stay for company's sake. Perhaps
you'll win a prize this time.

M. R. G.—You rate high as a solver, but to whom should
we send a prize in the event of your winning? We cannot
send to initials, and no post office given.

"Eureka."—Am pleased to count you as one of the cousins,
and hope you'll find our company agreeable.

Maud.—There is no fear of your trying my patience, as you
solve well. I trust you will continue to contribute.

Una.—Another new cousin whom we welcome warmly;
glad you like our corner. Yes, we gets credit for answers so
long as they reach me before they appear in the ADVOCATE.

We were sadly amused over the following
"take off" on that beautiful poem beginning:

"When I have time so many things I'll do
To make life happier and more fair
For those whose lives are crowded now with care;
I'll help to lift them from their low despair—
When I have time."

The parody runs thus:
"When I have time I'll think about my wife,
Who long has toiled from early morn till night;
I'll try to ease the burdens of her life,
And make her sorrows yield to love's delight—
When I have time!

When I have time I'll see how many steps
I can contrive to save her weary feet.
The latest labor-saving aids I'll get
To do the household duties quick and neat—
When I have time!

When I have time I'll get her books to read
And magazines and papers by the score;
I'll make her life, by every word and deed,
A joyous round of pleasure evermore—
When I have time!

I'll get my late lamented wife a stone
That shall commemorate her pure, unselfish life;
For now that I am left to grieve alone,
I think how much I might have helped my wife—
I've lots of time.

If there are any of the brethren the sentiment
of whose hearts is voiced in the above poem we
hope they will earnestly "think on these things."

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The Farmer's Advocate and Home Magazine

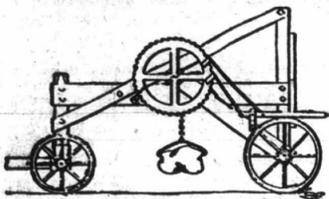
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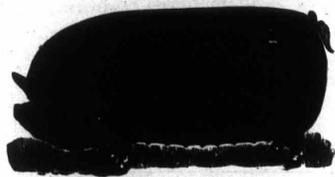
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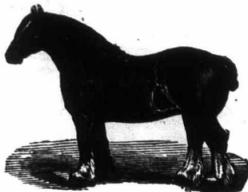
GOSSIP.

THE MAPLE HILL HOLSTEINS.

A recent inspection of the Maple Hill herd of Mr. G. W. Clemons, at St. George, Ontario, revealed the Holsteins there in excellent condition, a fine selection being fitted for the fair. At the head of the show herd will be the splendid six-year-old bull, Count Mink's Mercedes, with his strong constitution, ideal conformation, and fine quality of skin and hair. The two young imported bulls which are to be used in the herd, DeKol 2nd's Paul DeKol Duke, a bull of fine quality and dairy form, deeply bred in the blood of the record-breaking Pauline Paul, and Sir Pledge DeKol, son of King Pietertje DeKol, and Kalsora Pledge, with her four-year-old record of 65 lbs. of four per cent. milk, a lengthy, level youngster, with model head and neck, and fine dairy indications, should keep up the character of the herd for high-class milk and butter production, and we predict will stand well in the competition of the showing. Among the females in preparation is the five-year-old Cornelia Artis, a granddaughter of Cornelia Tenson, with a four-year-old record of 64 lbs. daily after an attack of milk fever, and listed first of all the Canadian cows in the great show at Toronto last year. Madge Merton at six years old, with her great record as a prizewinner since she stood third at the World's Fair, and first prize as a three-year-old, and sweepstakes and silver medal at Toronto in 1895, will make a fine appearance again this year. Mondamin's Daisy Barrington, with her mark of 62 lbs. at two years old, and an average of over 50 lbs. for six months as a two-year-old, and her show record of eleven first prizes and three sweepstakes at thirteen shows, is holding herself in good shape, and looks like living up to the latter and double discount the former. Inka Rose Pietertje DeKol is a strong representative of the breed, winner of first at Toronto as a two-year-old, and first at Ottawa in 1897; has a record of 64 lbs. daily at four years old, while her dam, also in the herd, has tested 75 lbs. in a day. Lady Akum is a cow of model dairy conformation, which is backed by a record of 67 lbs. milk per day and 24 lbs. butter in seven days. Kaatje DeBoer has given 63 lbs. daily, forty-two weeks after her fourteenth birthday, of milk testing 3.5 to 4 per cent., and has tested as high as 5 per cent. in a long term of lactation. Queen DeKol 2nd, in her three-year-old form, is a model dairy cow in conformation and quality, and has a record of 53 lbs. in a day on the fair grounds as a two-year-old, and won the Prince of Wales prize at the Provincial Dairy Show at Brantford in 1897 as best cow under thirty-six months in the milking test. Lady Netherland DeKol is a cow of five years, showing great capacity, as one would expect from the fact of her dam being a full sister to Netherland Hengerveld, who had an official record of 222 lbs. butter in seven days. A fine list of two-year-old and yearling heifers, and a bevy of beautiful heifer calves, principally the get of Colanthus Abbekirk 2nd, the young bull now at the head of Mr. E. D. Tilson's herd (Mr. Clemons retaining an interest in him), and out of such cows as those above named, make up a herd of unusual excellence, and which has been and is being bred on strong dairy lines, which cannot fail to keep up the standard.

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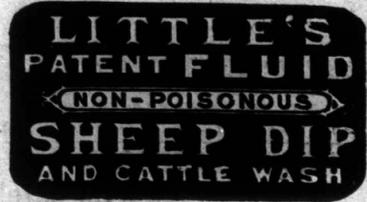
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Send for Catalogue and prices. "No business, no harm," is our motto. Clearmont Station, C. P. R.; Pickering Station, G. T. R. ONT.

Spring Grove Stock Farm

Shorthorn Cattle and Lincoln Sheep. The noted sire, Golden Robe = 20396 = and Nominee = 19028 =, at the head of the herd. Representatives of this herd won two silver medals and the herd prize at Industrial Fair, Toronto, 1897. Prize-winning Lincoln Sheep are also bred at Spring Grove. Stock of all ages and both sexes for sale. Apply T. E. ROBSON, Ilderton, Ont.

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Non-Poisonous Fluid Dip.

Still the favorite dip, as proved by the testimony of our Minister of Agriculture and other large stockmen.

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Kills ticks, maggots; cures scab, heals old sores, wounds, etc.; and greatly increases and improves growth of wool.

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Cleanses the skin from all insects, and makes the coat beautifully soft and glossy. PREVENTS the attack of warble fly.

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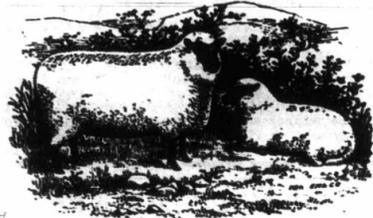
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Sold by all druggists. Send for pamphlet.

Robt. Wightman,

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Sole agent for the Dominion. -om



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Leicestershire Tick and Vermin Destroyer

It effectually destroys Ticks, Lice, Worms or Grub, to which sheep, horses and cattle are subject, and enables the animals to thrive. It will be found far superior to other preparations used for the similar purpose. The proprietors will guarantee perfect success when used according to directions, as will be found on each box. It prevents scurf and scab, and renders the wool bright and clear. It is put up in tin boxes, price 30 cents each. One box is sufficient for twenty ordinary sized sheep. It only requires to be tried to prove itself all that is claimed for it. Sold by druggists and grocers. Manufactured by G. C. BRIGGS & SON, 31 King St. West, Hamilton, Ont. -o

20 COTSWOLD RAM LAMBS 20

Three shearlings and one aged ram; also a few females, all ages.

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Breeder and importer of registered Oxford-Down Sheep. Selections from some of the best flocks in England. Stock for sale at reasonable prices. Inspection invited. 6-1-y-o



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Animals of all ages and both sexes for sale at all times. Price reasonable. -om

LEICESTERS

Four Shearling Rams; also this season's crop of Ram Lambs.

C. & E. WOOD, - FREEMAN P.O.

Burlington Station. -o

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SHROPSHIRE!

I can dispose of a few very choice, strong and well-covered Shearling Ewes, as well as about twenty Ram Lambs; all from imported stock.

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Shropshire Sheep

AND

Chester White Hogs

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BRITISH ADVERTISEMENTS.

HAMPSHIRE DOWN SHEEP

Splendid mutton, good wool, great weight. This highly valuable

ENGLISH BREED OF SHEEP

is unrivaled in its rapid and

WONDERFULLY EARLY MATURITY,

Possessing, too, a hardness of constitution adapted to all climates, whilst in the quality of

MUTTON AND LARGE PROPORTION OF LEAN MEAT, IT IS UNSURPASSED.

At the great Smithfield Club Show in London, December, 1897, Hampshire Downs again held their own, the class for wether lambs with 20 entries exceeding in numbers that of any other breed, whilst a pen of wethers stood reserve for the champion plate for the best short-wooled sheep in the show. A Hampshire Down also again took first prize in the dead carcass competition against all other short-wooled breeds. -o

Full information of

JAMES E. RAWLENCE, Secretary,

Hampshire Down Sheep Breeders' Association, Salisbury, England.

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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., etc. Unequaled as a medium for advertisements intended to reach the best class of breeders and farmers throughout Europe. Subscription, post-paid, for one year, \$2.50.

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breeder of Lincoln Long-wool Sheep, Flock No. 46. The flock was in the possession of the present owner's great-grandfather in 1785, and has descended direct from father to son without a single dispersion sale. J. E. Casswell made the highest average for 20 rams at the Annual Lincoln Ram Sale, 1895 and 1897. The 1896 rams were all sold for exportation. Ram and ewe hoggs and shearlings for sale, also Shire horses, Shorthorns, and Dark Dorking fowls. Telegrams: "Casswell, Folkingham, Eng." Station: Billingham, G. N. R. -o

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Secretary of the National Sheep Breeders' Association.

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WE ARE NOW BOOKING ORDERS FOR

SELECT YEARLING SHROPSHIRE RAMS

HEAVY WEIGHTS, STYLISH FORM, QUICK FEEDERS.

Also lambs of both sexes, sired by "Bonny Royal," bred by Mr. Mansell, England. Address

JOHN DRYDEN,

Brooklin, Ont. -o

FOR SALE!

A NUMBER OF CHOICE, WELL COVERED

SHROPSHIRE LAMBS

OF BOTH SEXES. PRICES RIGHT.

D. H. KETCHESON,

Hoard's Station, G.T.R. -o **MEMIE, ONTARIO.**

Shropshire Rams

bred direct from imported stock, extra well covered.

ROWAT BROS., -o HILLSDALE, ONT.

YORKSHIRES

Two young boars sired by Isaleight Duke, and one sired by Lord Grey, fit for service; also a number of sows and younger boars. **SPICER BROS.,**

Ycovil P.O., Ont.

GOSSIP.

In writing to advertisers, mention the "Farmer's Advocate."

Mr. H. Cargill, M. P., Cargill, Ont., has purchased, and is importing, along with other Shorthorns, the fine yearling heifer which won the female championship at the Royal Northern show at Aberdeen, in the hands of Mr. Longmore, of Rettie.

At Mr. Henry Dudding's sale of Shorthorns at Ruby Grove, Lincolnshire, England, last month, two bulls, Rosellan and Lord Rosemead, sold for 200 and 205 guineas respectively, and go to South America. The highest priced cow was Lambert's Bride, bought for Mr. Cochrane, of Canada, at 41 guineas.

JAS. DOUGLAS' SHORTHORNS.

Four miles from Caledonia, Ont., on the river road, brought us to the splendidly-kept 400-acre stock farm of Mr. Jas. Douglas, whose herd of upwards of 100 head of splendid Shorthorn cattle was looked over, two foundations of which was laid by the late Wm. Douglas, in 1855. In a report of the flocks and herds of Ontario, which we recently saw, this herd is mentioned as being one of five in existence at that date. All along, the best obtainable bulls only have been employed, and among them Mr. Douglas gave us the names of such animals as Lothair 300 (bred by Hon. Mr. H. Cochrane), Lord Languish 789 (bred by Hon. Ezra Cornell, Ithaca, N. Y.), Earl of Goodness 5th 593 (Bow Park), 19th Duke of Kirklevington 3078 (Bow Park), Baron Evenlode 16705 (Bow Park), Isabella's Heir 19550 (Bow Park), and the present sire Duncaun Stanley 1634 (W. & J. Russell), by Stanley 7919, and out of Isabella 14th 1394, now 3 years old. He is a splendidly-formed animal, possessing a great wealth of evenly-distributed substance, weighing in serviceable form about 2,400 lbs., which he carries well under command. Among the 40 odd matrons may be seen such cows as Britannia 34th 2312, by Earl of Goodness 20th, and out of Britannia 25th 2515, in her eighth year. Cayla, her regular producer, and is perhaps regarded as the most valuable cow in the herd. Eighth 4th, by 19th Duke of Kirklevington, and out of Eighth 2392, is a splendid type of a cow in her ninth year, and the usefulness which marks her places her as one possessing much value as a matron. Eighth 18th, by Isabella's Heir, and out of Eighth 11th 2164, is a splendid roan heifer, just past three, being thickly and evenly fleshed, carrying in her conformation that early-maturing quality so much sought after. She is due to calve to Duncaun Stanley in September. The yearling red heifer, Milliner 12th 2343, bearing in her veins some of the best of the Booth blood with three Bates crosses, is in her conformation carrying the evenness possessed by that worthy Isabella family, with their grand size. She is an all-round splendid heifer, full of promise. Considering the cows as a bunch, they are splendid lot, not only richly bred, but have been all along kept under the very best possible condition for the development of their progeny, a fact not to be looked upon lightly in the selection of foundation females or sires for pure-bred herds. At present Mr. Douglas has on hand 16 young bulls, ranging in age from 4 to 10 months, by Isabella's Heir. Among them our attention was especially attracted by the nine-month-dark roan son of Eighth 5th, Prince Patrick, a calf which is going to be a regular producer, with the combined quality of his sire and dam. Another grand representative of the Eighth family, and perhaps the choice of the bunch, is Royal Don, a great, growthy, thick fellow, whose presence in any herd could not bring other than improvement. We might go on and mention them individually, but feel assured of this fact, that whether by correspondence or a personal visit to the farm nothing but fair treatment will be dealt out to intending purchasers, and when in Brant, or adjoining counties, fanciers of Shorthorn cattle will be amply repaid by making this establishment a visit.

H. GEE & SON'S SHORTHORNS, SHROPSHIRE, AND POULTRY.

The 165-acre farm of Messrs. H. Gee & Son, near Fisherville, Haldimand Co., Ont., is being conducted upon mixed farming principles, and attention is being directed towards developing pure-bred stock. The foundation of a Shorthorn herd of cattle was laid a few years ago, when Fisherville Girl, by Cleveland 17063, and out of Fisherville Maid, was purchased. She is regarded by her owners as a valuable cow, possessing good evenness in her make-up. The stock bull (until very recently), Cleveland, by Gold Coin 13548, and out of Snowflake of Craggs 16871, was owned on the farm three years, his stock proving highly satisfactory. In Shropshire sheep the firm have exercised much care in selecting their foundation stock; the breeding ewes were of Campbell, Dryden, and Gibson breeding. Only the most suitable rams have been employed. At present on the farm is the aged ram, Montrose 2, No. 107671, by Celandine, and out of Moyers 25, 85060, a well-covered, good formed sheep of good color and fleece. Also a well-made shearer by Phin 477, 78803, and out of Moyers 17, by Dryden 37920, both of which are held for sale. Perhaps in no particular is more attention directed than to the pen of Plymouth Rocks and Indian Games. Mr. Gee, Jr., giving much of his time to their requirements. The Plymouth Rocks were obtained from settings purchased from the noted breeders, Geo. F. Leffel, Springfield, Ohio, and C. C. Spemacher, Freeport, Ill., all of which have come fully up to the high point expected, and we were shown some splendid young stock—smart and vigorous and beautifully barred. The Indian Game settings were obtained from Messrs. Bennett & Pardue, Charing Cross, who imported from some of the foremost English breeders. In poultry the firm have a few P. R. cockers for disposal this fall, as well as a good supply of Games.

GUELPH HORSE SHOW.

At a recent meeting of citizens of Guelph, Ont., it was decided to have a two-days' horse show on Sept. 20 and 21, with bicycle racing and evening concerts, \$1,000 to be offered in prizes. Mayor Hower was chosen president, and Ald. Nemstead, secretary-treasurer.

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BELEVILLE, ONTARIO.

The system of training is Normal, Specific, Thorough, comprising full instruction and practice in

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This College is OPEN THROUGHOUT THE YEAR. Students may enter at any time. Now is the Time.

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J. FRITH JEFFERS, M. A., PRINCIPALS.

WRITE FOR CALENDAR. -o

Harding's Sanitary Iron Hog Trough

IS INDESTRUCTIBLE, PORTABLE, SANITARY, CHEAP,

and answers all requirements of a desirable Hog Trough. One price only, 60 cents per foot.

VOKES HARDWARE CO., Limited,

111 Yonge St., Toronto.

OAK LODGE HERD OF YORKSHIRES

Highest quality of bacon hogs, profitable to the feeder, and correct type for the packer. Orders now being taken for young pigs suitable for exhibition purposes. Largest herd in Canada to select from. Write for prices.

J. E. BRETHOUR, BURFORD, BRANT CO.

YORKSHIRES AND COTSWOLDS!

Young Boars and Sows on hand now; also well-covered shearing and two-shear Rams, and half a dozen Ram Lambs.

R. HONEY,

WARKWORTH, ONT.

A CHOICE LOT OF

lengthy, large English Berkshires from six weeks to three months old. Pairs supplied not akin.

YORKSHIRE

Sows in pig of good breeding. Boars and sows, 3 months old, not akin, from prize-winning stock.

Write H. J. DAVIS, Box 290, Woodstock, Ont., breeder of Yorkshires, Berkshires, Shorthorns, and Shropshires. -om

ROSE HILL FARM.

JAMES DORRANCE, SEAFORTH, ONT.,

-BREEDER OF-

REGISTERED : BERKSHIRES

Of the most approved type. Choice young stock always for sale. Write at once and secure a bargain. 18-2-y-om

English Berkshires.

Herd headed by three first-prize boars. Large size, strong bone, fine quality, and a choice lot of breeding sows. Orders booked for spring pigs.

GEORGE GREEN, Fairview P.O., Ontario.

Stratford Station and Telegraph Office. -o

BERKSHIRES

One yearling boar, 1 boar pig, 3 months. A few young sows.

GEO. N. HARRIS, LYNDEN, ONT.

LARGE ENGLISH BERKSHIRES.

Young BOARS fit for service and SOWS ready to breed. Write if you want a bargain.

M. BENNETT & SON,

om St. Williams, Ont.

BERKSHIRES, BERKSHIRES, BERKSHIRES

My herd contains such blood as Baron Lee, Varna Duke, and other imported strains, with the celebrated sire, First Prize, at the head.

2-2-yo **WM. McALLISTER, VARNA, ONT.**

At a Bargain.

If taken in August I will dispose of four Berkshire sows, weighing from 150 lbs. to 175 lbs., at \$12 each; two boars, weighing about 175 lbs., at \$14 each. Others proportionately cheap. All stock registered.

W. R. BOWMAN,

-o Mt. Forest, Ont.

The London Mutual Fire Insurance Co'y of Canada

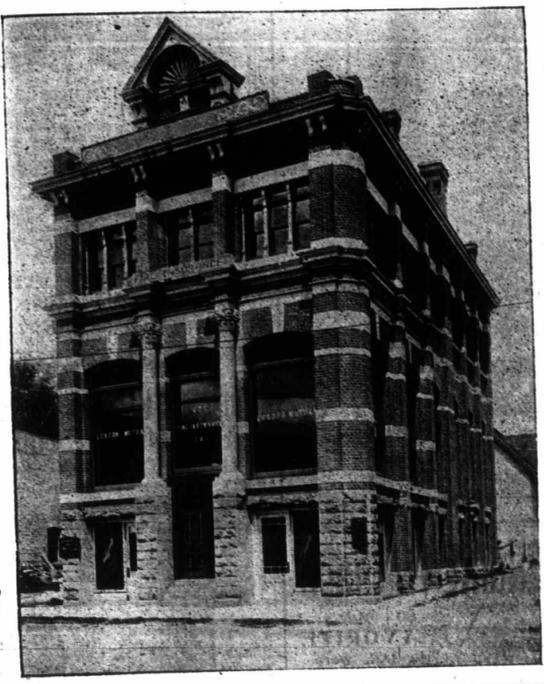
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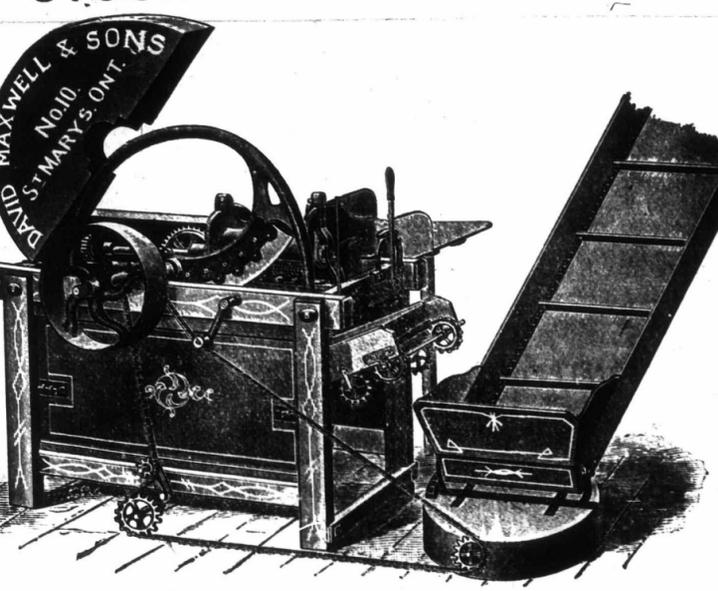
The successful pioneer of cheap farm insurance in Canada is now doing as it has for forty years past—the largest and best business. The Directors, themselves being for the most part farmers, inaugurated a system of practice in the government of the Company that the exigencies of the business warrant, introducing new ideas as required, which have heavily been adopted by other companies, but which lack the power the "London Mutual" possesses to apply the laws of average, and render therefore the cost of insurance merely speculative. With its long-extended experience, the "London Mutual"—which has distributed over three million of dollars in the payment of losses—looks with confidence in the future to the farmers of Ontario for an increased support.



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 2. Rates consistent with the risk.
 3. A surplus to pay all losses of \$400,000.00.

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FOR INSURANCE APPLY TO ANY OF THE AGENTS.
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NO. 10, POWER ENSILAGE CUTTER.
 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. MARY'S, ONTARIO, CANADA.
 (Please mention "Farmer's Advocate.")

Exhibition Jerseys for Sale

That cannot fail to win in any showing. Two 4-year-old cows, milking 40 lbs. a day each, superb udders; one 3-year-old, splendid udder, great beauty; one 2-year-old, tested 11 lbs. butter a week at 23 months old. These should not be separated, as they can enter in three classes and then show as a herd. Also a 3-year-old bull, a 2-year-old yearling and a calf. No one need apply except those who WANT THE BEST, and are willing to pay a fair price.
MRS. E. M. JONES, -om **BROCKVILLE, ONTARIO, CAN.**

GOSSIP.

The Canadian Packing Company, of London, Ont., is adding, among other improvements to their killing and packing plant, an ammonia refrigeration system, which will be in operation within a few weeks.

The English Oxford Down Flock Book (Vol. X.) is now in circulation, and bears the price 10s. and 6d. Credit is due the Secretary, R. Henry Kew, Broad Sanctuary Chambers, Westminster, S. W., for the neat and substantial form in which the book is issued. Vol. X. contains pedigrees of rams Nos. 2473 to 2740, and ewes Nos. 974 to 1951, and other necessary matter to a complete flock book.

Frederick L. Houghton, Brattleboro, Vt., secretary of the Holstein-Friesian Association of America, has sent us a copy of the last volume of Herd Book issued—that for 1897-'98. It is Vol. 15, and contains pedigrees of bulls Nos. 2887 to 2889, and cows Nos. 40517 to 43164. There is also contained within the same covers Vol. 8 of the Advanced Register, which gives pedigrees and necessary facts regarding bulls Nos. 109 to 111 inclusive, and cows Nos. 1221 to 1333 inclusive. The work is gotten up in the usual substantial and neat form and contains a great deal of information valuable to Holstein cattle breeders and other dairymen.

J. M. Gardhouse, Highfield, Ont., writes:—We have just finished harvest, and our hay and grain crops are good. Our root crop and pastures are suffering for the want of rain. Our new stallion, Active, is looking much better, although he has had 126 mares this season. Queen of Highfield, the sweepstakes mare, and her yearling stallion are looking well, and will, we expect, speak for themselves in Toronto ring. I have just received word from Mr. Heubach, N.-W. T., stating that the carload of young bulls I purchased for him have done well, and he intends visiting us again in Oct. Our Leicester are in fine shape, and will be at Toronto show. An American, in looking over our flock ever, said, "You have the best yearling ewe I have ever seen anywhere." We find a great enquiry for young bulls and Leicesters from Manitoba, and send a lot out at good but not fancy prices. Imp. Prime Minister, our stock bull, is doing good service for us. He is running out with the cows.

IMPORTED STOCK IN QUARANTINE.
 Following is a list of imported stock in quarantine at Quebec, having landed there July 26th. The sheep and pigs are required to remain fifteen days, and the cattle ninety days:
 Cotswolds—J. G. Suel, 15 head (5 rams, 10 ewes);
 George Harding & Son, 112 head (60 breeding ewes, 16 rams, 10 ram lambs, 15 ewe lambs and show sheep).
 Shropshires—J. E. Brothour, for various breeders, 3 rams, 4 ram lambs, 5 ewe lambs, 15 ewes.
 Southdowns—John Jackson, 1 shearing ram, 1 ram lamb, 2 ewe lambs; Oxford—J. H. Jull, 3 ewe lambs, 2 ram lambs; Smith Evans, 3 ewe lambs, 1 ram lamb.
 Geo. Allen, Allerton, Ill., 5 Oxford, 4 Southdowns, 27 Shropshires.
 Dorsets—R. H. Harding, ram; John A. McGillivray, ram; Harding & Miller, 3 ewes.
 Shropshires—R. Miller, 25 rams and 5 lambs, 13 ewes.
 Oxford—R. Miller, 4 rams, 5 ewes; Henry Arkell, 4 ram lambs; W. S. Hine, Dutton, 4 rams, 5 ewes.
 Shorthorn Cattle—Geo. Harding & Son and R. Miller, 15 head.
 Ayrshires—J. N. Greenshields, 14 head.
 Pigs—Large White Yorkshires—J. E. Brothour, Burford, 19 sows and one litter, 9 boars.
 Tamworths—J. E. Brothour, 6 sows and 1 litter, 5 boars.
 Berkshires—J. E. Brothour, 2 sows, 1 boar, for Geo. Green, Fairview, Ont.

D. H. KETCHESON'S JERSEYS AND SHROPSHIRE.
 During a short visit to the home of Mr. D. H. Ketcheson, near Meville, Ont., we were shown over his farm, and viewed the Jersey and Shropshire flock. We found the 3-year stock bull, Cheer's Victor 41912, by Cheer of St. Lambert 27020, and out of Signal's Lady 81379, in grand form; he has grown into a handsome animal; his stock are proving highly satisfactory and quick sellers. Also lately purchased is a young combination-bred bull, to which is intended to breed the young Cheer's Victor females, and as he is closely related to the world-famous Brown Bessie and Merry Maiden, his introduction should do much to maintain the standing of this herd. Among the matrons we saw the grandly formed Woodfower 27119, by Thaley's St. Lambert 23715, and out of Woodfower 36334. She is in her prime, and due in December to Cheer's Victor. All her stock has been ready sellers, commanding satisfactory prices. Ceres K. 112420, by Thaley's St. Lambert 23715, and out of Lutra St. Heller 35340, is due in March, and, for a four-year-old, she promises well.
 Among the Shropshires, Mr. Ketcheson offers a fine bunch of well-covered ram lambs, perhaps a trifle the best bunch he has ever raised, of good size, and very uniform in color and covering.

ROWAT BROS.' SHROPSHIRE.
 During a short stop at Messrs. Rowat Bros.' farm, near Hillsdale, Ont., we found the Shropshire stock in their usual good form, and this year the firm will have upwards of a score of very choice buck lambs for disposal, the get of a well-matured, well-covered two-shear ram purchased from Mr. Robt. Miller, Brougham, Ont., through Charles Lawrence, Collingwood. The ewes were either directly imported or bred from imported stock, and are a choice bunch, well up in quality, and particularly well covered. A strong, well-made shearing is also offered for sale, which is not large but very choice in quality.

TROUT CREEK SHORTHORNS.
 Mr. W. D. Platt, Hamilton, Ont., makes a change in his advertisement in this issue, in which he offers for sale ten young bulls, and fifteen young cows and heifers in calf to the grand imported bull, Golden Fame, placed at the head of the herd last spring at a cost of \$700.00. Mr. Platt has an excellent herd of Shorthorns, the cattle being of good size, thickly fleshed, and well bred, and he is not looking for fancy prices, but aims to give good value for the money in every case. A catalogue of the animals in the herd will be sent to applicants.

Horse Owners! Use

GOMBAULT'S
Caustic
Balsam
 A Safe Speedy and Positive Cure
 The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or lameness. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., TORONTO, CAN.

ROADS TO WEALTH
 are shortened by the right kind of education. A Technical Education pays. The shortest route to mastery of technical subjects is correspondence instruction. Success guaranteed. Best and simplest text books free.
CIVIL ENGINEERING
 Bridge, Steam, or Electrical Engineering; Mathematics; Chemistry; Mining; Architectural or Mechanical Drawing; Surveying; Plumbing; Architecture; Metal Pattern Drafting; Prospecting; Book-keeping; Short-hand; English Branches.
TAUGHT BY MAIL
 Circular free. State subject you wish to study. Estab. 1891. 45,000 students and graduates. The International Correspondence Schools, Box 909-Granston, Pa. **\$2.00 a Month**

MICA AXLE GREASE
 It's easy to haul a big load up a big hill if you grease the wagon wheels with **MICA Axle Grease**. Get a box and learn why it's the best grease ever put on an axle. Sold everywhere.

ENGLISH BERKSHIRES AND CHESTER WHITES.
 Young boars fit for service; sows ready to breed. Also young stock of either sex ready to ship.
CAMPBELL & MARTINSON,
 Near Lewisville, G.T.R. -o Northwood, Ont.

MERTON LODGE
 Herd of Chesters and Tamworths are in full bloom, and are offering choice stock of both breeds and sexes. Also booking orders for coming spring stock.
H. GEORGE & SON
 CRAMPTON P. O., ONT.

E.D. GEORGE
 PUTNAM, ONT.
 Importer and Breeder of **Ohio Improved Chester White Sows**
 The largest and oldest established registered herd in Canada. I make this breed a specialty, and furnish a good pig at a fair price. Write for prices. 14-27-0

THE AVON HERD of Chesters
 Are in fine form. Orders are now being booked for April litters from notable strains.
Henry Herron,
 o Avon P. O., Ont.

CHESTER WHITES
 Write me for particulars. The imported sires, John A. 751 and Nonsuch 910, at head of herd.
JOS. CAIENS,
 LAMBTON CO. -o CAMLACHIE P. O.
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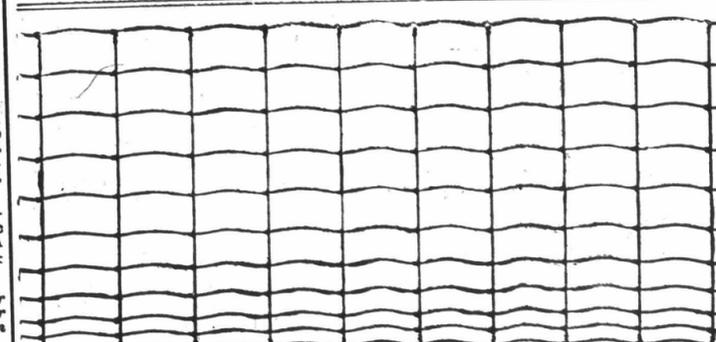


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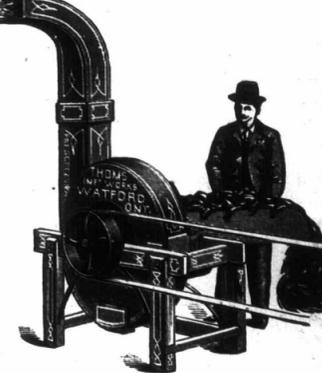
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