

**PAGES
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FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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No. 465.

EDITORIAL.

"Scotland Yet," in another column, lays out some useful work for our agricultural chemists and experimenters.

The intelligent rearing and feeding of more and better live stock is the key that opens the door to a more prosperous era in Canadian agriculture.

Prepare for the Ontario Fat Stock Show at Brantford, Ont., Nov. 30th and Dec. 1st and 2nd — the grand round-up for the Canadian show season of 1898.

They had a banner show of Hereford cattle at Omaha. The great interest ranchmen have lately taken in improving their herds has had a good deal to do with stimulating the fine stock trade.

As indicating the improved condition of the Canadian fruit trade this season, our correspondent, "Agricola," elsewhere reports that the first shipment of Nova Scotia apples to London, Eng., netted the shippers from \$4.00 to \$4.50 per barrel. Our Annapolis Valley friends are to be congratulated.

The poultry and egg industry of Canada is entering upon an era of rapid and large development. In order to aid in directing it along safe lines, we have devoted a large share of our space to poultry rearing, and in this issue Mr. A. G. Gilbert continues his instructive articles, dealing with special methods of fattening, particularly the "food cramming" process in vogue in England, France and Germany, and which in a small way has been practiced by a few persons in Canada. It is now to be made the subject of official experiment and demonstration. Mr. Gilbert very properly points out, however, that if this export trade is to grow successfully, our farm poultry must be better bred and better reared. It is folly to overlook this fact.

Mr. J. A. Craig, a Canadian, now of Shanghai, China, was recently on a visit to Ottawa and the promote trade between this country and the Celestial empire. Britain now controls more than half of the trade. Russians and French, and United States liners from San Francisco and other Pacific ports, are working up a valuable trade on their own account, which bids fair to grow enormously. Canada has boats, among the finest in the world, plying between the Pacific coast and Hong Kong, and if Canadian shippers seize the opportunity they may realize great profit. China to-day wants flour, lumber, butter, canned goods, and bacon, and she wants the very best we can supply. While in Canada Mr. Craig will arrange for trial shipments of flour, lumber, and other articles. British Columbia dairymen are already shipping butter in sealed tins to China and Japan.

The Tuberculin Test.

The letter from Scotland published in the FARMER'S ADVOCATE for October 1st indicates that the plan of dealing with the tuberculin test for cattle adopted by the Dominion Department of Agriculture commends itself to the good judgment of leading minds in the Old Country. The Canadian Government undertakes, under certain conditions, to test cattle for tuberculosis free of charge. Should a person surmise that any of his animals are affected he makes application upon the prescribed form, undertaking to accept responsibility for the results of the test, as set forth. A Government Inspector is then sent to conduct the test. During the past season a very considerable number of herds have been so tested, and but a small percentage (from five to seven per cent.) of animals showed the reaction indicating tubercular trouble, which, by the way, is a very gratifying showing compared with the lamentable condition of affairs found existing among the dairy and other cattle in

the Old Country, where the percentage is estimated to vary from 25 to 40. We find now that there is a general disposition to pay greater attention to improved sanitation, better ventilation, etc. The Government does not order the slaughter of diseased animals nor compensate if the owner slaughters on his own motion, but any animals found ailing must be isolated and the quarters where they are kept will be quarantined. Should the owner desire to kill and dispose of the carcasses for food he consults the local authorities. The premises are released from quarantine upon the certificate of the Inspector that they have been cleaned and disinfected as required.

There are two very sufficient reasons why amateur tuberculin testing by private parties should not be encouraged. In the first place, it is an operation the results of which may be worse than valueless if not properly performed by a person of professional skill and experience. There is reason to believe that not a few veterinarians, even, unfortunately find themselves ill prepared for work of this description. Indiscriminate testing also opens the way, as has been seen in the Old Country, for questionable transactions in the disposal of animals badly diseased, for food and for other purposes. In the next place, a certificate from a Government Inspector (in which case a fee is charged) that the animal has not responded to the test, with other data indicating freedom from disease, is the condition under which breeding stock is permitted to enter the United States without detention for test at the boundary, as provided under the new international arrangement abolishing the old and vexatious 90-days quarantine which long restricted the movements to and fro of live stock between the two countries.

A Study in Manuring.

Our Scottish correspondent in this issue turns his attention to the subject of concentrated or special manures, sometimes called artificial fertilizers, great quantities of which are used in Great Britain, and the use of which is increasing in the older tilled areas on this continent, and where the system of husbandry becomes more specialized. However thoroughly acquainted "Scotland Yet" is with agriculture in the Old Land, we must disillusionize his mind of the notion that the "new world" farmer has no manure bills to foot, being still happily at work on the virgin soil, taking no thought for the morrow or for manure. Even the Northwestern farmer on the rich prairie land that was but yesterday a "breaking" is beginning to husband carefully his once-despised barnyard manure. The withdrawal of plant constituents from the soil is as certain in its results as the law of gravitation, or the checking out of a bank account, and the extent and nature of the elements removed will depend on the sort of cropping. According to Liebig's law of minimum, where there is below a certain proportion of any one of the more important constituents of plant food it is impossible for the land to produce a healthy crop. All must be present in ample quantity, but they avail little in the absence of one another. Hence we find Old Country farmers supplementing the ordinary manure of the farm with "artificial" according to the character of his soil and the crop to be raised, in order to get the most satisfactory results. Slime fungus on turnips, the failure of permanent and hill pastures, sour and innutritious herbage, are attributed to the want of a manure containing phosphate and lime, and so on. The late Dr. Voelcker found that the soil of a very old hop garden in Kent, which produced ample bine but very little hops, although richly manured annually, had had the lime extracted down to an almost untraceable limit. The application of lime brought back weight and quality to the hops. A deficiency of lime tends to produce turnip and clover sickness. For nearly twenty years on the soil at Woburn

sulphate of ammonia alone, or mixed with other manures, but with little or no lime, did remarkably well both on the wheat and barley. Two or three years ago, however, the land was seen to be giving out for some reason or another, and last year it got so bad that the barley absolutely refused to grow on some of the sections. Dr. Voelcker conjectured that the missing link was lime; consequently an application of two tons per acre was made, and now every sign of weakness has departed. On the portion left unplanted there was only an occasional plant, but on other places the crop looked like yielding as much as it did fifteen or twenty years ago.

Seeing unsatisfactory results in given crops, or from certain fields, the advice of "Scotland Yet" is to carefully test dressings of manures commended and so take the evidence of the land itself. By all means, let the farmer also increase the quantity and improve the quality of his barnyard manures by the better feeding of more stock, and discarding the wretched and wasteful methods of handling manure yet in vogue on too many farms.

Treatment of Show Animals After the Exhibitions.

The treatment to be pursued in regard to animals that have been highly fitted for competition at the fall shows is pretty well known to all breeders who have been in the business for any length of time. As the ranks of exhibitors, however, are constantly being reinforced by younger men, who may not be so well informed, and by wealthy citizens who take up farming as a recreation and whose knowledge of the mysteries of breeding and showing is less, perhaps, than the length of their purse-strings, a few hints as to the most satisfactory way to treat show animals after their duties at the fairs are over will not be amiss.

When the show stock arrive home, they are, as a rule, pretty well tired, both of their journeyings and of the strong rations which they have been receiving so steadily during their tour, and are just as anxious for a change of feed as are their owners to give it to them and thus save their pockets from further expense. It is not wise, however, to make the change too rapidly, as a sudden transition from grain and dry feed to rich pastures would derange the digestion, cause scouring, and result in the animals getting a bad setback. As regards horses, cattle, and sheep, the better plan, and the one most generally adopted by breeders, is to lessen the grain feed gradually and turn the animals out on a short pasture for a few days during fine weather till they become seasoned; afterwards they can be given more succulent grasses. Whether they be deprived of the grain ration altogether then is a matter that depends on the condition of the individual animal.

Rams that are to be used on the flock should on their return home be deprived of all heating food, but should, nevertheless, be kept up in good heart so that they may be fit for their work. When the mating time comes salts may be given should a show ram prove sluggish in his work. This and plenty of exercise will remedy any trouble in this direction unless the animal is absolutely worthless naturally or has become so in consequence of too good treatment.

In the case of swine there does not appear to be quite so much caution required in lowering their diet, although here too a gradual change is best. Most of the pigs shown at our exhibitions are too fat, judging from the pork-packer's point of view, and have to lose a considerable amount of unnecessary flesh before they get down to ordinary breeding condition, and, therefore, many breeders shut off show rations at once when the exhibitions close. Some take their show pigs and turn them out on pasture, with no grain, but where they have access to plenty of water, and the results have been quite satisfactory. But here too the breeder

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will have to use his discrimination, because individuals differ so, and one pig would thrive under treatment which another could not stand without serious loss.

It must be understood that the above remarks apply only to animals which are to be retained for breeding purposes. Those which are intended for the butcher or for fat stock shows must be treated very differently. In their case there must be no change of feed or lowering of rations, but they must be pushed on steadily on the feed they are accustomed to, otherwise they will not be in the best form to be shown or sold when the time comes.

A Trip to the Eastern Provinces.

(EDITORIAL CORRESPONDENCE.)

To one who makes the trip to the Maritime Provinces for the first time there are many interesting features to note. Leaving Montreal at night in a sleeper, the traveler passes through some of the best farming districts of the Province of Quebec without seeing them, but is compensated on the return trip by taking the daytime for it. This section of the C. P. R. runs through a considerable portion of the State of Maine, much of which is mountainous, broken, and largely unfit for farming, as are also large areas of the land in New Brunswick through which the road passes. But in the last few hours, as we near the city of St. John, many beautiful valleys with well-kept farms and neat homesteads come into view. Agriculture is not yet a leading commercial pursuit in this Province, fishing and lumbering having been the main dependence of the majority of the people, but increasing attention is being given to farming, especially to dairying, cheese factories and creameries being numerous and well patronized in many sections. The Provincial Government has taken an active interest in promoting the farming industries by liberal grants for the purchase and dissemination of pure-bred live stock, the influence of which is seen in the character of the cattle on many farms and in the stock shown at the exhibitions, which is exceedingly creditable, while the samples of fruit, vegetables and roots displayed at the fairs would rank well with the best in any province. The lumber trade is still the great industry. Sawmills abound along the rivers, the larger ones being within reach of river boats, which in their turn transfer the sawn lumber to ocean-going vessels.

St. John, the principal city, with a population of about 40,000, is finely situated for trade and manufacture. The harbor is well sheltered and is open the year round, the strong current carrying all the ice of the river out to sea. The city, which has risen beautifully from the ashes of the great fire of 1877, which destroyed all the business portion and property to the value of \$25,000,000, is compactly built on a rounded tongue of slate rock between the harbor and a little offshoot

called Courtenay Bay that runs bare at low water. Hills and high ground surround the city on the north and west. The houses are mainly of brick, but there are numerous fine stone residences and warehouses. Many of the churches are of the best style of architecture, while the Government buildings, the post office, customs house, and hospitals, are handsome and substantial structures. The city presents a very fine appearance on being approached from the water, but the view opposite the reversible falls from the hills of Carleton, a suburban town, is not surpassed even by the view from Montreal Mountain or the Citadel of Quebec. The extensive and varied natural park, including circuitous and shady walks and drives, lakes and lagoons, and the long drive by the beach of the beautiful Kennebecasis Bay, with its charming scenery, makes St. John a most interesting city to the visitor. A sail of forty miles up the majestic St. John river on a bright September day, with its charming accompaniment of scenery in the well-wooded hills on either side, pretty islands fringed to the water's edge with dense shrubbery, and the tasty summer cottages of city people along the shore, with here and there a well-kept farm coming into view, was an experience not to be soon forgotten.

Among the chief towns is Woodstock, sixty-five miles above Fredericton on the St. John river, in a fertile region of the Silurian belt. In addition to its lumber trade it has a manufactory of extract of tan bark, and there are iron ores in the vicinity. Sussex is a thriving town in the midst of a fine agricultural and dairying district. Sackville, at the head of Cumberland Bay, is in a fine farming and stock-raising region, its extensive dyked marshes, the richest land in the Province, producing large quantities of hay and grain. Moncton, a fast rising town on the Petitcodiac, is the headquarters of the Intercolonial Railway and has the railway workshops. It contains also a large sugar refinery.

Nova Scotia, as an integral part of ancient "Acadie," presents many interesting features. While as a mineral-producing province it stands out prominently, being surpassed only by British Columbia in the production of gold, and holding first place in that of coal, iron, and gypsum; it is also fast making a name as an agricultural province. Its numerous fertile valleys produce immense quantities of hay and pasture, and though principally used as meadows, are capable of growing grand crops of grain and roots as well. These were originally marshes, which have been reclaimed and improved by dyking the river banks to shut out the tides, which would otherwise overflow them, but "at stated seasons the flood-gates are opened and the sea is welcomed to wander at will o'er the meadows," as graphically described by Longfellow in his "Evangeline," which had for its scene a historic spot in this same "Acadie." The farmer who is fortunate enough to own a fair share of this marsh land feels that he is on the ground floor, as its value runs from \$150 to \$300 per acre.

The uplands, through which the highways run and where the homesteads stand, though not exceptionally rich, are generally good farming lands, and when properly farmed give fair returns, a popular means of fertilizing them being the application of what is called marsh mud, composed of a deposit of the sediment of the tide when it backs up into the rivers, which is hauled in carts and spread on the land. Under the prevailing system of survey, the farms being narrow and running back on either side of the highways, neighbors are near together, and the neat frame houses and barns, invariably painted or white-washed, give a cheery aspect to the country, having much the appearance of a succession of villages.

A couple of days were profitably spent at the Maritime Experimental Farm at Nappan, now under the efficient superintendence of Mr. R. Robertson, formerly a successful farmer at Compton, Quebec. The farm is pleasantly situated six miles from the beautiful town of Amherst, the original home of the talented Tupper, Sir Charles and his son Sir Hibbert, and near which are located some of the finest herds of pure-bred cattle in the provinces, including the champion Herefords of W. W. Black, C. W. Holmes' Shorthorns, and the "Bonnie View" Jerseys of E. B. Elderkin & Sons, headed by Golden Lad, the sweepstakes bull at the Provincial Show.

The selection of the site of the Experimental Farm was evidently not a fortunate one, the soil being naturally poorer than the average of the district, and the shape of the fields made irregular by the passing of the railway and the highways through it, but by a thorough system of draining, plowing in of green crops, and a liberal application of marsh mud and the barnyard manure made by feeding cattle under the direction of the expert superintendent, Col. Blair, during the nine years of his incumbency, a considerable portion of the farm has been brought into a condition that produces excellent crops of clover, roots and corn, a field of clover having this year yielded over three tons per acre in the first cutting and producing a second crop estimated equal to one ton per acre, which has been plowed down to further enrich the land. Some of the trial plots of ensilage corn have yielded at the rate of twenty tons per acre, the field crop was estimated at fifteen tons, and of potatoes as high as 420 bushels per acre are recorded this year. Although the season has been unfavorable to grain crops on account of an excess of rain, causing rust, which has reduced the weight of yield, yet the

report, on the whole, will show favorable results for Mr. Robertson's first year, while his plans for the future are practical and comprehensive, and we hope to see good work done at this station.

A new enterprise in this region, from which good results are anticipated, is the organization of the Maritime Stock Improvement Company, with a capital of \$50,000 and with Col. Blair as Managing Director, the object being to raise the standard of farm stock in the Provinces and to carry on the business of importing, breeding, transporting and marketing all classes of pure-bred and high-grade stock. An excellent stock farm near the station at Nappan has been purchased, and additional buildings are being erected for carrying out the plans of the Company, a nucleus of stock having already been purchased. Col. Blair, the plucky projector of this scheme, is regarded as the apostle of improved stock in the Province, having devoted the best energies of an active life to this work, and we wish him all success in his latest endeavor to benefit the farmer by means of this movement.

The Provincial School of Agriculture is located at Truro, a pretty town in Colchester County. This school was established in 1885 in connection with the Provincial Normal School, which is also permanently established at Truro, and is under the direction of Prof. Hermon W. Smith, B. S., a graduate of Cornell University. It has occupied a separate building on "Bible Hill" on the Provincial Farm in the outskirts of the town—a fine situation, commanding a charming view of rural scenery, including the rich marsh meadows and upland farms of the Onslow district in the distance. The school building was destroyed by fire last spring, and has not yet been rebuilt, owing to some sectional contentions as to its location and the absence of a well-defined policy for the carrying out of the objects of this and its sister institution, the School of Horticulture, which is located at Wolfville, a division of forces which is far from desirable, and which should be ended or amended by a combination of the schools at some point. Indeed, all the agricultural and horticultural institutions of the Province are evidently in an unsatisfactory condition, and a vigorous policy of extension and efficiency is urgently needed. What is wanted is a school after the model of the Guelph College, and to this end a leading spirit is longed for—one familiar with the requirements of the situation and qualified for organizing and evolving a policy that will meet the need. Given this and the probability is that the Government will not withhold the necessary financial aid. One of the attractions to a stockman at Truro is "Ballevee," the fine stock farm of Mr. C. A. Archibald, and his noted herds of Shorthorns and Ayrshires, which stood so high on the honor roll at the Provincial Fair. A very large and successful milk-condensing factory is also in operation here, which is well patronized by the farmers.

The City of Halifax—the "Gibraltar of America"—with an estimated population of 45,000 (the only city in the Province), situated some seven miles from the mouth of the harbor upon a tongue of land between the harbor proper and the "north-west arm," is noted for the strength and efficiency of its fortifications and as the only place in the Dominion where the Imperial Government maintains a garrison. It is also the summer station of the North American squadron. The highest point of the ridge on which the city is built and near the center of it is occupied by the citadel, probably the strongest fortification on the Continent, and commanding the whole harbor. The extremity of the tongue of land is a public park, with fine picturesque drives, and the Horticultural Gardens are an attractive feature of the city, being among the most perfect in America. In Halifax the Provincial Exhibition is held. The buildings and grounds for this purpose are admirably arranged, and the display of stock and products were a credit to the Province, but three days of steady rain sadly militated against its financial success this year.

The live stock features of the show were briefly reviewed in our last issue. The agricultural building was well filled with a grand display of first-class vegetables and roots, the potatoes being especially fine. The Provincial Farm made a very tasty display of its products under the superintendence of Mr. F. L. Fuller, the Farm Manager, who also conducted a working dairy, with the assistance of two of the students of the School of Agriculture, who made butter twice daily in full view of an interested crowd of visitors. The Maritime Experimental Farm occupied the center of the hall with a magnificent display of its productions, designed and arranged with exquisite taste by Mr. W. S. Blair, Horticulturist of the Farm. The show of fruit, especially of apples, was a genuine surprise to a Western man. High-class exhibits of many of the best varieties of winter apples suitable for the export trade were here in abundance, and Mr. Bigelow, the energetic President of the N. S. Fruit Growers' Association, glories in the fact that \$1,000,000 in solid cash represents the income to the farmers of the Province for their annual apple crop exported, in addition to what is consumed by the home market. In this department the President was ably seconded by Mr. S. C. Parker, the enthusiastic Secretary, and by Prof. F. C. Sears, the Director of the Provincial School of Horticulture, and Mrs. Johnson, all of whom take a deep interest in the work of the Association.

We regret that our engagements precluded the possibility of visiting the famous Annapolis Valley, acknowledged by all to be, in respect to fruit grow-

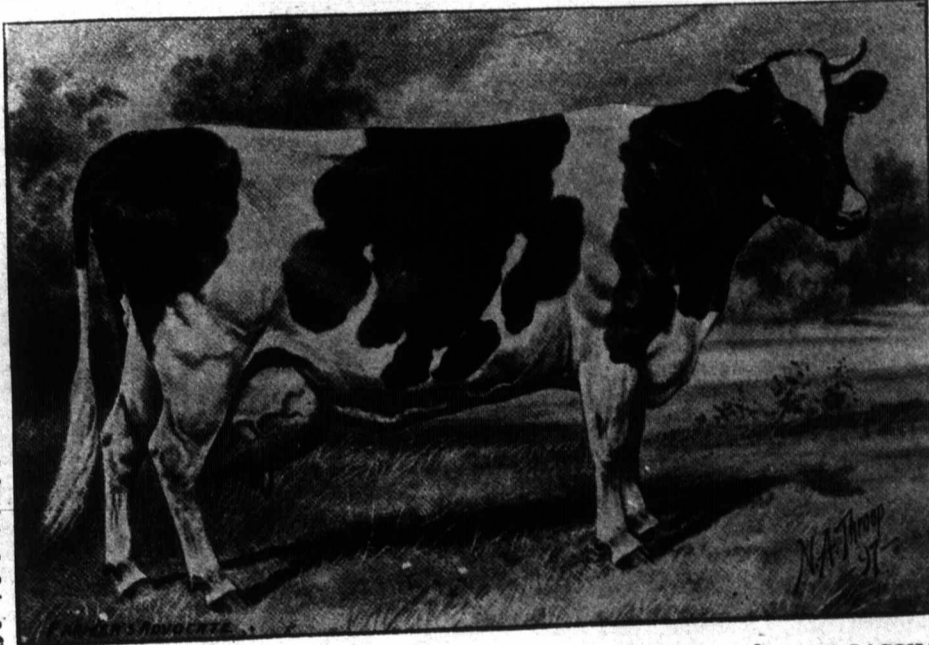
ing, the Niagara district of the Maritime Provinces, and evidently regarded by its citizens as a paradise, where the highways run through continuous miles of orchards, the fruit overhanging the roadways, and the bloom in the springtime a thing of beauty never to be forgotten when once seen. Here is the scene of Evangeline, the "Basin of Minas," still retaining its name, and the traditional location of the village of Grand Pré is pointed out to visitors, though "the forest primeval" has long since disappeared. But fruit is not by any means the only farm production of the Valley, as the fine samples of grain and roots attest, while several of the best herds of cattle also come from that district, including the first prize herd of Jerseys, and the champion female of the breed, owned by Mr. J. Rufus Starr, president of the Nova Scotia Farmers' Association; the first prize young herd of Shorthorns at St. John and Halifax, shown by Mr. William Young, and the fine herd of Messrs. E. & O. Chase, of Cornwallis, who own the champion female of the breed, and a number of other prominent prize-winners. Nova Scotia stockmen are enterprising and ambitious, are making rapid improvement, and only need to pray for endurance, and "a good conceit of themselves."

A pleasant four hours' sail across Northumberland Strait, from Pictou to Charlottetown, P. E. I., was our next experience, in company with the enterprising stockmen of the Island, who were returning from the circuit of the fairs laden with trophies of their victory, the lower deck of the steamer being packed with the prizewinning animals, which included the first prize herds of Shorthorns, Galloways, and Guernseys, the first prize flocks of Leicesters, Cotswolds, Shropshires, Lincolns, and Oxfords, and the first prize herd of Yorkshire swine—a precious cargo, and a proud record for the tight little Island in open competition with the larger Maritime Provinces.

Prince Edward Island, as seen in the summer or early autumn, is a revelation to a Western visitor who sees it for the first time. He has previously formed but a very imperfect idea of its importance, the richness of its soil, and its peculiar adaptation to agriculture, which is its chief industry, and the high standard of excellence attained by its enterprising and energetic farmers and stockmen. Its rich green fields, enclosed by hedges of hawthorne and spruce and other mixed woods, remind one much of old England, while its broad, rolling pasture lands, with their dense carpets of grass, and sleek, fat cattle, recall the blue grass regions of Kentucky. As a rule the Island is level, or at most slightly undulating. The soil, a sandy loam, varying in some parts to clay loam, is especially well adapted for oats and root crops which yield abundantly, and on several of the stock farms we saw splendid crops of ensilage, corn being stored in a fairly well matured condition, even in this season, which was one of the most backward on record, owing to the excessive rainfall during the whole summer, which caused grain crops to grow over-rank and produced rust, which seriously reduced the yield and impaired the quality; but even under these adverse conditions many farmers claim a yield of forty bushels of oats per acre. Dairying is the principal farming industry, as may be inferred from the existence of thirty-four cheese factories and five creameries, the latter operating the year round, and one-half of the cheese factories making butter in winter, and nowhere in our travels have we seen so large a percentage of high-class dairy cows showing evidence of improved breeding and having in large measure the conformation and capacity of the ideal dairy cow. These are principally well-bred grades of the Ayrshire, Jersey, Guernsey, and Holstein breeds, while excellent herds of pure-bred animals of all these breeds are found in the hands of enterprising breeders; the last three named breeds being well represented on the fine dairy farm of Mr. B. Heartz, who, it will be remembered, was the purchaser of Mrs. Jones' famous herd of Jerseys, which we found luxuriating in clover, looking particularly well. Here we recognized many familiar names and faces of famous cows which had made their mark in the prize lists of Western fairs, and many of their doughty daughters which have grown into motherly matrons and are well fulfilling the promise of their early years.

Eighty registered cows were being milked on this farm, and we can safely say it is without exception the best herd of dairy cows we have ever seen on one farm. The Provincial Government maintains a 400-acre farm here, on which are kept the high-class herds of Ayrshires and Shorthorns, the surplus stock being distributed among the county

agricultural societies, to be sold to the highest bidder, which places good stock within the reach of the farmers at their own price, which is generally a very moderate one. Mr. William Miller, who is inspector of the Government farm, has a large milk business in the city, and a beautiful farm of 105 acres some three miles distant, which is divided into four fields, and is cultivated in a short rotation; 24 acres being each year broken out of sod, and 24 acres seeded to clover each year; 24 acres being devoted to grain each year, and a like area to corn and roots. His farm buildings are first-class, the stables being supplied with water in front of the cows, and a stationary steam engine is used to drive all the machinery of the farm. The silo, of large dimensions—20 feet in diameter and 25 feet deep—was being filled with 15 tons of well-matured corn, which was estimated at 15 tons per acre. A fine herd of registered Ayrshires is maintained on the farm, headed by the handsome and richly-bred young bulls, Pure Gold, by Golden Guinea, and Jock Marshfield, by Jock Morton, a well-known prizewinner in the west. Mr. E. R. Brow's fine herd of Guernseys, fresh home from their victory at the International and Provincial exhibitions, were seen grazing at "Eastview," his rich and pretty farm just outside the city limits. A restful night was spent at the pleasant country home of Senator Ferguson, to whom grateful acknowledgments are due for kindly attentions shown, and a 15-mile drive across country to Pownal gave us glimpses of some of the most charming rural scenery it has ever been our lot to look upon, while the neat and well-kept farms along the way were a constant source of pleasurable observation. A brief stay at the homes of Albert Boswell and Henry Luce, near Pownal, and a hasty look through their limited but meritorious herds of Shorthorn cattle and flocks of Leicester and Shropshire sheep, completed our all too brief visit



AAGGIE GRACE 2ND'S PIETERJE, OWNED BY HENRY STEVENS & SONS, LAONA, N. Y.; A GREAT FIRST PRIZE AND SWEEPSTAKES WINNER. SEE GOSSIP.

to the sea-girt Isle and her sister provinces, whose people, by their intelligence, kindness and hospitality, fairly captured our heart, and left us only pleasant recollections of one of the most enjoyable outings in all our experience.

Form of Pig in Relation to Profit.

"The pig which is deep in the heart and round in the ribs will of necessity produce a larger quantity of first-class bacon (viz., prime back and ribs) than an animal that is light-chested and flat-sided. This is one of the most valuable parts of the animal, and it is therefore desirable to add as much as possible to its weight. Looking at the matter from a breeder's and pig-feeder's standpoint, the pig that is deep in the heart and well-sprung in the ribs will certainly be a good feeder, because he has plenty of room for his stomach, liver, heart, and all the main organs. Roundness of rib nearly always indicates a good constitution; flatness of rib the reverse. A pig well-sprung in the ribs will carry considerably more meat on the bone and have the ribs better clothed with flesh than one of different conformation."—*Irish Witness.*

Mr. H. I. Elliott, Danville, Que., writes us: "I have noticed in your report of the Nova Scotia Provincial Exhibition, in your issue of Oct. 15th, that you credit Arthur Johnston with being the breeder of the sweepstakes Shorthorn bull Silver Chief, and also of the bull Robert the Bruce, both of which bulls I have the honor of being the breeder of. The dam of Silver Chief, Mimosa, I bought of Mr. Johnston and left her until she had calved, and had her bred to Indian Chief. I sold the calf, or, rather, sent it to Mr. Johnston to sell for me, which he did, to the present owner, Mr. Boyer. The second bull referred to (Robert the Bruce) I bred myself straight. I owned the sire, King James, and bred the cow to him."

"Proud of the Farmer's Advocate."

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The above note, just received from a reader on the American side of the line, is a fair sample of the appreciation in which the FARMER'S ADVOCATE continues to be held. We honestly strive to give the farmers the best that can be furnished in agricultural literature; hence subscribers write us like the following from Mr. H. N. Bingham, of Simcoe Co., Ont.: "I consider that every number is worth \$1.00 to me." But the FARMER'S ADVOCATE does not stop at that.

Our Christmas Number for 1898.—It will be unique in agricultural journalism, and we hope worthy the splendid attainments of the Canadian farmer. The pictorial features will, perhaps, be the most striking, embracing views of a large number of the best-appointed farms in every Province of the Dominion, examples of what has been accomplished in different branches of farming, such as stock-raising, fruit culture, dairying, grain-growing, etc. Many of them will be full page representations, and others over one-third page in size. There will also be engravings of the Dominion Experimental Farms, and the Agricultural College at Guelph, Ontario, and a score of other attractive illustrations. They will be executed by the foremost artists on the continent, and accompanying them will be articles of interest and practical value written by various members of our editorial staff. A fine series of contributed articles out of the beaten path, and a few in lighter vein suited to the season, together with a glimpse at the home life of a typical European farmer, will afford something of interest to every reader. On the part of artists, engravers, editors, and contributors, it entails some six months' labor, and a very heavy outlay on our part. The price has been fixed at fifty cents per single copy, but all regular subscribers will receive it without extra charge.

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Grand Cash Prize Competition.—As a special inducement to our friends who will aid in extending our subscription lists, we have decided to offer a cash commission of 25 cents for every new subscriber sent in, together with \$50 in cash, to be divided as follows among those sending in the seven largest lists during November and December. Prizes: 1st, \$15.00; 2nd, \$12.00; 3rd, \$10.00; 4th, \$8.00; 5th, \$4.00; 6th, \$2.00; 7th, \$1.00. Everyone sending in one or more new subscribers will receive at least the 25 per cent. cash commission, and also stand a chance of earning one of these handsome cash prizes. Names and money should be sent in as fast as obtained, and will be credited the person getting up the club. Renewals will not count in competition. Our regular salaried agents and agricultural society or farmers' institute lists are excluded from this competition. Send for free sample copy and subscription forms and begin work at once, in order to make the best possible use of the two months' time. Every new subscriber receives the balance of this year, the Christmas number, and every issue of the paper issued in 1899. No subscription must be taken at less than \$1.00. The 25 per cent. commission may be retained as the names are sent in. Final lists in cash competition must be mailed before January 1st, 1899.

A Great Teacher's Bible Offer.—Many of our readers will remember the beautiful new Bagster's Teacher's Bible which we gave last year to those sending us in the names of three new subscribers. We are glad to be able again to bring this volume of inestimable value within reach of our readers, and on even more favorable terms. A copy will be sent post free to each one sending us the names of only two new subscribers, at \$1.00 each, during the months of November and December.

Our New Self Binder.—Each copy of the FARMER'S ADVOCATE, as received, is safely secured as in a fine cloth-bound book. Handy, handsome, durable. Will be sent post prepaid to any subscriber sending us two new yearly subscriptions, or to any subscriber who, during November or December, sends in his or her renewal for another year, accompanied by one new yearly subscription.

How to Get the Paper Free.—Any present subscriber sending in two new subscribers and \$2.00 will have his or her subscription extended for one year.

THE FARMER'S ADVOCATE

AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

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THE WILLIAM WELD COMPANY (LIMITED),
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JOHN WELD, MANAGER.

1. THE FARMER'S ADVOCATE is published on the first and fifteenth of each month.
2. It is impartial and independent of all classes or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical, and reliable information for farmers, dairymen, gardeners, and stockmen, of any publication in Canada.
3. TERMS OF SUBSCRIPTION—\$1.00 per year in advance; \$1.25 if in arrears; sample copy free. European subscription, £s. or \$1.50. New subscriptions can commence with any month.
4. ADVERTISING RATES—Single insertion, 30 cents per line. Contract rates furnished on application.
5. DISCONTINUANCES.—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given.
6. THE ADVOCATE is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.
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10. THE DATE ON YOUR LABEL shows to what time your subscription is paid.
11. SUBSCRIBERS failing to receive their paper promptly and regularly will confer a favor by reporting the fact at once.
12. NO ANONYMOUS communications or enquiries will receive attention.
13. LETTERS intended for publication should be written on one side of the paper only.
14. WE INVITE FARMERS to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions How to Improve the ADVOCATE, Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation, are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.
15. ALL COMMUNICATIONS in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

Address—THE FARMER'S ADVOCATE, or
THE WILLIAM WELD CO.,
LONDON, CANADA.

will have to use his discrimination, because individuals differ so, and one pig would thrive under treatment which another could not stand without serious loss.

It must be understood that the above remarks apply only to animals which are to be retained for breeding purposes. Those which are intended for the butcher or for fat stock shows must be treated very differently. In their case there must be no change of feed or lowering of rations, but they must be pushed on steadily on the feed they are accustomed to, otherwise they will not be in the best form to be shown or sold when the time comes.

A Trip to the Eastern Provinces.

[EDITORIAL CORRESPONDENCE.]

To one who makes the trip to the Maritime Provinces for the first time there are many interesting features to note. Leaving Montreal at night in a sleeper, the traveler passes through some of the best farming districts of the Province of Quebec without seeing them, but is compensated on the return trip by taking the daytime for it. This section of the O. P. R. runs through a considerable portion of the State of Maine, much of which is mountainous, broken, and largely unfit for farming, as are also large areas of the land in New Brunswick through which the road passes. But in the last few hours, as we near the city of St. John, many beautiful valleys with well-kept farms and neat homesteads come into view. Agriculture is not yet a leading commercial pursuit in this Province, fishing and lumbering having been the main dependence of the majority of the people, but increasing attention is being given to farming, especially to dairying, cheese factories and creameries being numerous and well patronized in many sections. The Provincial Government has taken an active interest in promoting the farming industries by liberal grants for the purchase and dissemination of pure-bred live stock, the influence of which is seen in the character of the cattle on many farms and in the stock shown at the exhibitions, which is exceedingly creditable, while the samples of fruit, vegetables and roots displayed at the fairs would rank well with the best in any province. The lumber trade is still the great industry. Sawmills abound along the rivers, the larger ones being within reach of river boats, which in their turn transfer the sawn lumber to ocean-going vessels.

St. John, the principal city, with a population of about 40,000 is finely situated for trade and manufacture. The harbor is well sheltered and is open the year round, the strong current carrying all the ice of the river out to sea. The city, which has risen beautifully from the ashes of the great fire of 1877, which destroyed all the business portion and property to the value of \$25,000,000, is compactly built on a rounded tongue of slate rock between the harbor and a little offshoot

called Courtenay Bay that runs bare at low water. Hills and high ground surround the city on the north and west. The houses are mainly of brick, but there are numerous fine stone residences and warehouses. Many of the churches are of the best style of architecture, while the Government buildings, the post office, customs house, and hospitals, are handsome and substantial structures. The city presents a very fine appearance on being approached from the water, but the view opposite the reversible falls from the hills of Carleton, a suburban town, is not surpassed even by the view from Montreal Mountain or the Citadel of Quebec. The extensive and varied natural park, including circuitous and shady walks and drives, lakes and lagoons, and the long drive by the beach of the beautiful Kennebecasis Bay, with its charming scenery, makes St. John a most interesting city to the visitor. A sail of forty miles up the majestic St. John river on a bright September day, with its charming accompaniment of scenery in the well-wooded hills on either side, pretty islands fringed to the water's edge with dense shrubbery, and the tasty summer cottages of city people along the shore, with here and there a well-kept farm coming into view, was an experience not to be soon forgotten.

Among the chief towns is Woodstock, sixty-five miles above Fredericton on the St. John river, in a fertile region of the Silurian belt. In addition to its lumber trade it has a manufactory of extract of tan bark, and there are iron ores in the vicinity. Sussex is a thriving town in the midst of a fine agricultural and dairying district. Sackville, at the head of Cumberland Bay, is in a fine farming and stock-raising region, its extensive dyked marshes, the richest land in the Province, producing large quantities of hay and grain. Moncton, a fast rising town on the Petitcodiac, is the headquarters of the Intercolonial Railway and has the railway workshops. It contains also a large sugar refinery.

Nova Scotia, as an integral part of ancient "Acadie," presents many interesting features. While as a mineral-producing province it stands out prominently, being surpassed only by British Columbia in the production of gold, and holding first place in that of coal, iron, and gypsum; it is also fast making a name as an agricultural province. Its numerous fertile valleys produce immense quantities of hay and pasture, and though principally used as meadows, are capable of growing grand crops of grain and roots as well. These were originally marshes, which have been reclaimed and improved by dyking the river banks to shut out the tides, which would otherwise overflow them, but "at stated seasons the flood-gates are opened and the sea is welcomed to wander at will o'er the meadows," as graphically described by Longfellow in his "Evangeline," which had for its scene a historic spot in this same "Acadie." The farmer who is fortunate enough to own a fair share of this marsh land feels that he is on the ground floor, as its value runs from \$150 to \$300 per acre.

The uplands, through which the highways run and where the homesteads stand, though not exceptionally rich, are generally good farming lands, and when properly farmed give fair returns, a popular means of fertilizing them being the application of what is called marsh mud, composed of a deposit of the sediment of the tide when it backs up into the rivers, which is hauled in carts and spread on the land. Under the prevailing system of survey, the farms being narrow and running back on either side of the highways, neighbors are near together, and the neat frame houses and barns, invariably painted or white-washed, give a cheery aspect to the country, having much the appearance of a succession of villages.

A couple of days were profitably spent at the Maritime Experimental Farm at Nappan, now under the efficient superintendence of Mr. R. Robertson, formerly a successful farmer at Compton, Quebec. The farm is pleasantly situated six miles from the beautiful town of Amherst, the original home of the talented Tupper, Sir Charles and his son Sir Hibbert, and near which are located some of the finest herds of pure-bred cattle in the provinces, including the champion Herefords of W. W. Black, C. W. Holmes' Shorthorns, and the "Bonnie View" Jerseys of E. B. Elderkin & Sons, headed by Golden Lad, the sweepstakes bull at the Provincial Show.

The selection of the site of the Experimental Farm was evidently not a fortunate one, the soil being naturally poorer than the average of the district, and the shape of the fields made irregular by the passing of the railway and the highways through it, but by a thorough system of draining, plowing in of green crops, and a liberal application of marsh mud and the barnyard manure made by feeding cattle under the direction of the ex-superintendent, Col. Blair, during the nine years of his incumbency, a considerable portion of the farm has been brought into a condition that produces excellent crops of clover, roots and corn, a field of clover having this year yielded over three tons per acre in the first cutting and producing a second crop estimated equal to one ton per acre, which has been plowed down to further enrich the land. Some of the trial plots of ensilage corn have yielded at the rate of twenty tons per acre, the field crop was estimated at fifteen tons, and of potatoes as high as 420 bushels per acre are recorded this year. Although the season has been unfavorable to grain crops on account of an excess of rain, causing rust, which has reduced the weight of yield, yet the

report, on the whole, will show favorable results for Mr. Robertson's first year, while his plans for the future are practical and comprehensive, and we hope to see good work done at this station.

A new enterprise in this region, from which good results are anticipated, is the organization of the Maritime Stock Improvement Company, with a capital of \$50,000 and with Col. Blair as Managing Director, the object being to raise the standard of farm stock in the Provinces and to carry on the business of importing, breeding, transporting and marketing all classes of pure-bred and high-grade stock. An excellent stock farm near the station at Nappan has been purchased, and additional buildings are being erected for carrying out the plans of the Company, a nucleus of stock having already been purchased. Col. Blair, the plucky projector of this scheme, is regarded as the apostle of improved stock in the Province, having devoted the best energies of an active life to this work, and we wish him all success in his latest endeavor to benefit the farmer by means of this movement.

The Provincial School of Agriculture is located at Truro, a pretty town in Colchester County. This school was established in 1885 in connection with the Provincial Normal School, which is also permanently established at Truro, and is under the direction of Prof. Hermon W. Smith, B. S., a graduate of Cornell University. It has occupied a separate building on "Bible Hill" on the Provincial Farm in the outskirts of the town—a fine situation, commanding a charming view of rural scenery, including the rich marsh meadows and upland farms of the Onslow district in the distance. The school building was destroyed by fire last spring, and has not yet been rebuilt, owing to some sectional contentions as to its location and the absence of a well-defined policy for the carrying out of the objects of this and its sister institution, the School of Horticulture, which is located at Wolfville, a division of forces which is far from desirable, and which should be ended or amended by a combination of the schools at some point. Indeed, all the agricultural and horticultural institutions of the Province are evidently in an unsatisfactory condition, and a vigorous policy of extension and efficiency is urgently needed. What is wanted is a school after the model of the Guelph College, and to this end a leading spirit is longed for—one familiar with the requirements of the situation and qualified for organizing and evolving a policy that will meet the need. Given this and the probability is that the Government will not withhold the necessary financial aid. One of the attractions to a stockman at Truro is "Bellevue," the fine stock farm of Mr. C. A. Archibald, and his noted herds of Shorthorns and Ayrshires, which stood so high on the honor roll at the Provincial Fair. A very large and successful milk-condensing factory is also in operation here, which is well patronized by the farmers.

The City of Halifax—the "Gibraltar of America"—with an estimated population of 45,000 (the only city in the Province), situated some seven miles from the mouth of the harbor upon a tongue of land between the harbor proper and the "north-west arm," is noted for the strength and efficiency of its fortifications and as the only place in the Dominion where the Imperial Government maintains a garrison. It is also the summer station of the North American squadron. The highest point of the ridge on which the city is built and near the center of it is occupied by the citadel, probably the strongest fortification on the Continent, and commanding the whole harbor. The extremity of the tongue of land is a public park, with fine picturesque drives, and the Horticultural Gardens are an attractive feature of the city, being among the most perfect in America. In Halifax the Provincial Exhibition is held. The buildings and grounds for this purpose are admirably arranged, and the display of stock and products were a credit to the Province, but three days of steady rain sadly militated against its financial success this year.

The live stock features of the show were briefly reviewed in our last issue. The agricultural building was well filled with a grand display of first-class vegetables and roots, the potatoes being especially fine. The Provincial Farm made a very tasty display of its products under the superintendence of Mr. F. L. Fuller, the Farm Manager, who also conducted a working dairy, with the assistance of two of the students of the School of Agriculture, who made butter twice daily in full view of an interested crowd of visitors. The Maritime Experimental Farm occupied the center of the hall with a magnificent display of its productions, designed and arranged with exquisite taste by Mr. W. S. Blair, Horticulturist of the Farm. The show of fruit, especially of apples, was a genuine surprise to a Western man. High-class exhibits of many of the best varieties of winter apples suitable for the export trade were here in abundance, and Mr. Bigelow, the energetic President of the N. S. Fruit Growers' Association, glories in the fact that \$1,000,000 in solid cash represents the income to the farmers of the Province for their annual apple crop exported, in addition to what is consumed by the home market. In this department the President was ably seconded by Mr. S. C. Parker, the enthusiastic Secretary, and by Prof. F. C. Sears, the Director of the Provincial School of Horticulture, and Mrs. Johnson, all of whom take a deep interest in the work of the Association.

We regret that our engagements precluded the possibility of visiting the famous Annapolis Valley, acknowledged by all to be, in respect to fruit grow-

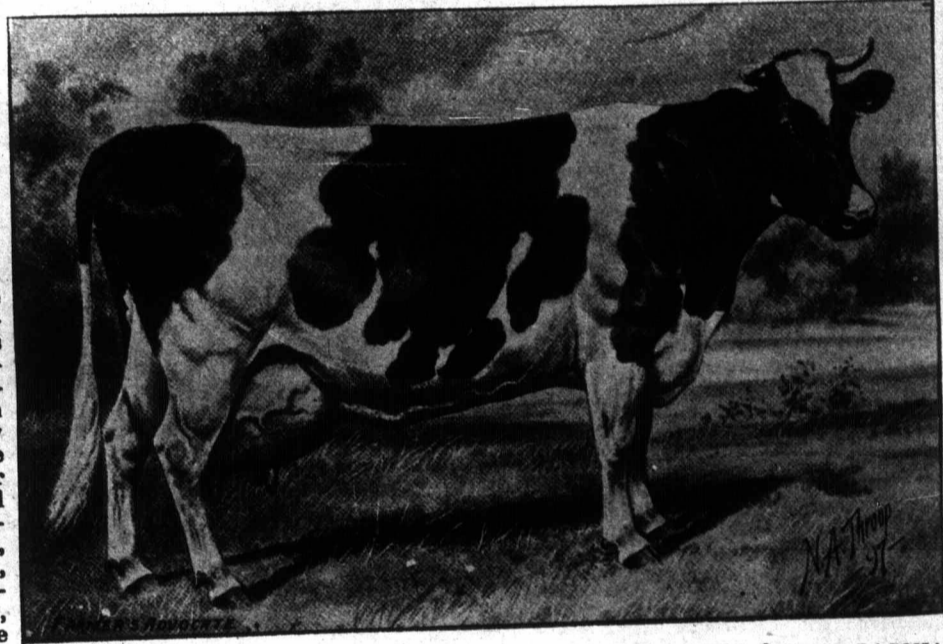
ing, the Niagara district of the Maritime Provinces, and evidently regarded by its citizens as a paradise, where the highways run through continuous miles of orchards, the fruit overhanging the roadways, and the bloom in the springtime a thing of beauty never to be forgotten when once seen. Here is the scene of Evangeline, the "Basin of Minas," still retaining its name, and the traditional location of the village of Grand Pré is pointed out to visitors, though "the forest primeval" has long since disappeared. But fruit is not by any means the only farm production of the Valley, as the fine samples of grain and roots attest, while several of the best herds of cattle also come from that district, including the first prize herd of Jerseys, and the champion female of the breed, owned by Mr. J. Rufus Starr, president of the Nova Scotia Farmers' Association; the first prize young herd of Shorthorns at St. John and Halifax, shown by Mr. William Young, and the fine herd of Messrs. E. & O. Chase, of Cornwallis, who own the champion female of the breed, and a number of other prominent prize-winners. Nova Scotia stockmen are enterprising and ambitious, are making rapid improvement, and only need to pray for endurance, and "a guid conceit o' themselves."

A pleasant four hours' sail across Northumberland Strait, from Pictou to Charlottetown, P. E. I., was our next experience, in company with the enterprising stockmen of the Island, who were returning from the circuit of the fairs laden with trophies of their victory, the lower deck of the steamer being packed with the prizewinning animals, which included the first prize herds of Shorthorns, Galloways, and Guernseys, the first prize flocks of Leicesters, Cotswolds, Shropshires, Lincolns, and Oxford, and the first prize herd of Yorkshire swine—a precious cargo, and a proud record for the tight little Island in open competition with the larger Maritime Provinces.

Prince Edward Island, as seen in the summer or early autumn, is a revelation to a Western visitor who sees it for the first time. He has previously formed but a very imperfect idea of its importance, the richness of its soil, and its peculiar adaptation to agriculture, which is its chief industry, and the high standard of excellence attained by its enterprising and energetic farmers and stockmen. Its rich green fields, enclosed by hedges of hawthorne and spruce and other mixed woods, remind one much of old England, while its broad, rolling pasture lands, with their dense carpets of grass, and sleek, fat cattle, recall the blue grass regions of Kentucky. As a rule the Island is level, or at most slightly undulating. The soil, a sandy loam, varying in some parts to clay loam, is especially well adapted for oats and root crops which yield abundantly, and on several of the stock farms we saw splendid crops of ensilage corn being stored in a fairly well matured condition, even in this season, which was one of the most backward on record, owing to the excessive rainfall during the whole summer, which caused grain crops to grow over-rank and produced rust, which seriously reduced the yield and impaired the quality; but even under these adverse conditions many farmers claim a yield of forty bushels of oats per acre. Dairying is the principal farming industry, as may be inferred from the existence of thirty-four cheese factories and five creameries, the latter operating the year round, and one-half of the cheese factories making butter in winter, and nowhere in our travels have we seen so large a percentage of high-class dairy cows showing evidence of improved breeding and having in large measure the conformation and capacity of the ideal dairy cow. These are principally well-bred grades of the Ayrshire, Jersey, Guernsey, and Holstein breeds, while excellent herds of pure-bred animals of all these breeds are found in the hands of enterprising breeders; the last three named breeds being well represented on the fine dairy farm of Mr. B. Hartz, who, it will be remembered, was the purchaser of Mrs. Jones' famous herd of Jersey, which we found luxuriating in clover, looking particularly well. Here we recognized many familiar names and faces of famous cows which had made their mark in the prize lists of Western fairs, and many of their doughty daughters which have grown into motherly matrons and are well fulfilling the promise of their early years.

Eighty registered cows were being milked on this farm, and we can safely say it is without exception the best herd of dairy cows we have ever seen on one farm. The Provincial Government maintains a 400-acre farm here, on which are kept the high-class herds of Ayrshires and Shorthorns, the surplus stock being distributed among the county

agricultural societies, to be sold to the highest bidder, which places good stock within the reach of the farmers at their own price, which is generally a very moderate one. Mr. William Miller, who is inspector of the Government farm, has a large milk business in the city, and a beautiful farm of 105 acres some three miles distant, which is divided into four fields, and is cultivated in a short rotation; 24 acres being each year broken out of sod, and 24 acres seeded to clover each year; 24 acres being devoted to grain each year, and a like area to corn and roots. His farm buildings are first-class, the stables being supplied with water in front of the cows, and a stationary steam engine is used to drive all the machinery of the farm. The silo, of large dimensions—20 feet in diameter and 25 feet deep—was being filled with 15 acres of well-matured corn, which was estimated at 15 tons per acre. A fine herd of registered Ayrshires is maintained on the farm, headed by the handsome and richly-bred young bulls, Pure Gold, by Golden Guinea, and Jock Marshfield, by Jock Morton, a well-known prizewinner in the west. Mr. E. R. Brow's fine herd of Guernseys, fresh home from their victory at the International and Provincial exhibitions, were seen grazing at "Eastview," his rich and pretty farm just outside the city limits. A restful night was spent at the pleasant country home of Senator Ferguson, to whom grateful acknowledgments are due for kindly attentions shown, and a 15-mile drive across country to Pownal gave us glimpses of some of the most charming rural scenery it has ever been our lot to look upon, while the neat and well-kept farms along the way were a constant source of pleasurable observation. A brief stay at the homes of Albert Boswell and Henry Lane, near Pownal, and a hasty look through their limited but meritorious herds of Shorthorn cattle and flocks of Leicester and Shropshire sheep, completed our all too brief visit



AAGGIE GRACE 2ND'S PIETERTJE, OWNED BY HENRY STEVENS & SONS, LAONA, N. Y.; A GREAT FIRST PRIZE AND SWEEPSTAKES WINNER. SEE GOSSIP.

to the sea-girt isle and her sister provinces, whose people, by their intelligence, kindness and hospitality, fairly captured our heart, and left us only pleasant recollections of one of the most enjoyable outings in all our experience. J. C. S.

Form of Pig in Relation to Profit.

"The pig which is deep in the heart and round in the ribs will of necessity produce a larger quantity of first-class bacon (viz, prime back and ribs) than an animal that is light-chested and flat-sided. This is one of the most valuable parts of the animal, and it is therefore desirable to add as much as possible to its weight. Looking at the matter from a breeder's and pig-feeder's standpoint, the pig that is deep in the heart and well-sprung in the ribs will certainly be a good feeder, because he has plenty of room for his stomach, liver, heart, and all the main organs. Roundness of rib nearly always indicates a good constitution; flatness of rib the reverse. A pig well-sprung in the ribs will carry considerably more meat on the bone and have the ribs better clothed with flesh than one of different conformation."—Irish Witness.

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Our Christmas Number for 1898.—It will be unique in agricultural journalism, and we hope worthy the splendid attainments of the Canadian farmer. The pictorial features will, perhaps, be the most striking, embracing views of a large number of the best-appointed farms in every Province of the Dominion, examples of what has been accomplished in different branches of farming, such as stock-raising, fruit culture, dairying, grain-growing, etc. Many of them will be full-page representations, and others over one-third page in size. There will also be engravings of the Dominion Experimental Farms, and the Agricultural College at Guelph, Ontario, and a score of other attractive illustrations. They will be executed by the foremost artists on the continent, and accompanying them will be articles of interest and practical value written by various members of our editorial staff. A fine series of contributed articles out of the beaten path, and a few in lighter vein suited to the season, together with a glimpse at the home life of a typical European farmer, will afford something of interest to every reader. On the part of artists, engravers, editors, and contributors, it entails some six months' labor, and a very heavy outlay on our part. The price has been fixed at fifty cents per single copy, but all regular subscribers will receive it without extra charge.

New Subscribers Get It.—Every new yearly subscriber receives the balance of the present year's issues, the magnificent Christmas number, and all the issues for 1899 at the ordinary subscription rate of \$1.00.

Grand Cash Prize Competition.—As a special inducement to our friends who will aid in extending our subscription lists, we have decided to offer a cash commission of 25 cents for every new subscriber sent in, together with \$50 in cash, to be divided as follows among those sending in the seven largest lists during November and December. Prizes: 1st, \$15.00; 2nd, \$12.00; 3rd, \$10.00; 4th, \$8.00; 5th, \$4.00; 6th, \$2.00; 7th, \$1.00. Everyone sending in one or more new subscribers will receive at least the 25 per cent. cash commission, and also stand a chance of earning one of these handsome cash prizes. Names and money should be sent in as fast as obtained, and will be credited the person getting up the club. Renewals will not count in competition. Our regular salaried agents and agricultural society or farmers' institute lists are excluded from this competition. Send for free sample copy and subscription forms and begin work at once, in order to make the best possible use of the two months' time. Every new subscriber receives the balance of this year, the Christmas number, and every issue of the paper issued in 1899. No subscription must be taken at less than \$1.00. The 25 per cent. commission may be retained as the names are sent in. Final lists in cash competition must be mailed before January 1st, 1899.

A Great Teacher's Bible Offer.—Many of our readers will remember the beautiful new Bagster's Teacher's Bible which we gave last year to those sending us in the names of three new subscribers. We are glad to be able again to bring this volume of inestimable value within reach of our readers, and on even more favorable terms. A copy will be sent post free to each one sending us the names of only two new subscribers, at \$1.00 each, during the months of November and December.

Our New Self Binder.—Each copy of the FARMER'S ADVOCATE, as received, is safely secured as in a fine cloth-bound book. Handy, handsome, durable. Will be sent post prepaid to any subscriber sending us two new yearly subscriptions, or to any subscriber who, during November or December, sends in his or her renewal for another year, accompanied by one new yearly subscription.

How to Get the Paper Free.—Any present subscriber sending in two new subscribers and \$2.00 will have his or her subscription extended for one year.

STOCK.

The Provincial Exhibition of British Columbia.

The Royal Agricultural and Industrial Society of British Columbia held their annual exhibition at New Westminster, Oct. 5th to 13th, when \$18,000 was offered in prizes. Extraordinary efforts had been made to render the exhibition truly representative of the different sections of the Province by Commissioner W. H. Keary and the Board of Directors, with very gratifying results both to the officials and the public generally. The disastrous conflagration which recently wiped out of existence almost the entire business portion of the City of New Westminster delayed the necessary work on the new buildings required to display the exhibits, but the ruins themselves were probably an additional attraction for visitors. The weather was very fine and warm during the first week of the fair, but, unfortunately, turned stormy and wet on the 9th and continued so until its close. A new feature, and what proved to be one of the most attractive of the fair, was a competition for three prizes, aggregating \$600, open to all the agricultural associations of the Province, for district exhibits of fruit, grain, grasses, roots and vegetables, artistically arranged. Handsome collections were sent in by the Chilliwack, Spallumcheen and Okanagan, Kelowna, Kamloops, Cowichan, and Langley Agricultural Associations. The prizes were awarded to the three first mentioned in the order stated. Collections of fruit of great excellence formed very attractive portions of the exhibits from all the districts competing. Hops from the Okanagan valley, of fine color and quality, and tobacco, cured and green, also manufactured into cigars, from Kelowna, are worthy of special mention, it being amply demonstrated that these sections are exceptionally well adapted to the growth of the special crops referred to, and their products fetching high prices in the open markets. Kelowna also made a fine showing of hams and bacon, somewhat higher cured than that usually offered for sale. The show of stock was very good in quality, but deficient in numbers in some classes. Complaints were made that the length of the exhibition was too great, and resulted in many good animals being kept at home. There is room for improvement in the preparation of much of the stock shown for exhibition purposes, a good many animals appearing to disadvantage on this account. Horses were judged by Mr. F. Torrance, V. S., of Winnipeg, and cattle, sheep and hogs by Mr. Jas. Bray, of Portage la Prairie, and their rulings gave general satisfaction.

CATTLE.

Although some very fine animals were shown, the beef breeds were not so well represented as they should be, and the competition was confined to a few individuals. In *Shorthorns*, Mr. Price Ellison, of Vernon, showed a well-grown two-year-old bull of great merit, 24th Duke of Grafton 28169, bred by Steele Bros., Salmon River Valley, B. C. He is rich roan in color, well proportioned, handled well, and showed the result of good care and feeding, and is a decided improvement on other animals in his class. Mr. W. H. Lidner, of Lidner's Landing, was a heavy prizewinner in this class, and also took the herd prize. He showed some very promising young stock, especially in two-year-old heifers, besides some nice level cows of good type, with better milking development than is customary nowadays with this breed.

Herefords.—All of the prizes in this class fell to the Kirkland Estate, who showed a herd of excellent animals, headed by their bull Nicola, a grand, massive specimen of the breed who would score well in competition anywhere. A two-year-old bull of his get, Rustler, showed all his sire's quality, and the cows and young stock too were all good specimens, showing fine quality. This herd was in good show condition, in pleasing contrast to others on the ground.

In the dairy breeds the competition was much keener, and a number of really first-class animals were shown. A tendency to coarseness was noticed in some of the younger stock, especially in Holsteins, although the Jerseys were not altogether free from the same tendency.

Jerseys.—The chief honors fell to the herd of magnificent animals shown by Mr. A. J. Street, of Chilliwack, who took 1st and sweepstakes prizes for bull of any age, 1st and 2nd in cows, and the herd prize, repeating victories gained at Chilliwack the preceding week. Mr. Street's herd was headed by the grand bull Liverpool Boy, a fine, vigorous animal, with first-rate lung and stomach development, coupled with good form and dairy points. This bull would class high in competition anywhere. In cows, Essie Gay, Kittie Gay, Leah of Sumas, and Wanda S., a daughter of the first named, by Belle's Rioter, made up a quartette difficult to match. Their fine dairy form and development, coupled with vigorous constitutions, demanded the highest encomiums. The two leading cows were freshly calved, and, of course, their udder and teat development showed to great advantage. Mr. A. C. Wells took 2nd for bull of any age, showing a fine animal, with good coloring and fine skin—perhaps somewhat heavy in the neck and shoulders. Messrs. T. Shannon & Sons took 1st for two-year-old bull with Premier Laurier, a well-developed animal, with fine quality. Mr. J. S. Smith, of Chilliwack, also made an excellent showing of Jerseys, capturing 1st prizes for one-year-old heifer and heifer calf; also 1st for bull and four of his get. Altogether the Jerseys were the finest class of cattle exhibited, and their popularity in the Province is firmly established.

Holsteins were a strong class, the honors being divided amongst Messrs. H. F. Page, R. McLeod, and W. Newlands. In aged bulls Mr. Page showed a very good animal, and also took 1st for bull calf, sweepstakes prize for best bull any age, and Governor-General's gold medal for the best bull. In females Mr. McLeod took 1st for aged cow and one- and two-year-old heifers with good animals, of heavy milking strains. Mr. Newlands took 2nd for aged bull and 1st for bull with four of his get. It is quite possible that good preparation of the animals exhibited in this class would have resulted in some changes in their relative positions on the prize list.

In *Ayrshires* some good animals were shown, Mr. A. C. Wells showing a fine bull in good condition, winning 1st prize and sweepstakes, but being dehorned his appearance was detracted from considerably. In cows the same breeder took 2nd and 3rd, and 1st for bull calves. Mr. J. McCulloch showed a very fine herd, winning 1st in all classes for females and the herd prize. His cows were fine specimens of the breed, with good udder development and well-placed teats.

In *Guernseys* Messrs. H. Kipp & Sons showed a good bull, having a soft, mellow skin and rich coloring. Mr. Beebe showed a nice two-year-old bull of good quality. Mr. E. A. Kipp was the largest exhibitor, capturing three 1sts for females, the herd prize, and sweepstakes for best bull any age with a very choice animal, Excelsior Duke, a prizewinner at the Toronto Industrial.

In graded dairy stock many fine cows were shown. W. Newlands took 1st and J. McCulloch second; the latter also took 1st in the competition for cow giving most milk. For cow giving most butter-fat in 24 hours during the exhibition, Mr. J. S. Smith took 1st honors and Mr. J. A. Street 2nd, both with Jerseys.

HORSES.

The show of horses was not large, and in some classes there was very little competition. *Roadsters* were an exception, and a capital lot were shown in the single drivers class, J. W. Hollingshead taking first, also winning special prizes for roadster mare with three of her produce and best exhibition of roadsters. In Standard-bred trotters J. T. Wilkinson took 1st with Colloquy, winning the championship open to Roadsters, Standard-breds, Thoroughbreds, and Coach horses, with the same horse, also taking special prize for the best trio of Standard-bred horses, stallion and two mares. These horses were all shown in excellent condition and were well handled.

In *Clydesdales* Mr. J. A. Evans showed a capital stallion, McRae 6057 (imported), tracing back to the well-known Breadalbane, a very active horse, dark bay in color, with first-rate bone. He took 1st in his class, also championship for best draft stallion, and silver cup for best draft horse on exhibition, any breed, age, or sex. In *Clydesdale* brood mares B. Russell took 1st with a capital mare of good weight and substance, with Jas. Bryce a close second. In the championship class for stallion with five of his get the honors fell to the same exhibitor, who showed King Fergus and a grand lot of his colts. Mr. Bryce also showed a fine team of heavy draft mares.

In *Suffolk Punches*, J. M. Steves was the largest exhibitor, showing two stallions, also brood mares and young stock; very fair representatives of the breed.

Percherons were few in number, H. F. Page showing a fairly good stallion, somewhat out of condition, and a good brood mare. H. D. Benson showed a fine coach stallion, and J. W. Hollingshead a good mare of the same class which drew considerable attention. The Tolmie Estate showed their fine stallions, Midgard and Lollard, well-known throughout the Province, and offered them for sale at the close of the exhibition.

SHEEP.

Some very good specimens of *Oxfords*, *Shropshires*, and *Southdowns* were exhibited, but competition was light in most classes. T. Shannon & Sons showed a nice, level lot of *Oxfords*, winning many prizes, including 1st for pen of ram and five ewes. Mr. J. Richardson was also a large exhibitor and prizewinner. His aged ram was a fine specimen of the breed.

In *Shropshires* E. A. Kipp showed fine stock. His imported ram, Chancellor, is a grand specimen of the breed—level and compact. His sire was a winner at the World's Fair, Chicago. In ewes and young stock also animals were shown of good quality and size.

In *Southdowns* J. T. Wilkinson was by far the largest exhibitor. His imported ram lamb, Babram Beau, from the Webb Farm, Cambridgeshire, England, would be an acquisition to any flock in Canada. He took 1st in his class and the silver cup for best animal on the ground in sheep. A capital lot of ewes and lambs were also shown from the same flock.

Cotswolds were shown by J. Richardson, of Plumper Pass, a very useful lot.

Lincolns were a good class, A. C. Wells & Son showing pens of well-bred sheep, symmetrical, and having good fleeces of fine lustrous quality.

J. T. Maynard showed some good Dorset Horns, and J. Richardson some capital representatives of Norfolk Downs, with good substance and quality.

SWINE.

Berkshires were largely shown and competition was keen. Mr. J. A. Evans took 1st for two-year-old boar with Berkshire Pride, imported by J. T. Wilkinson, winning sweepstakes for best boar any age or breed with him also, and 1st for sow one year old. T. Shannon & Sons, Cloverdale, were large exhibitors and prizewinners taking 1st for one-year-old boar, 1st for boar over six and under twelve months, 1st for boar under six months, 1st and 2nd for sows two years old and over, 1st for sows under one year and for sows under six months, and 1st for boar and two sows. Other prominent exhibitors were A. C. Wells & Son and H. Kipp & Sons.

A splendid lot of *Poland-Chinas* were shown by Geo. Banford, of Chilliwack. His breeding stock were from the firm of T. V. Purcell & Co., Polo, Illinois. A young sow, Purcell's Model, showed extra fine quality and substance.

E. A. Kipp, of Chilliwack, showed a grand lot of breeding *Duroc-Jerseys*. The foundation stock was imported from Tape Bros., of Ridgetown, Ontario.

In *Chester Whites* Mr. W. R. Austin and J. Thompson were the principal prizewinners.

Suffolds were shown by A. M. Sturdy, and *Yorkshires* by Messrs. H. F. Page and E. A. Kipp.

GRAIN.

The grain exhibits were large and generally of excellent quality. In wheat-growing the Okanagan Valley asserted

its superiority, carrying off the premiums for both fall and spring grain with very choice samples of Fyfe wheat. In oats the honor fell to the coast district, the first-prize sample going 48 pounds to the bushel. Five samples of peas were shown from the same locality. H. Kipp & Sons were large exhibitors in nearly all classes and won the special prize for the largest and best exhibit.

DAIRY PRODUCE.

In dairy produce the competition was very keen. Cowichan Creamery took 1st in creamery butter and silver cup offered by the Dairymen's Association. J. McCallum exhibited largely and won a number of prizes, including first for butter in 10-pound lots in rolls. The butter was scored and judged by Mr. Marker, of the Dominion dairy staff, and his work was highly appreciated.

FRUIT.

The display of fruit was the finest ever gathered together in the Province, and representative of all the fruit-growing districts. Apples formed the largest and most prominent feature, collections of varieties from Cowichan, Lytton, Chilliwack, Kamloops, and Kelowna being especially good. In single plate exhibits of varieties, perfect specimens of Gravensteins, Kings, Bienheim and Ribston Pippins, Baldwins, Northern Spies, Rhode Island Greenings, Wealthys, Golden Russets, Canada Reinettes, besides many of the newer varieties, such as Ontario, Grimes' Golden, and Shackelford, were shown. Mr. Thos. G. Earl, of Lytton, was a heavy prizewinner, taking the silver cup offered for the largest number of winning plates. Other large exhibitors and prizetakers were: G. W. Beebe, of Agassiz; A. McLennan, of Kelowna; H. Kipp & Sons, Chilliwack; W. Fortune, Kamloops; and F. Lickman, Chilliwack. A fine showing was made in pears of fall and winter varieties, Flemish Beauty, Anjou, Louise Bonne de Jersey, Fall Butter, Boussacks, and many other kinds were exhibited, perfect in form, coloring and flavor. Some plates of quinces grown on Salt Spring Island by Messrs. Beddis Bros. were remarkably large and handsome. Choice grapes were shown both from the coast and interior districts—well ripened and of good flavor. In plums and peaches there was not much competition, most varieties being past their season, but fine specimens of Italian prunes were shown.

Superintendent Sharpe, of the Experimental Farm, had on view an immense collection of fruit in apples, peaches, grapes, etc., besides walnuts, chestnuts, and medlars, despite the fact that a number of plates intended for the exhibition were lost in the big fire which swept away so much of the city, showing plates of more than 300 varieties.

ROOTS AND VEGETABLES.

In the classes for field roots and vegetables there was a smaller showing than last year, partly owing to the dry season, but in a large measure because the finest specimens were reserved for the district exhibits previously referred to. Eastern visitors were astonished at the size and quality of the roots shown, and in regard to the fruit the opinion was freely expressed that it surpassed in size and appearance that seen at prominent eastern exhibitions.

MINERALS.

By many the display shown in the Mineral Hall was considered the best thing of the fair. It included specimens of ore from the mining camps of the Slooan, Ainsworth, and Lardeau Districts, all classified and labeled, sent down by the Kaslo Board of Trade. East Kootenay, Rossland, Kamloops, Lillooet, the mining districts of Pitt Lake, Taxada, and Vancouver Island all contributed their quota and helped to make the exhibit a leading feature of the fair. The results of assays made and attached to the samples rendered them especially interesting.

The Live Stock Exhibit at the Omaha International Exposition.

On the whole, the display was disappointing, not that there was a lack of quality, but a lack of competition. This will appear more clearly when the various classes are under review. There are several causes tending to this end, the combination of which prevented a large exhibit. For instance, the first published report was to the effect that only medals or diplomas would be awarded; then when some \$35,000 was set aside for premiums, the grant was apparently so grudgingly made that some exhibitors, having the Chicago Fat Stock Show fiasco in their mind's eye, became suspicious that the prize money might not be forthcoming. Again, the \$25 per car "terminal charges" savored so much of extortion that others said, "Have me excused." Can you blame them, when after reaching Omaha it cost as much to be hauled within the gates as it did in freight from London to Chicago. It did seem as though the fairs were not all confined to the Midway. Another reason, most of the herds and flocks of the U. S. had met at one or more of the State Fairs. Some had taken their medicine and gone home, and others declined out of policy. The quality all round was phenomenal, if the competition was often weak.

HORSES.

were, perhaps, the weakest of the stock exhibit, both as regards quality and numbers. N. P. Clark, Minn., showed a strong string of *Clydesdales*. They were brought out in the pink of condition, and great praise is due the stud groom. First in aged class went to The Abbot, by Goldenbury, dam a McGregor mare, a big fellow, with plenty of bone and quality of feather, not quite so nicely turned as Broad Arrow 2nd, a son of McGregor, but with better action. Three-year-olds—Senator was properly placed ahead of the lately imp. Masher, a son of Scottish Prince (9673) and Sunflower (10815). This was not set down on the cards by the talent, but the judge, "Joe" Watson, was right. Standing Masher is a beautiful horse, with a better and more evenly balanced top than his conqueror, though lacking in feather at this time, as he has shed whatever he carried. He crosses the Atlantic with Royal and Highland honors upon his bridge, yet in the far West is found one to beat him on his merits—for Senator, by Baron's Pride (9122), dam Flossie of Snyland (10496), had not only more bone and feather, but with size was combined quality enough for a draft horse; but it was when put in motion that his right to first was

easily demonstrated, going evenly and true all round, both at walk and trot, with his hooks well together and in full command; it was not so hard a task as many thought to put the Senator first. In two-year-old class, 1st went to Prince Darnley, a quality sort, over Prince Mahomet, a bigger and built more on the lines of a draft horse; both sons of Prince Patrick, the Columbian winner, who, if he has proved a success in the stud, has up to now wasted his sweetness on the desert air, or perhaps the produce of his loins are doing hard labor in the Minnesota woods. They certainly have not created a sensation in the prizings, and though they win here there is nothing to beat. A fair yearling was, however, in evidence, having Lillie McGregor for dam. With such a mare a "Gipsy's" horse might succeed in getting a prizewinner. In mares, Lady Darnley had but a commoner to beat, and in two year-old class the prize went to another St. Patrick, not a "terror" by any means, but she was afterwards assigned the sweepstakes for best mare, The Abbot capturing the coveted purple in male classes.

SHIRES.

The competition was between Burgess & Sons and Iams, with the former in the lead. As the boys remarked, when Bob was showing his lot, "Bob's a dandy; you can't beat him!" His friend, Peter Hapley, renders it thusly: "Bob's an artist." He showed his artistic work again in the Percheron classes, much to the disgust of McLaughlin Bros. The other breeds call for no comment, as our Canadian readers are so little interested in them. In Hackneys, Burgess & Son were the only competitors, and in Suffolks, Peter Hapley showed a good lot.

CATTLE.

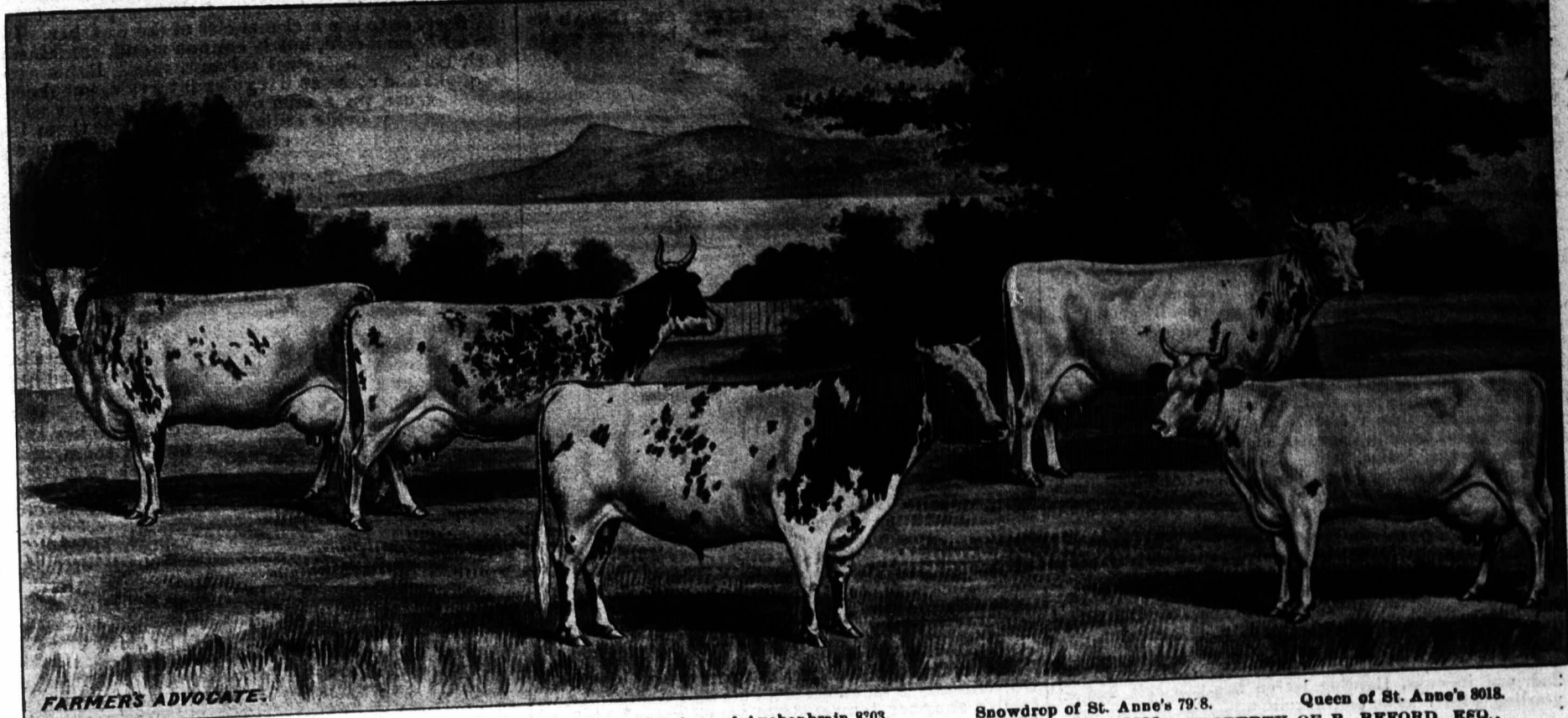
Shorthorns, by virtue of their superiority and ancient records, were assigned priority in the judging ring. The only two competitors in the aged bull class were the two Canadian-bred bulls, St. Valentine, bred by Jas Gardhouse & Son, by Guardsman 108200, dam Verbena's Lady, by

He is smoother, truer made, than his rival; has longer quarters, and is as thick on plates; he lacks on top of shoulder (not chine) and is inclined to roll a little, but not so much as the other—by inches longer, and in hind quarter truer made. Looking over St Valentine's pedigree, I notice that his g. dam is a daughter of Royal Windsor, a white. Well do I remember him, and a good one he was. He was by Windsor-Fitz-Windsor. In 1870, I accompanied Tom Booth to Carperby to see Mr. Willis' herd. Windsor-Fitz-Windsor, the bull in service, was led out. I remarked: "What a grand bull, but queer in his buttocks." Mr. Booth replied: "Yes, we call them vulgar." Our fathers said they were bottled-ended (that was not just the term, but it implies the same), and with it they associated the lairy, or double-laired, meat. We abhor it, and breed away from it as much as possible." And now the oracles proclaim that this same hind quarter, tabooed across the Atlantic years and years ago, is a Cruickshank characteristic. The Scotch cattle have enough faults to carry without being saddled with one with which they are unjustly charged as far as my observation goes. I may be wrong. Here let me add that a Guardhouse bull now heads my herd, so that I can't be accused of antipathy to the blood. Nominee, the Canadian champion, was bred by Gaunt & Sons, by Earl of Moray, out of a g dam by Baron Stanley, bred by writer, and son of 22nd Duke of Airdrie. This was a surprise when looking up the pedigree on return; and remembering Baron as a prizewinner, the thought may be pardoned if to Stanley some of the honors gained at Omaha may be ascribed. In two-year-olds, Mr Brown's Viscount of Anoka, bred by Geo. Harding & Son, Waukesha, Wis., was an easy first. A red-roan in color, and with that color a hide whose seal-like touch can only be associated with it. This touch had in connection a furry coat—the delight of an English judge, but one so seldom seen on this continent. Had the Hereford contingent dared to face the Shorthorns in sweepstake classes, he would have found in Nave's two-

up Devons that have been worshipped of late), not smooth enough for first honors at such a show as this where the main prizes were when the breeds would come in competition, but likely to prove a better matron than either placed ahead if bred to suitable bulls. Two year-olds call for no comment—there not being a real good one in the outfit. It was simply selecting the one which would be the most likely to win when in competition with the other breeds in sweepstake classes. The 1st went to Ward's Nora Valentine, a round-ribbed, thick, good heifer, lumpy at rumps and roughly-turned on back. She was thickly covered with flesh on loin, even if it was down—simply a matter of being overdone. The new lights probably don't know the difference, but there is such a thing as a weak loin with no flesh, and one that has not the convex arch, but is still well covered. Mr. Robbins informed the writer she was their favorite, and as breeder and feeder he ought to know. The scribblers went for the coarse, upstanding, free martin-looking four year-old—a gross misconception of what a two-year-old Shorthorn ought to be. Second was placed upon one bred by Westrop, a pretty little overdone creature—a trembling, jelly-like delicacy; touch her rumps, and a beautiful ripple might be noticed until it reached her ears, which gallantly responded! It reminded one of waves of ocean playfully coursing each other onto the beach. Yearlings and calves require no comment—not a good one in the whole lot. In all classes below cows the Canadian winners could have won 1st, 2nd and 3rd, and there were at least nine better calves at Toronto than at Omaha.

HEREFORDS

made the sensational show of the yard. The exhibitors in this class are enterprising, progressive and aggressive. The Hereford Breeders' Association supplemented the Exposition Company's prize offerings by \$3 000 dollars of their own money, which resulted in bringing out probably the strongest display of the breed ever seen in America. Nineteen of the



Lady Stirling 3rd 6230. Primrose of Holchouse 8300. Napoleon of Auchenbrain 8203. Snowdrop of St. Anne's 7918. Queen of St. Anne's 8018. FIRST PRIZE HERD OF AYRSHIRES AT TORONTO INDUSTRIAL EXHIBITION, AND WESTERN FAIR, LONDON, 1898. PROPERTY OF R. REFORD, ESQ., "TREDINNOC FARM," ST. ANNE DE BELLEVUE, QUEBEC. (FOR REVIEW OF HERD, SEE GOSSIP.)

Reporter, g. dam Imported Verbena, bred by Jno. Outhwaite, by Royal Windsor. Until I had a chance to look up the breeding on my return from Omaha, I knew not whither the awards were drifting. These records explain many things, amongst others the vulgar buttocks of St. Valentine, which put him back below Nominee. As most of your readers must be aware, St. Valentine and Nominee were the respective champions of the breed last year in U. S. and Canada respectively. St. Valentine is great in his depth and wealth of flesh and blubber, also breadth of breech—a and his butcher's block—one side even, the other very rough. His handler must be given credit for seldom allowing the latter to be in view. Nominee's strength is in his levelness, scale, and bloom—a breeder's model in breeding condition. As the critic of the newspaper brigade in the U. S. writes: "If ever Ewart presents him as richly furnished as is St. Valentine, his right to win will not be seriously discussed." Now, as the lead dog gives tongue the puppies respond. Now, where are we at? Bear in mind this is a breeders' class, ostensibly for breeding animals, and yet we are told if Ewart can get Nominee into the state of obesity that St. Valentine presented, he may win. What a farce! St. Valentine reminds one of the "gouty old commodore," for if he had not the gout, his legs and hocks were puffy, as not to be described as "overdone," but actually "gone." I to be abused for the decision. By whom? Men who never fed a winner, and who only know them over their office desks. Yet they "wade in." But I presume there is some method in their madness. When I say that the bull Ewart is told to get into show shape another year weighs 2,525 lbs. (official weight), against the wonderful 2,565 lbs. the age dictum falls to the ground. And if the wonder, with age in his favor, comes again next year and beats the present victor, I will give in to the pettyfoggers. But as they have damned him this year he will have a hard row to hoe next. To describe them: Nominee, in breeding condition, is active, and, as his blubber indicates, carries sufficient flesh.

year-old Dale a great competitor. The latter, smoother, closer to the ground, was an ideal butcher's animal, filled from nose to tail as full as a bologna sausage, and with as few lumps or holes; still, he lacked quality and size and aristocratic lineaments, whereas the Shorthorn was true over with each. It would have been a pretty fight—the odds a little in favor of the Hereford—the writer would certainly have put him sweepstakes Hereford. Westrop certainly have put him sweepstakes Hereford. Westrop was 2nd with a light roan; Young Abbotsburn 2nd, that has been described as coarse. His head certainly was, and chiseled out for a beauty show, but it was masculine, and in connection was to be found something of more consequence—a smooth and truer-made carcass than any placed behind. The Brown-red bull placed 3rd, Gold Dust, shown by Ward, was rough, lumpy, and lacked character; while the 4th, Courtier, bred by C. C. Norton, and shown by the Iowa Agricultural College Farm, for whom \$1,000 was refused, was simply in his work-day clothes and could not be guessed upon. Neither yearling nor calves require comment. At Toronto they would simply have been deigned with a glance. In the cow class, six put in an appearance. Mr. Brown's Spicy of Browndale was an easy winner. She was as though put on exhibition by some bicycle-tire manufacturer—to show how his tires could be filled without rupture—smooth to a fault; not even enough wrinkles or lumps were discerned to describe her as anything else; lacking in character, and tail nicked at steting on, describes her faults. She was Scotch, and one must not expect too much refinement. As Strafford used to say, "Theyavored more of the scullery than of the drawing-room." Ward was 2nd with Monarch's Lady, a roan, by Gay Monarch, such a sweet cow—"a lady"—until one got to her hips, then the glamor was gone. She was sadly lacking back of them. Third went to Andrews on the red three-year-old Cambridge Lass, a grand specimen of a Shorthorn, sired by a Bates-bred bull, and tracing to imp. Margaret, by Snowball (not one of these little dumped-

leading herds from six of the great Western States were represented, and, with the exception of the section for aged bulls, which had only two entries, every ring in the class was well filled with high-class animals brought out in splendid condition. Sotham's Sir Bredwell was placed first in the competition for aged bulls, and Funkhouser's Free Lance second. The sensation of the class was the competition in the two-year-old ring of bulls, which brought a remarkable display of grand animals. Mr. Nave's Dale 66481, a phenomenally good one, who had beaten Sir Bredwell in the class for three-year-olds at Springfield, but was eligible for the two-year old ring under the rules for computing ages here, was a clean winner in a great class, and, as before intimated, was our favorite for sweepstakes, an honor, however, which by the grace of the judge fell to Sir Bredwell. Sotham's Thicket was second, and Peott & March's well. Sotham's Thicket in yearling bulls, 1st went to Steward Hesiod 29th third, Courtier, bred by C. C. Norton, and & Hutchison on Bovie, 2nd to Van Natta on Lincoln, and 3rd to Cross on Climax. A splendid class of 17 cows was forward, and Funkhouser found the 1st prize winner in his sonnie Dewdrop, by Hesiod 2nd, the 2nd place being given to Cross' Beau Real's Maid, and 3rd to Nave's Atoka. Eleven two-year-old heifers competed, and the winner was found in Nave's Dolly 5th by Java, a brother of Jack, the champion steer at Chicago last year and 1st in his class at Brantford. Cross had the 1st prize yearling in Diana, by Archibald 5th, the winning calf on the circuit last year. Nave won the senior herd prize, with Funkhouser 2nd and Sotham 3rd. There were 8 entries in the competition for the young herd prizes—a most interesting show, in which Funkhouser was placed 1st, Cross 2nd, and Sotham 3rd. Sotham won for the get of one sire on the progeny of Cor-rector; and also on the best pair of either sex, produce of one cow, with Sir Bredwell and Pensico; and the same exhibitor had the sweepstakes bull in Sir Bredwell. Funkhouser's Dewdrop was made champion female. The class was well judged by Claude Makin, of Kansas.

As in the Shorthorn classes, there were two types, which gave no end of trouble to the judges. Outsiders chatter and give their opinions very freely, but endow them with the ermine and they would be found to be human. Makin was severely criticised by the men in the barns, but without reason.

In the sweepstakes classes, open to all beef breeds, we came together as judges, and never have two men met whose opinions so closely coincided. On only three occasions was the referee called in, and then in placing 3 or 4 positions. In cows, the 5 were placed unanimously, and this without consultation, as in all the classes. Aged bull—Shorthorn 1st, Angus 2nd and 3rd. Two-year-old bull—Shorthorn winner. One-year-old—Angus 1st and 2nd, Galloway 3rd. Bull calves—Shorthorn 1st, Angus 2nd, Galloway 3rd. Cows—Shorthorn 1st, Hereford 2nd (the same position she occupied in class), Galloway 3rd. Yearlings—Hereford 1st, Angus 2nd and 3rd. Calves—Angus 1st, 2nd and 3rd, Hereford 4th, Shorthorn 5th. Herds—Shorthorn 1st, Hereford 2nd, Angus 3rd and 4th, Galloway 5th. Young herds—Angus 1st, Hereford 2nd, Angus 3rd, Shorthorn 4th.

To recapitulate, the record that Ontario has heretofore gained at the breeding grounds of this continent has been fully maintained at Omaha. The verdicts gained at the great Columbian have been fully sustained. At the latter there may have been the lucky chance, but when followed up by similar successes at Omaha the chance is removed and the fact seems actually demonstrated. Get out your herd books and work out the winning lines and you will corroborate what I have written.

POLLLED-ANGUS

made a very pretty exhibit, especially in the younger classes, seven herds being represented.

THE DAIRY BREEDS.

As regards the dairy breeds, I have to plead a lack of time to prepare a review at this hurried moment, being in a rush to catch next issue. In Jerseys, Miller & Sibley, Pa., and Robbins, Ind., were the principal contestants, honors going to the former. This was a very interesting exhibit, and the awards were closely followed. It is worthy of note, however, that the 1st prize aged bull here was second at Toronto, and the 2nd prize cow at Omaha got no place in the prize list at Toronto. Holsteins made a very fine show, Stevens & Sons, of N. Y., and Chapwell, of Iowa, being the principal exhibitors, honors going mainly to the former, including the senior herd prize—the produce of a cow, the get of a bull, and the champion female.

SHEEP.

Ootswolds had but two representatives to maintain the honor of the breed, but they were exceptionally well heeled, Harding pulling off the majority of the prizes for rams, with Watson (our Castlederg man) in full ory after the blue ribbons. In ewe classes, of the notabilities amongst the contestants must be mentioned Harding's imp. Bagnall ram, 1st in aged class, was a sheep of fine presence, who at the runner-up was Canadian bred. In the two year-old class a Canadian beat, our imp. Garne, a capital specimen, and one that has every appearance of being a good stud sheep. Yearlings—Harding presented two imp. sheep, each in better show condition than Watson's imp. Royal winner of last year, so well-known in Canadian showyards. In lamb class Watson was, of course, first. The one that in Canada had been placed second was here, however, ranked higher than the winner in Ontario. It is harder to keep a ram lamb up to the mark than older sheep, and I presume the best has gone stale. Ewes 3 years old—Watson 1st and 3rd, Harding 2nd. Two-year-old class produced an excellent display, Harding winning, with Watson a close 2nd, and had the decision been reversed no milk would have been spilled. Yearlings—Harding 1st and 2nd, with a Garne in lead and a Canadian a close 2nd; Watson got no higher than 3rd and 4th. In lambs, Watson had a pretty easy win with the Royal winner. The sweepstakes went on rams to Harding, 1st and 2nd, and in ewes, Harding 1st on two-year-olds, 2nd on yearling, with Watson 3rd, a lamb.

LINCOLNS.

Gibson & Walker won all firsts but one, and that in two-year-old ewes, to which they were entitled, and all seconds except aged ewes, where W. Oliver got in a second. Sweepstakes followed the class awards, and the same firm won six firsts and seconds in wether classes. It is unnecessary to go through this class, as they are so well-known to your readers who have followed the Canadian shows this season. There were no American competitors, so to Ontario belong all the glory.

LEICESTERS, HAMPSHIRE, AND SOUTHDOWNS

require no comment, no Canadians being interested and no competition. G. McKerrow showed a nice lot of Southdowns, but as there was no dispute he had a soft time.

OXFORDS

put up the best show ever seen on this continent, and within their ranks was found the champion male of the various mutton breeds, "Dick" Stone's sensational imported yearling; a grand sheep, and perhaps deserving the honor. As there were but two real competitors, Stone and McKerrow, our breeders are not particularly interested. McKerrow, however, found that "Dick" and "George" were a combination very hard to down, as others have done before now.

SHROPSHIRE.

These favorites made a capital exhibition; numbers were wanting, but quality was there in great evidence. The fight was between G. Allen and Ballinger, with the former winning most ribbons, though the latter showed a ewe that was a perfect model, except in size. T. Bradburn, a member of the English firm of that name, and a late importation, put in some of the most artistic work ever seen in an American showyard, and to his skill must be assigned the placing of the ewes. Enthusiastically exclaiming after the award was made (she was a Bradburn ewe), "Why, this ewe was made before I was born!" giving credit to the breeders of 40 years ago for the skill with which they were preparing the foundation of a sheep, the culmination of which was found in the cham-

panion ewe at the great Omaha International Show. In rams, G. Allen brought forward a Mansell, just one to make a fellow break the tenth commandment. There is something in these Mansell rams no other breeders seem to have the secret of supplying—size, substance and quality combined. He was sold to Mr. Dolph for \$350. Your readers are so little interested in these class competitions that I refrain from an extended report, especially as I have now occupied so much of your space. The fat class prizes were not awarded when I left; and neither were the awards made in Yorkshires, the only breed that Canadian exhibitors were interested in. Mr. J. Brethour felt, however, that the competition was not strong enough to keep him back, and reported business brisk and that he had sold over \$2 000 worth of Yorkshires.

RICHARD GIBSON.

Fall Care of Ewes and Lambs.

BY J. M'CAIG, PETERBORO.

Owing to the mixed character of farm work in the fall months, consisting as it does of plowing, root-picking, teaming, apple-picking, etc., fall feeding of stock is not always carefully attended to, and among the different kinds of stock, sheep, probably, are subject to greatest neglect at this time. Pigs are generally confined and easily attended morning, noon and night; cattle are housed and given a light feed night and morning; but sheep are left until the last, and frequently get no care until their food is covered by snow and they seek the barns themselves.

Sheep require both food and shelter at this season. In the first place, the quality of the grasses deteriorates as soon as they have been touched by the September frosts. The gain in quantity of grass by reason of the early fall rains is speedily followed by a loss in nutritive value. The soggy, frost-bitten tops are apt to produce indigestion. A nourishing field of rape is the best supplement to the meadow at this time of year, and though its value is fully recognized by good breeders, yet in ordinary cases it is the exception rather than the rule. It is peculiarly adapted to the taste and likewise to the digestive machinery of the sheep, which is very roomy. Rape is, besides, of the generous, luxuriant nature so suitable to ewes during the season of copulation, and tends to the production of a numerous fall of lambs. In the absence of this food a small grain ration should supplement the poorer grasses. The grain, which should be principally oats, is valuable not only for the nourishment it contains, but acts as a stimulant and tonic to the digestive processes. One small feed each day, early in the morning, is all that is necessary; the sharpness of the appetite should be broken before the paunch has been burdened by a heavy load of mist-covered dead grass. The dangers avoided by this care are indigestion and consequent breaking-down later in the season when the transition is made from fall to winter keep. The ewe will be noticed bleating continually and coughing in a succession of sharp, dry coughs. She will lose flesh and probably break down completely and die at lambing time. This happens more frequently with young ewes in lamb for the first time than with older ones. As the season advances and grass becomes scarcer as well as poorer in quality, hay should be given in small quantities besides. While there is any grass, little hay will be eaten. If the weather is warm, sheep will scarcely touch it, and little will be required until snow flies or until the temperature has sharpened and the ground is frozen for the greater part of the day.

Secondly, shelter is no less necessary than food. Our climate is an excessive one, and the transition from a summer temperature sometimes as high as 95 degrees to a winter one approaching 40 degrees below is more or less violent. The variation of temperature, however, is not the chief evil of our climate. Sheep will stand considerable heat as well as considerable cold. Wool is light and not much of an incumbrance in summer, and is a good protection in winter, owing to its being a poor conductor of heat. It prevents the escape of the natural heat of the body. The chief trouble is the rain. In the spring the rains do little harm, as they are followed or accompanied by a rapidly increasing heat and consequently by speedy evaporation. In the fall, however, evaporation is slight on account of the decreasing heat as the sun retreats south; consequently the ground becomes saturated and the rains and air become colder and colder as the season advances. The sheep are wet underfoot all the time and rest on a wet lair at night, except on very dry and well-drained uplands.

The enormous development of wool resulting from the improvement of the sheep likewise leads to discomfort in extreme wet weather. The art of the sheep-breeder has changed the covering of the sheep from hair to wool;—his art is just as necessary to preserve what he has gained. But the wool of the modern sheep will not shed water like the hair of the ancient one. It has frequently been observed that wool deteriorates when the sheep are neglected. A kind of kempy, hairy coat will project out past the under coat of wool proper, but this appearance of wool is interesting not alone as showing the effect of abandonment on the character of the fleece, but to show how the character of the fleece changes to meet conditions of exposure. Now, we do not want the character to change. We have developed in modern wool a commodity suited to our wants; therefore we must counteract the tendency to change by lessening exposure. The yolk of wool, it is true, together with the

animal oil found with it, sheds a good deal of rain, but even yolk is soluble, as is seen by its absence in the fleece immediately after sheep-washing, and by the effect of night damp on the exterior of the fleece. Sheep that are housed in summer develop large quantities of yolk, due, doubtless, partly to extra feeding, but not less so to the protection from rain, dew, etc. If yolk were developed extensively outside and developed more liberally the greater the exposure, we might argue that yolk was designed by nature as a protection to the skin. This is not the case. It is, rather, for the nourishment of the wool and for the prevention of its crotting by friction of the serrated fibers in the ordinary motions of the animal. From the fact that the yolk lying close to the skin is largely impervious to moisture in the form of perspiration from the inside is an evidence that it is some protection at least against the penetration of rain to the skin on the outside. Its value to this end is demonstrated by the extra hardness of the Merino against wet weather on account of the large quantity of yolk contained in the wool, and of the Down breeds compared to the long-wooled breeds for the same reason.

It is important to remember, nevertheless, that a sheep once chilled revives with difficulty. Its circulatory system is somewhat weak, and the quantity of blood relative to the weight of the carcass and the surface exposed much less than in the horse or cow. Significant corroboration of this weakness is furnished by the customary treatment of a sick ewe. If a ewe gets sick it is generally taken to mean that she is going to die, and it is thought useless to try to do anything for her. The progress of veterinary science will dispel this idea, but it shows the necessity of prevention, in the case of the sheep, against sickness. Too much has been written about the hardness of the sheep and its indifference to the inclemencies of the weather. It can withstand cold, but it cannot stand, combined with cold, the universal solvent, rain. Rains are frequent and come at irregular intervals, but there is no excuse for a man owning sheep at all who neglects to provide ordinary shelter for them in rough weather. The effects of neglect in respect to shelter are just as far-reaching as in the case of neglect of food. The tendency to catarrh, influenza and diarrhoea is greater on account of low condition brought on by exposure. The constitution of the fetus is likewise affected. Overfeeding may produce too vigorous and large offspring, and, consequently, danger to the ewe at parturition, but underfeeding and exposure mean feeble offspring; i. e., a condition of constitutional weakness which will cover the whole life of the lamb.

Lambs require perhaps more attention in the fall than ewes do. They have the same hardships to endure while still immature. The change of season, the loss of the milk of the dam, and the necessity of satisfying natural growth, makes the business of self-support a serious one for them, and the help they need will be greater at this time than at any other. They should have already learned to eat small quantities of grain before weaning, and should be kept in good heart by continuing the grain ration after weaning. Attention is of more consequence than the amount of feed, though it is perhaps true that at no time in the life of the sheep can food be invested in it with greater profit. A handful of dry oats in the morning and the same or a little more of crushed oats and peas mixed with bran in the evening is sufficient. Twice as much oats as peas (by weight) and bran equal in weight to the two is a good mixture. This ration will be still further improved and a fine bloom put on the lambs by the addition of a pint or less of ground oil-meal to the gallon of the mixture. Have them go into winter quarters in good vigor and they will go through on turnips and pea straw, with a light feed of hay in the morning. They should have a little grain for four or five weeks before going out in the spring to look after themselves. Put them on the scales in the fall when they are ready to enter your flock as the mature product of your skill and attention and see what you have. What has been said in regard to shelter for ewes applies, with suitable exceptions, to lambs. To sum up:

Ewes require extra food when the grass begins to suffer from frosts to preserve the tone of their own constitution and likewise to develop a strong fetus.

They require shelter from wet grounds and heavy rains to keep them from chilling and consequently from getting catarrh, influenza, etc.

The lambs require both shelter and extra food more than the ewes do, as they are to some extent delicate and immature. Extra food gives better returns in young animals than in old ones.

A New Sheep.

The *St. Paul Farmer* announces the introduction of a new breed of sheep, evolved by a Mr. Bell, of Minnesota, by a combination of Shropshire, Southdown and Lincoln blood. The introducer has christened his new breed the "North Stars," and "for both wool and mutton, with the ability to carry a profitable fleece until six years old, with oil enough to keep the life of the wool, but not enough to chill the sheep in winter. He thinks he has a breed without a rival."

Read our important Christmas Number and Premium Announcement in another column.

Professional Live Stock Exhibitors.

To the Editor FARMER'S ADVOCATE:

SIR,—Your September 15th issue is to hand, and I note your criticism of our Minnesota State Fair, and especially that part which seems to condemn the practice of throwing the Exhibition into the hands of professional showmen and herds, to the exclusion of the smaller but more practical breeders. While you are not very strong on this point, I think I can safely guess that your sympathies are in the opposite direction, and if so, and your conviction is strong enough, you cannot do better service to your country and people than to condemn in the strongest terms this pernicious practice. Our system of encouraging professional exhibitors to hunt the world over for the best specimens that money can buy, then load them up to excess with fat (utterly destroying their stamina and breeding qualities), to the exclusion of all honest breeders who will not prostitute themselves and their stock to this bad practice, is entirely wrong in principle and educates backwards and the very reverse from the proper lines.

We should allow our breeding herds to exhibit in healthy breeding condition, and all highly-fitted animals should be excluded. Let them exhibit in the fat stock class, where they belong and where their exhibit is not misleading but right to the point. I understand very well that such changes cannot be brought about in a day, or old established rules vanquished by a sweep of the hand, but the man who has the courage to condemn this evil practice and lead up to a reformation that will allow a good, practical, sensible breeder to exhibit stock of his own raising in that good, healthy breeding condition that will perpetuate their stamina and usefulness is entitled to and will receive the blessing of his patrons.

This matter has been agitated somewhat for the past several years by breeders, and even some journalists have referred to the matter cautiously, but all seem to be afraid to make the break. A year ago last September, at our State fair, I informally brought the matter to the attention of a company of breeders and journalists, including A. H. Saunders, of *The Breeder's Gazette*, and Maj. Wilcox, of *The Agriculturalist*. The ideas advanced met with hearty approval of the entire party. The latter two gentlemen the following week in their respective journals wrote very good articles on the subject, but the matter was finally dropped.

I was in California when elected President of our Agricultural Society and did not return until our premium list was made up, but through Col. Liggett, our Superintendent of Cattle Department, I had inserted on page 19 the following clause:

"In making awards in the beef classes, the judges are instructed to lay much stress on the evidence of superior breeding qualities. When animals show evidence of having been 'overdone' (overloaded with flesh to the evident injury of their breeding qualities) they are to be marked down accordingly. Judges on sweepstakes will give awards to the animals, herd or exhibit that they shall judge to be the best type or representative of its breed or class."

Perhaps this has done neither good nor harm except to agitate the subject, which I think it has done very effectually. I find a great many people thinking strongly along these lines, and it seems to me that all we want now is a Moses for the occasion. Will it be the *ADVOCATE*? At all events, it would please me very much to have its views on the subject.

JOHN COOPER,
President Minnesota State Agl. Soc.

EDITORIAL NOTE.—Our correspondent touches a point that does not affect our Canadian fairs to any great extent. We have no "professional showmen," as the term is understood in the States. Live stock exhibitors at Canadian fairs are all breeders, and the great majority of them are dependent upon their stock and farms for their living. We do not believe in excluding anyone from showing stock as long as they conduct their business honestly and according to the rules of the associations. The man who owns the best cattle is surely entitled to the honor of winning;—if of his own breeding so much the better; if purchased from others, then it is the breeder's lookout to get as much of the credit as possible, while the exhibitor gets the prize money. And right here is one of the benefits of the exhibition live-stock catalogue, which is one thing the Minnesota State fair should have. As to excluding from competition "all highly-fitted animals," the difficulty is to draw the line between that which is "overdone" and that which is just "ripe." What one would call "healthy breeding condition" another would consider too, thin for even the barnyard. Then,

again, young animals may be put into much higher flesh without injuring their breeding qualities than older animals. Where should the age line be drawn?

It certainly is not right to give animals fitted so that their usefulness as breeders is ruined prizes over others in prime breeding condition. Good judges almost invariably pass over those animals that show overfitting in favor of those retaining their usefulness if otherwise worthy. It is hardly in the province of the *FARMER'S ADVOCATE* to make suggestions to the management of the Minnesota State Fair, but we believe a revision of the prize list, the introduction of a properly compiled live-stock catalogue, a judging arena where all stock judging would take place at certain advertised hours, so that the public might get some benefit and comfort out of watching the work done, would tend very greatly to increase the interest and number of exhibitors. The prize list does not now give chances enough for the small breeder and beginner to win his expenses. Were the classification for the respective breeds made more liberal and less money wasted on competitions between breeds that, while good enough fun to look at, are of little practical benefit, greater competition might be looked for.

We shall be pleased to hear again from President Cooper or from others on the interesting subject of how, when, and where to draw the line between properly fitted and overfitted show stock.

kinds of pigs merely for that very reason. In this way a perfectly reputable herd may be quite unjustly suspected.

Again, it often requires considerable ingenuity on the part of a breeder to make a sale of an animal of one breed to an intending purchaser without having to somewhat decry the merits of the other breeds kept. Sometimes a buyer comes who has not made up his mind as to the breed of pig he wants to buy, and he is naturally confused among so many and probably ends by going off to some breeder who has only one breed, who can give definite reasons why he keeps that breed, and can point out its desirable features.

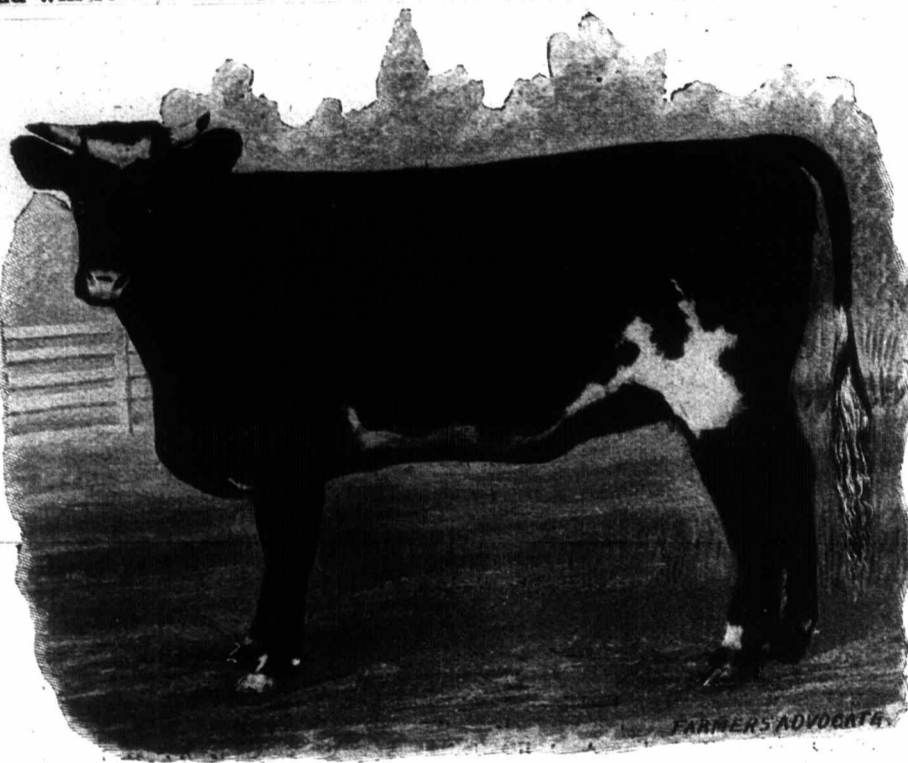
Such, Mr. Editor, are a few thoughts that have occurred to me. I am proud of your efforts and those of our breeders to keep up the standard of our flocks and herds, and trust that Canada will never be beaten in her struggle to be one of the principal producers of live stock for the Old Country markets. In my humble opinion our breeders will best work for this end by not dividing their efforts among too many breeds.

A LOVER OF LIVE STOCK.

The Breed Most Largely Represented at the Fairs, the Best Advertised.

Recently we took occasion to point out that a breeder showing good stock of a breed most numerously represented at an agricultural fair, even though he might take no prizes, was better advertised than though he had won all the prizes in a breed of which he was the only exhibitor. In a late issue of *Hoard's Dairyman*, reviewing the dairy stock at the Wisconsin State Fair, this same point is forcibly brought out in the following paragraph:

"The Holsteins were out in great force—eight different herds, comprising over 100 animals, being exhibited. This large display will be a great help in advertising this breed, by bringing them prominently to the notice of the public. Remarks similar to the following were frequently heard from the farmers in attendance: 'What lots of Holsteins! This breed must be gaining in favor with the dairymen over other dairy breeds.' Whether this is true or not, that impression was created in the minds of many in consequence of the large show. It surely pays to show good stock at the fairs, and let people see them. It is true that in this class all could not get premiums, and in some entire herds there was not a single prize drawn, although the stock was fairly good, but there were others that were adjudged—and no doubt rightly so—better. The man who shows his stock is a gainer by it, although he gets no premiums. He helps to swell the number and create the impression that they are the coming cattle. He also has an opportunity of comparing his stock with others that do win prizes, and if he has been unduly loaded down with conceit concerning the merits of his own stock, this will be a good, place to have that taken out of him, and he ought to go home from the fair a wiser man and with a determination to improve and climb toward the top."



TWO-YEAR-OLD SHORTHORN HEIFER, PEACHBLOW, WINNER OF FEMALE CHAMPIONSHIP OF THE BREED AT ST. JOHN AND HALIFAX EXHIBITIONS, 1898. BRED AND SHOWN BY F. G. BOVYER, GEORGETOWN, P. E. I.; NOW OWNED BY E. & O. CHASE, CORNWALLIS, N. S.

Handling More Than One Breed of Live Stock.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—During the past fall I have had the privilege of attending some of the largest exhibitions in this country, and have been very pleased with the general excellence of the stock I have seen there. It is evident that with most of the exhibitors their work is a labor of love and that the breeds they handle are those in which they are especially interested. There is one point, however, in which I think some breeders are making a mistake, and that is in keeping more than one breed of any particular kind of live stock. This was most noticeable among the swine exhibitors, some of whom had as many as three breeds on exhibition.

Now, I have no axe to grind in this matter and am not interested in any particular breed, but I certainly consider that these breeders are not consulting their own interests when they handle so many breeds, especially when these breeds are of widely different types, as they often are. I contend that one breed of swine, properly attended to and judiciously advertised, will bring in better returns to a breeder than three that have had the attention that should have been given to one.

Then there is the serious risk of animals of the different breeds getting intermingled and crossing resulting. Accidents will happen in the best regulated families. A chance visitor may leave a door or gate open, and great damage can be done before the omission is noticed. Even if no such accidents occur, the mere fact that a breeder has more than one breed in his pens is apt to cause suspicion that crossing may have taken place, and I have oftentimes known intending buyers decline to visit the establishment of a breeder of several

FARM.**Nutritive Properties of Oats.**

M. Balland is head of the chemical department of the alimentary section of the French army; he tests all food supplies, so he is the ablest authority in France upon organic chemistry. He is occupied with, among other cereals, oats, and has laid before the Academy of Sciences an exhaustive monograph on that grain. His papers lead to most interesting discussions by the ablest authorities of the day. He has just completed analyses of 1,000 samples of oats, grown in different regions and upon various soils. He desired to settle the question so disputed since a score of years: To what is the exciting, stimulating or fiery principle in oats to be attributed? To an alkaloid, asserted many, lodged in the pellicle sheathing the kernel of the grain. M. Balland could find no such alkaloid; but he discovered a small quantity of essential oil that could explain the stimulating property. Oats, he affirms, form a complete food, contain never less than 3 and as much as 7 per cent. of fatty matters; the starch or saccharine substances varied from 61 to 64 per cent., and the nitrogenous from 7 to 14. One hundred grains of oats varied in weight from 1.80 to 4.32 grammes, and there are 30 grammes in an ounce. The kernel forms from 61 to 74 per cent. of the grain. The shell is very hard and difficult to masticate—hence the advantage of bruising for rations. It is an error to judge of oats by their color. The white oats of many countries—those of Russia, for example—are most nutritive. In France the proportion of kernel is less in white than in black Tartary oats.

Overgrown Fall Wheat.

A number of enquiries having reached this office asking for advice as to the best treatment to be given fall wheat which has grown too heavy a top and will be liable to rot under the snow during the winter. We have referred the question to a number of practical wheat-growers in different sections of Ontario, and the replies received so far we publish below:

"As to the best means to adopt in cases where the fall wheat has attained too rank a growth: In my experience there is very little gained in pasturing it. Sheep eat it too close to the ground in places, and those places are sure to get killed by the frost in the winter, and to turn on horses or cattle, they being so heavy, much of it would get destroyed on account of the soft condition of the land at this time of the year. Calves or turkeys would be better than either of the above, but would not be practicable where any quantity of wheat is grown. Mowing wheat in the fall has proved a failure, with me at least. I have been taught by sad experience that it is not safe to sow fall wheat until the 1st September, and if summer-fallow, from the 5th to the 10th.

YORK CO. SIMPSON RENNIE."

"I have never done anything to remove the growth of wheat during the fall, neither would I if I lived in regions where the snowfall was light. If it is desirable to remove some of the growth, I think the best way, perhaps, is to pasture it with calves and young cattle, and if the weather and soil is dry any kind of cattle will answer. I have seen sheep on fall wheat, but there is an objection to sheep: they eat it too close to the heart of the plant.

BRUCE CO.

"I have known wheat as large as you say, but never knew of any bad results. The only trouble is, where heavy falls of snow occur and remain through the winter, it is liable to smother, and if a long, wet spring follows sometimes rots off at the ground. Would, where practicable, prefer pasturing off close in winter, as the frozen ground would prevent stock leaving deep tracks in the soil. Would also be a good practice where stock is kept confined through the long winter. Have seen it mown, but the cut blades should be taken away unless there is weather to dry up the mulch.

BRUCE CO.

"In regard to fall wheat, I like a good heavy growth before winter, as long as it spreads down, but when it shoots up very high I would turn on calves or some light animals that won't poach the ground.

MIDDLESEX CO.

Maritime Notes.

THE NEEDS OF SHEEP-RAISING.

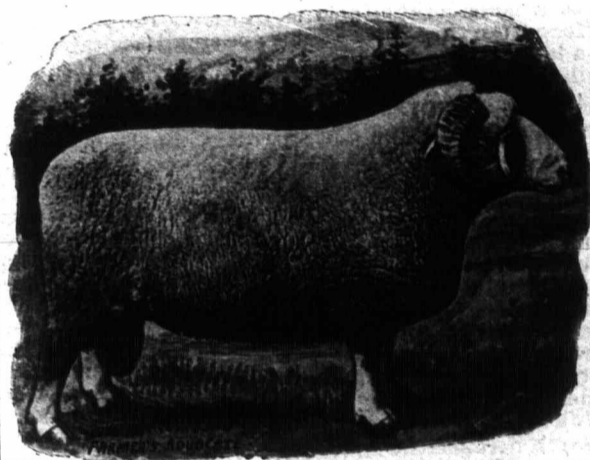
In the market reports of your last two issues the price of lambs is quoted at from 4 to 4 1/2 cents per pound. This is in marked contrast with here, where 2 1/2 cents is the ruling price and 3 cents the outside. This last is received only in exceptional cases when a buyer wishes to complete a carload in a hurry. This, it seems to me, is just the reverse of what it should be. The closer we get to the best markets the higher the price should be. Yet here we are, close to the sea and good shipping ports, and not a single animal of ours ever reaches the English market. Our buyers all cater to the United States markets, which entails a long railway haul and the payment of a heavy duty. No attempt is being made to reach that best of all markets—the English. I think it would pay Upper Canadian sheep buyers to visit the Maritime Provinces in the fall, during September and October; that there would be money in it for them, and that in the course of a few years it would result in an immense improvement in our flocks and methods of management. It is a fact that at the present time our sheep are mostly scrubs and that it is hard to pick up an even-looking lot. Some are white and some are black, while others are a mixture of both colors; some have horns, some have none; while a few show signs of good breeding. While there are a good many small, light lambs, the majority are of good size and weight, and which should partly offset their many faults, they are exceptionally fine eating. Improvement is greatly needed, but so long as our present market is our only one improvement is bound to be slow. Nothing so tends to retard progress in any branch of farming as a poor and indiscriminating market. Given a fair price, and a market that discriminates closely between good and bad, and improvement is bound to be rapid, as only those who will cater to its demands can obtain a share of its trade. The easiest and cheapest way to improve our present flocks is by the use of pure-bred rams. By keeping the best of the ewe lambs for breeding purposes and changing the sire every third year a flock can in a few years be made practically pure-bred. A great fault in our present system of management (or lack of system) is that we leave the lambs too long with the ewes and that we market them too early, thereby losing the increased growth they are capable of making. A much better way would be to take them from the ewes about the first of September and give them the run of a good piece of grass or clover, and if a piece of rape or turnips could be added so much the better. Two months of such feeding should give a very substantial gain at a very small cost.

NEW BRUNSWICK DAIRYING.

In view of the fact that cheese factories have proved such a failure in this county it is interesting to read the following, which appeared in the St. John Sun, and refers to Sussex, in King's County, New Brunswick:

"The development of the dairy has done much for Sussex. There are now over twenty cheese factories within a radius of twenty miles, and the farmers are generally paying much attention to this new source of revenue. Farms that twenty or thirty years ago carried only six or eight or ten cows are now stocked well up to the hundred. One illustration told to the Sun by a resident of Sussex on Saturday is right to the point. Seven years ago, in consequence of the changed conditions of an estate, it became necessary to look closely into the value of its securities. Among these securities were mortgages on eight farms that, as things then stood, would not realize the face value of the claim. To-day, however, these very farms are clear of incumbrance and are valuable pieces of property. A few years ago, said another gentleman, you could buy all the cows you wanted for \$8 to \$12 a head. Now you will have to pay from \$20 to \$40 each for them, according to quality. All roads that lead into Sussex pass through fertile territory, and herein Sussex has the advantage over the great majority of maritime towns which lie on the border rather than in the center of a rich farming region. Take the case of Waterford, which when the lumber business dropped out had apparently nothing but a hard future before it. Thanks to the advance in dairying, it has now the largest cheese factory, save one in King's County, and its bleak hillsides afford the very best pasture. There are three times as many cows in Waterford to-day as there were four or five years ago."

What has made this great difference in results—failure in one case, success in the other? It would



Prizewinning Dorset Horned Ram.

Dorset Horned Ram, Lord Nelson, No 355, Continental Dorset Club; bred by Mr. H. McCalmont, Bishopwood Estate, England. Lambled autumn of 1896, and imported by his present owner, R. H. Harding, Thorndale, Ont., 1898. He won second premium at Toronto, being beaten by the Royal (Eng.) winner, and first at London exhibitions.

be a splendid lesson if the working of the factories in the two districts could be compared. In Sussex, I believe, the factories are worked on the co-operative system; here the milk was purchased outright by the manufacturer. This last is a poor system to begin with, yet it might have succeeded if both manufacturer and patron had co-operated to make it a success; but the manufacturers tried to make cheap cheese rather than good cheese cheaply, and the patron, through bad farming, did not keep the supply of milk up to what it should have been. The consequence was that the cheese sold low and the manufacturer lost,—the price of milk was cut down, and the farmer kicked.

THE APPLE TRADE.

The first shipment of nearly 10,000 barrels of apples from Nova Scotia to the London market netted the shippers from \$1 to \$1.50 per barrel, and advises state that winter apples will be higher than at any time in the history of the trade. If this be so, this will be the exceptional year for which the Annapolis Valley fruit-grower always prays but which he seldom gets, viz., one that combines a large crop and good prices. As the fruit trade of Nova Scotia increases, Ontario buyers are bound to have a share of it. Mr. Onderdonk, of Ontario, is now buying in the Valley, and Mr. Stewart, representing Williamson & Carmichael, of London, Ont., is there in the interests of his house. They have sent out buyers and are to build a cold storage warehouse at Richmond. AGRICOLA. Antigonish Co., N. S.

The returns to the British Board of Agriculture show that during the week ended October 15th there were 31 outbreaks of swine fever, involving the slaughter of 306 pigs, against 23 and 307 in the corresponding week last year. The number of outbreaks of anthrax was 7, attacking 7 animals, against 7 and 14 last year; and of glanders 11 outbreaks, attacking 22 animals, against 19 and 32 in 1897.

A Day at the Iowa Agricultural College.

To the Editor FARMER'S ADVOCATE:

SIR,—In response to an invitation issued by the President and Board of Trustees, a large crowd gathered at the College, Ames, Ia., on Oct. 4th, 1898. Ames is a thriving town situated about the center of the State, and is connected with the College by a steam motor line. The College and farm lands embrace some 900 acres, 100 acres of which are used for a campus, walks and groves. There are over 500 students in attendance at the present time. Similar to other institutions in the U. S., the college has departments of literature, science, agriculture (including horticulture, dairying, and live stock), veterinary medicine, domestic economy, engineering, and music; in fact, the Iowa State College is one of the strongest pieces of evidence that the people of the great Republic are firm believers in technical education; in fact, the great object here is to turn out well-trained, brainy working men and women. The large crowd wandered through the various fine, well-equipped buildings which dot the campus. Margaret Hall, the School of Domestic Economy, is a fine new building where the girls get a thorough course in needlework, cooking and preparing of dietaries, and other branches of domestic science—all from practical and scientific standpoints. The Mechanical Department, from whence are turned out engineers and electricians, was also inspected. This Department has a large equipment, the electric light plant, which illuminates the various buildings and offices, being under the control of this department. In the Veterinary Department are fine laboratories and anatomical models, with a hospital equipped to date. It is, however, in the Agricultural Department, along with the Experimental Department, where the chief interest lies. Besides the college proper, there is a large creamery in connection with this department. There are the necessary classrooms, etc., and a variety of live stock which leaves nothing to be desired. Horses, cattle, sheep, and pigs—different breeds of each—are here handled and tested, affording a splendid observation-ground for the students. The teaching is done by experts, such as Curtiss and Craig in live stock, Mackay and Eckles in dairying. Probably as good a criterion of the work done at the I. S. C. is the record of her students. In engineering, national distinction has fallen to her graduates. Most of her veterinary graduates are enjoying good positions, either as inspectors under the Federal Government or else as State veterinarians or teachers in colleges; while in dairying the collection of gold medals and other trophies won in strong competition is irrefutable testimony of the excellence of the training afforded here. The writer was particularly struck when passing through the stock barns with what might be called "dual purpose" cattle, and for the benefit of your readers I subjoin a few of the individual records placarded in the barn for the benefit of the visitors. Cow No. 1, a Shorthorn, tested for thirteen months, gave 9,136 pounds of milk testing 3.79 butter-fat, yielding in the thirteen months 404 pounds of butter; cost of feed, \$25; average cost of one pound butter, 6.2 cents; net profit, \$45.60. Cow No. 2, a Shorthorn grade: Duration of test, eleven months; milk given, 6,164 pounds, testing 4.71 butter-fat; butter yield, 338.7 pounds; cost of feed, \$20.68 cents; net profit, \$35.43—pretty good for a grade, you will say. Cow No. 3, tested eleven months; milk obtained, 7,464 pounds, testing 3.59 per cent. butter-fat; cost of feed, \$20.50; average cost one pound butter, 6.8 cents; net profit, \$28.60. Cow No. 4, tested for twelve months; milk yield, 7,113 pounds, testing 3.71 per cent. butter-fat; butter obtained, 308 pounds; cost of feed, \$27.02; average cost of butter per pound, 8.9 cents; net profit, \$27.73. These figures refer to Shorthorns and their grades. Probably if I had scanned the special dairy breeds something larger would be the result. The records stated were not specially selected by the writer. The following will give an idea of the feed, and cost of it, given to Cow No. 1. This cow, a pure Shorthorn, yielded over 400 pounds of butter in thirteen months, and makes up into beef condition when dry.

ONE WEEK IN JANUARY—STABLED.

Table with columns: Amount, Cost, Dry matter, Nutritive ratio, Feed left, Milk, morning, Milk, night. Includes items like Hay, Sheaf oats, Snapped corn, Barley meal, Sugar beets, and feed costs.

Cost of feed, \$.524. Milk tested 4 1/2 b.-f.; Butter obtained, 9.07 lbs., worth \$1.50; cost of 1 lb. of butter, \$.558; profit, \$1.01.

ONE WEEK IN MAY—PASTURE.

Table with columns: Amount, Cost, Milk obtained—Morning, Night, Testing, Fat yield, Butter. Includes items like Bran, Gluten meal, and Pasture.

Cost of 1 lbs. of butter, \$.036; value of butter, \$1.015; profit, \$.745.

Various tests are being conducted in field agriculture, live stock, and dairying. The make of the creamery is shipped to Great Britain, where it sells, and sometimes outsells the best Danish butter. Our Canadian dairymen have their work cut out for them to beat the dairymen here, and it will not do for Canadians to rest content with laurels won in cheesemaking. Iowa is fairly swarming with creameries, and as a consequence her butter is uniform and of good quality, and is called for in the markets.

After the inspection of the various departments the people congregated in a very large tent to listen to notable speakers and the College Cadet Band. Supt. of Public Instruction Barrett was the first speaker, who impressed upon his hearers the claims of and necessity of an agricultural college, stating he invariably recommended the agricultural college to his teachers and their pupils, and expressed the opinion that the townward tide of our young people would be stemmed by the education imparted by the agricultural college. Judge Leeds followed and in a humorous speech prescribed the Domestic Economy course as a remedy for the townward trend of the young people of the farm. Editor Wallace, of *Wallace's Farmer*, appealed to the audience to give their boys and girls a chance by giving them a course of training at the Agricultural College. Professor Henry, of the Wisconsin Agricultural College, placed the matter of agricultural colleges and schools before the farmers, telling them they should not begrudge liberal help to such institutions, as they would be more than repaid for any such expenditure, and stated that true economy in governments consisted in a judicious expenditure of money by that government. Speaking with Professor Henry at another time, the writer elicited the fact that students were directly benefited by a course in agriculture, the Professor citing case after case of his own students who were financially benefited, either as farmers on their own account or as employees of others. Such evidence effectually disposes of any cavilling on the subject from farmers or their would-be advisers. The Professor distinctly stated that none of the cases cited were teachers or professors in agriculture, but went right to work on the farm. The advantages accruing from having an agricultural college or school within reach of the farming community are evident to anyone who comes in contact with the people of this country and the professors of such institutions. As the land is continually cropped year after year, and as competition in the markets of the world gets keener and keener, scientific practical work will have to be done by Canadians, and especially Manitobans, if they wish to hold the best positions, either as agriculturists, dairymen or stockmen. Such being the case, an agricultural college or school is indispensable to Manitoba.

Iowa Agricultural College. A. G. HOPKINS.

Removing Large Stones from the Ground.

On many farms there are to be found large bowlders whose tops are either just visible above the ground or have a slight covering of soil, not quite deep enough to keep the plow point from striking them every time the field is plowed. These rocks are a nuisance to cultivation and are often responsible for injuries to implements, and yet they are left because the farmer does not wish to spend much time in their removal. Many of them are too large for a team to move, even supposing that they were on the top of the ground, but they can be split and made small enough for easy removal without any great expense except the loss of time taken in digging round them.

Some people get rid of these big bowlders temporarily by digging a hole to one side of them somewhat deeper than the bottom of the rocks, then, digging around them sufficiently to get a chain around, a team is hitched on and the stones rolled into the newly-dug holes. This, however, is only deferring the evil day, as in time they will once more work up to the surface. Another way is to dig all round the stone, drill a hole in it, insert a charge of powder and blow it to pieces; or dynamite could be used for the same purpose.

The simplest and cheapest way, however, is to dig all round the stone and just as far in depth as is sufficient to show that the bottom is not far off. Then fill in all round and on top with old rails, stumps, trash, etc.,—anything, in fact, that wants burning up and that will make a hot fire. Set fire to the pile, and when it has pretty well burned down have half a dozen pails of water ready and pour them on the stone from all quarters. You will be surprised to see how the stone will chip and crack across into pieces which can be easily handled by a team. A crowbar to pry the pieces apart is generally all that is necessary to prepare the stone for the team to draw out, but sometimes, if the fire has not been hot enough, a beetle and a couple of iron wedges will be found useful to extend the cracks so that the chain can be put round the sections.

DAIRY.

Moisture and Temperature in Cheese Curing.

Following is a synopsis of the results of experimental work conducted under the direction of Mr. J. A. Ruddick at the Eastern Dairy School, Kingston, Ont., during the past season:—

1. THE EFFECT OF DIFFERENT DEGREES OF MOISTURE ON THE SHRINKAGE OF CHEESE.

During the month of May this year (when the test was undertaken) the average relative humidity was 82 per cent. in the curing room, while the records show that it frequently goes as low as 66 to 70, being the lowest of any month in the year. We have been unable, then, to give the results of a low percentage of moisture and are confined to a comparison

between what is about normal and a very high per cent. of moisture or relative humidity. Cheese from the same batches were placed in Room A, with an average humidity of 95 per cent. on the one hand, and in Room B, with an average of 82 per cent. of relative humidity. Cheese in Room A lost 1.73 per cent. in weight in three weeks, while those in Room B lost 2.57 per cent. The temperature was the same in both rooms. Moisture was artificially supplied to Room A (see sec. 6). Cheese moulded badly in Room A, but did not in Room B.

2. THE EFFECT OF DIFFERENT DEGREES OF MOISTURE AND TEMPERATURE IN CURING ROOM ON SHRINKAGE AND QUALITY OF CHEESE.

	Room A.	Room B.	Room C.
Size of room in cub. ft.	780	780	780
Method of controlling temperature.	Ice	Sub-earth duct	No control
Lbs. of ice used per day	100-150		
Method of controlling moisture	Wet sheet suspended	Sub-earth duct	Lime.
Average temperature.	65	68	80
Av. relative humidity	95	81	68
Av. shrinkage of cheese	2.53	2.59	3.63
Quality cheese, points scored.	98	97	90
Duration of test.	18 days	18 days	18 days

A glance at the above table will show that the shrinkage was the same in Rooms A and B, but much more in Room C. The cheese moulded freely in Room A, very slightly in Room B, and not at all in Room C. The difference in quality was very marked. The cheese in Rooms A and B were practically the same and showed a clean, cool flavor, but those in Room C were decidedly off flavor.

3. SUB-EARTH DUCT VS. ICE FOR CONTROLLING TEMPERATURE.

Table 1 shows that Room A, with 100 to 150 lbs. of ice per day, was a little cooler than Room B with the sub-earth duct. The shrinkage of the cheese was just the same, and there was no appreciable difference in quality. It would seem probable that the sub-earth duct, if properly constructed and used in connection with a well-built curing room having proper circulation of air, would be quite as effective as a considerable quantity of ice. It must not be forgotten that these rooms are small (see table). If a larger room were used more ice would be required in proportion to the size.

4. NOTES ON SUB-EARTH DUCT.

There are three curing rooms at the Kingston Dairy School. The sub-earth duct is connected only with one, which is called Room B. As all the rooms are exactly alike, it is easy to make comparisons. The duct is 150 feet long and consists of an 8-inch unglazed tile, same as used for draining land. The intake is 12 feet high, with a wind cow which always faces the wind. Above ground it is made of galvanized iron. There is a tight connection where it joins the building, and it enters the room through an ordinary hot-air register with a valve. It is placed 6 feet below the surface, and beneath the duct is a 2-inch tile to carry off the water. It was not possible to place the duct any deeper in the earth because the sewer into which it was drained was at that level. The duct kept the temperature in Room B 6 to 8 degrees lower than the other rooms on the hottest days, and as much as 14 degrees lower than a room where there was no insulation and similar to a poorly-constructed curing room. The cheese moulded very slightly. Contrary to the experience of others, I found that the air, after coming through the duct, was often drier than it was outside or in the other rooms. This occurred on very warm, damp days when the air was almost saturated. Passing through the duct it was cooled to the dew point, consequently it lost some of the moisture. On being warmed somewhat after coming into the room the relative humidity was less than at first. The circulation of air was most rapid when a strong wind was blowing. It did not cease entirely even in a dead calm. When the circulation was slow the temperature of the air passing through the duct was lowered more, so that it was nearly as effective as when the wind was blowing. For a larger room I would recommend a larger duct. It might be constructed with several small tiles placed together.

5. PREVENTION OF MOULD ON CHEESE.

We have continued the use of formalin as an agent in preventing the growth of mould on cheese. The results are quite satisfactory. Spraying the cheese with a 25 per cent. solution of the formalin prevented any mould from growing for three weeks, while those not sprayed were covered with mould. After three weeks it was necessary to apply it again. [NOTE.—It must not be supposed that one application will be sufficient for an indefinite period.] One objection to the method is the labor and time involved in making the application. I think it is likely that some method will be devised whereby the effect will be secured by means of evaporation of the formalin, so that the air of the room will be charged to such an extent as to suppress the growth of the mould. Experiments have already demonstrated the practicability of such a method, but the work is not far enough advanced to warrant publication. We found the best time to spray was just after the cheese were placed on the shelves.

6. METHODS OF PROVIDING MOISTURE IN CURING ROOMS.

After trying several plans, we have adopted the one of suspending a linen sheet over a perforated water-pipe, regulating the flow of water by means of a valve. There must be a trough beneath the sheet to catch the drippings. The perforations will

work best if very small—mere pin points. Have the sheet double for a few inches at the end attached to the pipe, bring one piece up each side and fasten at the top. In this way the water must pass through the cloth, which facilitates saturation.

7. LIME AS AN ABSORBENT OF MOISTURE IN CURING ROOMS.

Although we used as much as one and a half bushels of fresh stone lime in one room (see size of room) it had no appreciable effect in reducing the moisture.

8. NOTES ON THE USE OF HYGROMETERS.

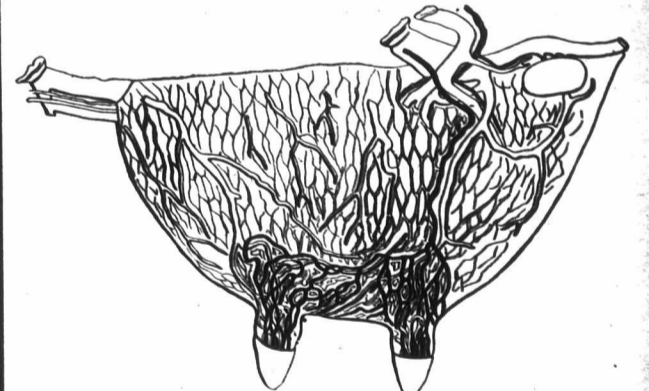
For determining the relative humidity in the curing rooms we use Mason's Standard Hygrometer, which is simply a "wet and dry bulb" thermometer. There is a so-called hygrometer on the market which consists of a small coil of some kind of fiber which is supposed to wind or unwind as the moisture in the room varies. The coil actuates an indicator which moves along a scale, thus showing the degrees of moisture. A comparison of these instruments with the "wet and dry bulb," which is accurate, if properly managed, shows them to be utterly unreliable. For example, at the present writing the relative humidity is 86 per cent. One of these patent instruments placed in the same room gives it as 91, while another makes it 64.

The Secretion of Milk.

The properties of milk, when once it has been drawn from the udder, are well known to us, thanks to the work of the analyst, its chief constituents being water, fat, casein, albumen, milk sugar, and mineral salts. This being so, very few persons, except those who are engaged in experimental work on the subject, trouble their heads as to how milk is formed in the udder of the female. Probably the difficulties in the way are the reason for this, inasmuch as this question has been a stumbling-block to investigators for years, and very little is even now really known about it. Many theories have been started regarding the origin of milk, which have been accepted more or less fully for a time, only to be upset a few years later by some more plausible theory, which, in its turn, succumbed to something more ingenious.

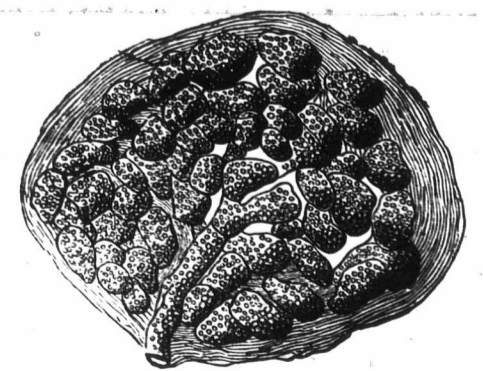
For instance, in the first half of this century it was believed that the milk-glands acted as a filter for certain constituents of the blood, and that the resulting filtered material changed into milk, the amount and quality of which was determined solely by the amount and quality of the food. Chemical research, however, showed that not one of the organic constituents of milk could be found ready formed in the blood, their source being in the milk-glands, and so this theory went the way of others which succeeded it.

But, although so little is known about the secretion of milk in the udder, nevertheless investigation has demonstrated several important points. The milk-glands, in which the milk originates, are the most important part of the udder as regards milk formation. The accompanying large cut,



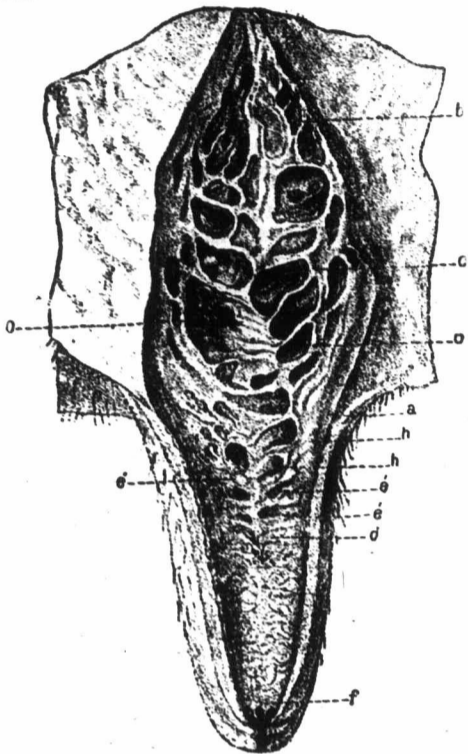
Left side of udder with skin removed, showing superficial arteries and veins, and the lymphatic vessels and nerves.

taken from Aikman & Wright's *Book of the Dairy*, to which work we are also indebted for the other illustrations of parts of the udder, shows the position of the milk-glands at the back part of the udder, together with the superficial arteries and veins and the lymphatic vessels and nerves. The udder of the cow has a strong fibrous partition, running lengthways, which divides it in half. In each half there is a milk gland of a reddish-gray color, which in full-grown cows varies from 9½ to 20½ inches in length, 6½ to 12½ inches in depth, and 4 to 8 inches in breadth. Each gland contains a number of gland-lobules, as shown in the small cut, all held together by a white tissue.



Gland-lobules, with outlet tube.

In these lobules are numerous round holes, which are the termini of a number of very fine ducts or canals. These little gland-lobules are only from 47-10000 to 78-10000 of an inch long and from 35 10000 to 43-10000 of an inch broad. The internal surface of this mass of cells has a further lining of cells in a single layer, which vary in form according to whether the animal is in milk or not. Outside the membrane of the gland-lobules is an extensive mass of capillary vessels, through which circulate, by means of numerous lymph-ducts and very slender nerve fibres, the substances to be turned into milk. These small ducts form junctions with one another and gradually widen out into what are known as milk-ducts, which terminate in the large cavities, called milk-cisterns or milk-reservoirs, four in num-



Milk-cistern and outlet tube of milk-gland laid open.—a, Basis of teat; b, upper end of milk-cistern; c, lower end of same and upper end of teat; d, dilation of canal of the teat; e, rosette on end of lower portion of canal of teat; f, small gland-duct; g, large gland-duct.

ber, which overlie the four principal teats of the cow. The average capacity of the two milk-glands of a cow, with that of the four milk-cisterns, runs from 10½ to 11½ pints after she has been milked. It is impossible, however, to estimate how much milk can be stored in the inside of the udder, on account of the elastic nature of the tissue which surrounds it. Everyone who has milked a cow knows how little milk there seems to be in a cow's udder when first taken hold of, how the handling of the teats stimulates the glands to produce to their fullest extent, and how often more milk is obtained than would seem warranted by the size of the udder.

All the most recent investigations seem to coincide with one another as to the important part played in milk secretion by the milk-glands. The amount given depends on the activity of this organ, subject to the quantity and quality of the food fed to the animal, and its state of health. Beyond this, very little can be said, except that it is probable that the milk-fat is derived partly from the fat in the blood and partly from the products of the changes that take place in the animal tissue. Future experiments may throw more light on this question.

Some Coming Creamery Apparatus.

The Pasteurizer.—This apparatus, as usually made, is a combination of a "scalding" and "cooling" in two separate pieces of machinery. The "Potts pasteurizer," however, is a complete pasteurizer in one article, and is the only pasteurizer with which we have acquaintance in which the milk or cream can be held at the desired temperature for a length of time before being cooled—really a basic principle in true pasteurization. This machine is not to our knowledge in use in Canada. The "Reid" pasteurizer, made in Philadelphia, Pa., and that made by R. A. Lister & Co., England, are the only pasteurizers suited to regular creamery practice that are used in this country. In the first-named apparatus the "scalding" is fed by gravitation from the receiving vat, itself raises the heated milk to the separating vat, when a pump is necessary to elevate the cream to the cooler over the cream vat. In the last-named, this is reversed. The milk is pumped into the heater (which elevates to the separators), the cream then runs into the "scalding," which itself elevates the cream to the "cooler" over the cream vat. If desired, a "turbine scalding" (operated and heated by steam jet) may be used in place of the heater, and a pump used to elevate the cream.

The Western Dairy School is the first institution to undertake this work on a large commercial basis. The results of the work now in progress there will be published at a future date.

The Ammonia Compressor.—The question of the cooling of cream in the vat, the preservation of any desired temperature in the churning and working room, and the insurance of a low and

uniform temperature in the storage room, are one and all solved by the use of this apparatus. That it will early displace ice for cold storage purposes, and that it stands immeasurably ahead of it for other purposes around a creamery, is quite certain. That all creameries of any pretensions to first-classness, and that operate the whole year, should install a compressor for refrigeration purposes, rather than ice, is not any longer a matter of doubt. In the erection of a new creamery that is likely to handle a considerable quantity of milk, the plans should include space for the compressor and for proper insulation, etc. The cost need not exceed \$1,000 to \$1,200 for the compressor, expansion coils, storage tank and all complete.

The Automatic Skim-milk Weigher.—We look upon this piece of apparatus as one of the most indispensable around a creamery. When first commencing operations, the management may get along without such fairly well, but it will *always* be found that, as drawers get careless, or as they get inclined to take more than the proper share for their patrons, induced by various reasons, that trouble will arise as certainly and as disastrously as effluvia from the fen.

But it can be weighed out. Not to complete satisfaction, as experience proves. If the drawers do the weighing, shortages will very soon occur. If the management finds a man to do it, they will early learn that the *daily* drain of even 25 cents per day to pay such help is a daily waste—an unnecessary outlay for which there is no adequate return. There is such a thing as an automatic skim-milk weigher made, that distributes with unerring exactness this valuable by-product, and which cannot be tampered with by drawers or patrons. While you weigh out the milk it weighs out the skim milk—patrons are *all* satisfied, and the management have thrown another band around their patronage. That creamery that carefully pasteurizes its skim milk, and as accurately distributes it, has made a great stride toward perfection and toward the strengthening of its foundations.

F. J. SLEIGHTHOLM,
Supt. W. D. School.

GARDEN AND ORCHARD

The Fruit Grower Looking Backwards.

BY M. BURRELL, LINCOLN CO., ONT.

This is the time of year when every man who has tried to pound a living out of the cold and silent earth can look back and criticize profitably his season's work. He must be a dull man, or almost a perfect farmer, who has not, after such a retrospective analysis, learnt "how not to do it," as well as something of the science of "how to do it." In some respects the farmer, by the very nature of his business, is in a harder position than the tradesman. The latter not only turns his money over more frequently, but there is an equally rapid turn over of "experiences." The mistake of this week he rectifies next week, and so on. The unfortunate farmer makes a mistake and ten to one he has to wait a whole year before he finds it out or can profit by the discovery. There is all the greater necessity for him to understand his business thoroughly and avoid making mistakes, which are often costly and sometimes almost ruinous. This may even be more forcibly applied to horticulturists, for a mistake in the location of an orchard or a weak yielding to the siren voice of the bland "tree man" will mean hard labor for years and ultimate disappointment. In cultivation alone it is surprising to find how little some people know of the philosophy of the subject, or knowing, do not practice.

We have come to look upon weeds as not only robbers of the soil's fertility, but as still greater robbers of the necessary moisture of the soil. Fruit, composed as it is of from 85 per cent. to 90 per cent. of water, usually has its work cut out to pump enough from the soil in a dry season, and yet not only do many of us neglect the constant stirring of the soil to prevent evaporation, but we let pigweed, lamb's-quarters, purslane, etc., rob us still further of the little store of water. Purslane, or "pusley," is a good illustration—one of the fattest, greediest, and most prolific of the whole crew. I once counted over 50,000 seeds in an adult "pusley," and what a succulent prospect it was to fight 10,000 or so little "pusleys" round that spot next year! Mr. Shutt, of the Central Farm, did some interesting analytical work on this same weed last year. About 93 per cent. of it was water, and the plot where it was allowed to grow yielded a weight equivalent to 15 tons to the acre. Of this 15 tons about 14 would be water, 65 pounds nitrogen, 198 pounds potash, and twenty-four pounds phosphoric acid. We may not grow "pusley" by the acre, but the moral is obvious. We keep the cultivator and hoes going steadily, and the drier the season the more we cultivate. Everybody who grows peaches knows that neglect in this matter spells f-a-i-l-u-r-e; but we don't realize it as strongly as we might in other fruits. I am aware that pear blight is slightly worse when pear trees are highly cultivated; nevertheless, the alternative of keeping pear orchards in sod has its drawbacks. Some of my trees are in sod; most of them cultivated. Orders came this year for a lot of first-class

Bartlett pears. Where did we find them—on the trees in sod? Scarcely a basket up to the requirements could we get from those trees, while we never had finer or larger fruit than in the cultivated orchard. Nor are the trees in sod neglected;—the grass was cut and a mulch afforded. On the whole, if I wanted fine pears I would cultivate thoroughly (though not too late in the season), and choose varieties not so subject to blight. Beurré Bosc, Beurré Clairgean, Seckel, Sheldon, Lawrence Keiffer, and probably Beurré D'Anjou, would all do. I would go a little easy on Bartlett, and eschew Clapp's Favorite, which are almost worse than any to blight. It is my conviction that there will be always a good market for such pears as Bosc, Clairgean, and D'Anjou, and a great deal can even yet be said on behalf of the much-abused Keiffer.

Spraying for the rot of the cherry was not quite so successful as we would like to have seen it this year. This monilia of cherry and plum spreads with frightful rapidity if climatic conditions are favorable, and spraying should not only be thorough, but very frequent. Just east of my barn is a signal illustration of the value of spraying to foliage. A small block of "Pond's Seedling" plum trees about eight years old was sprayed four times, with the exception of three trees. For the last three weeks these untreated trees have been in gloriously despoiled of their leaves—bare to every wind that blows. The sprayed trees are now (October 15th) almost as full of foliage as in mid-summer. Although the past season was not a very bad one for mildew of the grape, yet spraying amply repaid for the trouble and expense; varieties like Brighton and Roger 15 where sprayed, being far cleaner than the unsprayed vines. We make a point of doing each side of the row and doing it thoroughly. As to varieties, a good selection for commercial purposes is: *Blue*—Worden, Concord, and Roger 44; *Red*—Roger 9 (Lindley), Delaware, Vergennes, Wyoming Red; *White*—Delaware, Vergennes, Wyoming Red; though nothing that I know can equal Niagara, though Moore's Diamond will probably rank next. Wyoming Red is early and very prolific, throwing out a great number of laterals and often having four or five bunches on one shoot. It should be severely thinned. Quality is not high. The Brighton is one of the highest-flavored grapes we have, but its tenderness of skin, liability to mildew, and almost blue color when quite ripe, are grave defects. Vergennes is one of the best late red grapes, but needs severe pruning and generous treatment. The Worden, especially on heavy soils, is most desirable. It is a better grape than and outbears the Concord, and in spite of its thin skin will carry a long distance.

Why do not more people sow Crimson clover? In spite of one or two failures on some plots, I have done exceedingly well with it now for three successive years. A series of trials and experiments have convinced me that the end of July or very early in August is the best time to sow, and 20 to 25 pounds of seed to the acre is none too much. There is big money in plowing under the old strawberry beds after the fruit is off and seeding to Crimson clover. I never failed to get a good stand in such a place, and largely because our strawberry beds have been well supplied with potash and lime, and it is in such soils that the micro-organisms that store nitrogen in the clover roots flourish. This year a piece of oats of two acres was cut early for hay and the ground immediately plowed and seeded with Crimson clover. It is now a beautiful "mat" six inches high, and will be worth anyway \$15 an acre if it winters well. Even if plowed under this fall it is worth half that sum, and, after all, if a crop will pay you two or three hundred per cent. on the outlay you can hardly kick because it doesn't do more.

It will soon be time for fixing up for the winter. Our practice here is to plow up to the trees in the young orchards and bank well with a few shovelfuls of earth, to prevent damage by mice. Where orchards are older (and especially if underdrained, as they should be), a few cross furrows are run to let off surface water, and the work is accomplished more with the disk harrow and less with the plow.

Fine Fruit from Nova Scotia at Omaha.

Among the recent shipments of fruit sent from Nova Scotia to the trans-Mississippi Exposition at Omaha, by instruction of the Hon. Minister of Agriculture, were some extraordinary specimens of apple. One of Chebucto Bounty weighed 26 ounces, and its largest circumference was 15½ inches. A specimen of Blenheim Orange measured 13½ inches in circumference and weighed 10 ounces. Forty-nine varieties were forwarded in all. The specimens were all excellent, large, and high-colored. Among the other fruits from Nova Scotia was a barrel of the celebrated Gravenstein apple, which is raised in such great perfection in that Province. This excellent exhibit of representative Nova Scotia fruits was got together by Mr. R. H. Starr, of Wolfville, N. S. The fruit exhibited at Omaha from different parts of Canada has produced a strong impression on the side of the visitors as to the favorable character of the Canadian climate.

Any present subscriber sending us in two new subscribers and \$2.00 will have his or her subscription extended one year.

POULTRY.

Fattening of Poultry by Different Methods.

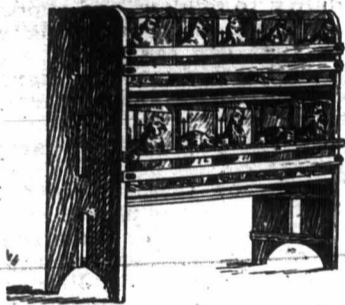
THE CRAMMING PROCESS AND THE FOOD USED IN SO DOING—CARE OF THE NEWLY-HATCHED CHICKEN REQUISITE—FLESH OR FAT—BETTER-BRED POULTRY REQUISITE.

BY A. G. GILBERT, POULTRY MANAGER, CENTRAL EXPERIMENTAL FARM, OTTAWA.

Poultry development is taking place more rapidly than is apparent to the casual observer. It has assumed the following "acute" phase, if we may so write. The Government has arranged for the transport of various agricultural products more or less perishable, in their nature by cold-storage chambers in car and steamboat. Among them are poultry and eggs. More arrangements have been made for the establishment, under the operations of the Commissioner of Agriculture and Dairying, of three experimental stations for the fattening of poultry by the forced or cramming process so much in vogue in England and France. The farmers are asked to send none but the superior quality. Of eggs we do not speak at present. But as to the superior quality of poultry, the cold fact is that it cannot be shipped in quantity until it is produced by the farmers of the country. And it is equally plain that our farmers cannot produce the superior quality until they keep the breeds which make the large, fleshy chickens so susceptible to easy fattening by ordinary careful feeding or forced methods. It is only waste of energy and time attempting to get the weight of the Plymouth Rock or Wyandotte chicken on the nondescript. Now, what are we going to do about it? Surely not going to let the opportunity of reaching a thirty-million-dollar egg and poultry market slip from us! We have seen too clearly what the cow has done with intelligent care and feeding not to give the hen a chance.

CARE OF CHICKENS NECESSARY PREVIOUS TO FATTENING.

We have shown in a previous issue the breeds best adapted for egg laying and flesh development. We propose now to show the different methods of fattening chickens or fowls. To get the desired



STRAIGHT FATTENING PEN.
(As used in England.)

weight in flesh rather than fat it is imperative that the chicken be cared for from time of coming out of its shell. It must be borne in mind that a chick which has become "stunted" from being "stinted" during the first five weeks of its existence will never make a satisfactory market fowl. Why? Because during the period of the chicken's life mentioned there is a great drain on the system for feathers, bone, muscle, etc. If the chicken is dragged about by its mother in her active efforts to find food for it, instead of being well cooped and fed, during its early life, the result will be development of bone, sinew, muscle, feathers, etc.—everything but the flesh that is so desirable. Such a chicken is not a promising subject to put in the fattening pen. It will be well, then, to bear in mind the fact that to secure the greatest quantity of the finest quality of flesh in the shortest time it is necessary that the chick be well cared for from time of hatching.

DIFFERENT METHODS OF FATTENING.

The fattening of chickens has long been practiced in England and France. There are three well-known methods of doing so, viz.:

1. Allowing the birds their liberty and giving them all they can eat of a rapid flesh-forming food. The food is given in a trough. It is said in this case they are more likely to put on flesh than fat—a very important point.

2. Penning up the birds in small cages arranged in straight or circular form, the latter frequently in tiers. They are fed to repletion three times a day for ten or fifteen days, when they are said to be "half-fatted."

3. Birds penned up as in No. 2. After ten days or so the appetite of the birds begins to fail. The food is then forced down their throats by a machine worked by hand, foot or from under the arm. This is called the cramming process. Sometimes the operation is done by hand as described later on.



POULTRY FEEDING MACHINE.

The cut shows one description of cramming machine. In others the tube is inserted into the gullet of the bird as it is confined in the pens. In the above the bird has been taken out of the fattening pen and is held by the operator to the tube, while by a quick motion of the foot the proper quota of food is forced down the throat. Some machines are operated by the arm.

DIFFERENT FOODS.

Various meals are used in England for making up the rations for hand or machine use. The favorite meals for making flesh are oatmeal, barley and buckwheat. All grains made into the meals are ground very fine—so fine that they are called flours. In France corn meal is sometimes used in making up a ration. In England it is said to give a yellow color to the skin, which is not desirable, and is not popular on that account. Mutton or meat fat and tallow are mixed in the rations in greater or less quantity, according to the exigencies of the occasion. In some cases Australian mutton fat is used. The fat is melted and mixed with the ground grains and milk. The food is made into paste with skim milk slightly sour or buttermilk. Both are considered valuable. When fed by hand the food is made into bullet shape, or half-finger length pieces of paste, and forced down the gullet. When fed by machine the food is given in semi-fluid condition, or almost so.

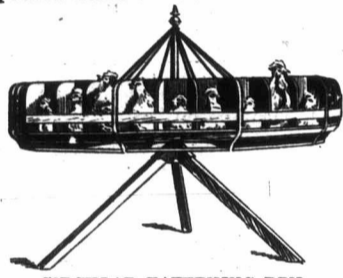
RULES TO BE OBSERVED.

There are certain rules to be observed, as follows: 1. Feed with greatest punctuality three times a day. 2. Give no stale or soured food. 3. Observe the greatest cleanliness. 4. Keep the birds quiet and in from semi-darkness to total darkness towards the end of the fattening period. 5. The apartment for fattening should be kept moderately warm.

To secure cleanliness the bottoms of the small pens or cages can be so arranged as to allow the droppings to fall on a board underneath, on which is dry earth or sand. To ensure quiet the cages are made large enough to hold the bird and no more. It is thus prevented from moving about. White-wash and carbolic preparations make good disinfectants. In many cases in England semi-darkness is secured by having heavy cloth blinds in front of the coops or cages.

FLESH OR FAT.

By the cramming process it has been noticed that the birds frequently come out of their cages round balls of fat rather than flesh. That is where the birds have been confined, fed till "half fatted," and then crammed for the balance of the term, no exercise being meanwhile allowed. On the other hand, it has not been infrequently noted that the birds which have been fed as much as they could eat three or four times per diem for ten or fifteen days,



CIRCULAR FATTENING PEN.
(In France several tiers are used and the attendant drawn up to feed by pulleys.)

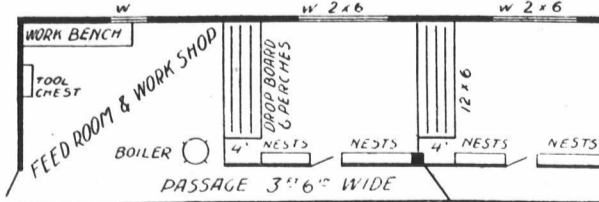
but had their liberty, put on flesh rather than fat and that the flesh was of superior quality and flavor. Too much importance cannot be placed upon this statement. It may not matter to the seller whether he has the weight of his chicken in fat or flesh, but it is certainly a matter of some consequence to the purchaser, for fat in such a case is waste. There is room here for interesting experiment, in which the aid of the chemist will have to be sought in the preparation of rations flesh-making rather than fat-forming, and with such material as our farmers have within their easy reach. Old fowls take on fat most readily.

DO SOMETHING MEANWHILE.

In the foregoing the subject of fattening, or, rather, putting on flesh by different methods, has been pretty well threshed out. As I remarked in your last issue, our farmers can do much meanwhile. If they do not choose to try the forced feeding, they can pick out their early cockerels, pen them separately, if possible—at any rate keep them in a quiet place—and feed them for ten, twelve or fifteen days, carefully and regularly, all they can eat. And note the difference. It may require, mayhap, systematic effort, but without it we can never hope to reach the high-price market, at home or abroad, with poultry, beef, mutton or bacon.

A Good Farm Poultry House.

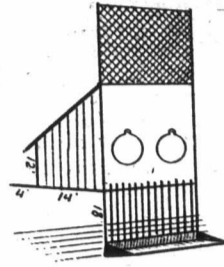
Stephen Benson, a Beautiful Plains (Man.) wheat farmer, cultivating a section of land, does not consider poultry beneath his attention, and has a fine flock of Barred Plymouth Rocks, also Bronze turkeys, and geese. He has a very serviceable, yet inexpensive, poultry house, a brief description of which follows:



GROUND PLAN OF POULTRY SHED.

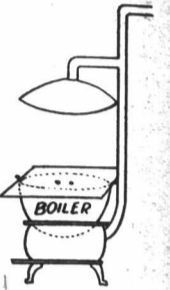
The building is 16x48 feet, the walls are flatted poplar logs 6 in. thick, on end, and well plastered, shed roof shingled, sloping south. (For ground plan see cut.) The feed room and workshop is

floored, pens filled in with clay. Each pen is well lighted with three 2x2 feet sash, the center one sliding open. The drop boards and nest boxes are two feet from the ground, thus not interfering with ground space; partitions are of woven wire, and under the nest boxes stiff wires are fastened upright two inches apart, with small V-shaped trough on outside in passage for water and soft feed (see cut). The nest boxes and perches are movable for cleaning, whitewashing, etc. Dry chaff is used on the pen floors in winter, and dust baths, gravel, etc., supplied. Under the feed room the natural slope of the ground leaves a space of two feet clear, and makes good winter quarters for the geese. An ordinary farm boiler is kept in feed room; a board cover is used on the boiler, with two inch-and-a-half holes near the



NEST BOX AND FEED TROUGH.

center to permit escape of steam; over the boiler a tin funnel-shaped steam-catcher is hung with a pipe leading directly into a steam pipe which runs along near the roof and enters chimney near center of building. This arrangement, Mr. Benson says, does away with all dampness, and the boiler full of hot feed keeps the whole building comfortably warm, even in coldest weather. So dry is the atmosphere that saws and other tools hung in the work room do not rust.



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.

Discharge from Heifer's Nose.

FRANK H. SILCOX, Elgin Co., Ont.:—"I have a heifer, one year old this fall, running a thick white matter from nose, noticed principally in the mornings; also a yellowish substance in the corner of the eye. Have noticed her losing in flesh for the last month. Could you give the cause and remedy in the next ADVOCATE, and oblige?"

[The information given is not full enough to diagnose the trouble, which might be catarrh in some form. Have you noticed any swelling about front bones of nose? Are the teeth sound? For catarrhal trouble give ½ lb. dose salts as a physic and follow with 1 dram doses sulphate of iron in bran mash night and morning for a week or so. Report results.]

Anthrax in Calves.

SUBSCRIBER, Westport, Ont.:—"Some four weeks ago one of my calves was taken sick and within twelve hours died; since then I have lost four calves and two yearlings. The symptoms were lameness of either front or hind leg, with a great deal of swelling; after death I skinned one and found the swollen limb a mass of black clotted blood. Is the disease black leg; if so, is there a remedy or preventive?"

[Black leg, or, to use its more correct and scientific designation, anthrax, is a very prevalent disease amongst young stock in England, and it is there known under a variety of names—black quarter, quarter ill, blood striking, charbon. All of these designations denote the peculiar character of the disease, which is usually characterized by lameness of one leg or quarter, followed by swelling and gangrene. Anthrax is almost entirely confined to young animals from six months to two years old. When seen in older animals is due to actual contact, hence its contagious character. The cause of anthrax is a microscopic organism known as the anthrax bacillus, and thrives best under conditions of soil subject to floods, or in peaty, swampy soils, hence fields containing stagnant pools may be a source of infection and danger. We remember a number of cases appearing in a certain field, where no cattle could be pastured, and after a good deal of searching found that a carcass had been buried, unknown to the proprietor, suffering from this disease; hence, too much caution cannot be exercised in the destruction of the carcass by cremation. Symptoms are well described and cannot be added to. This disease is also very fatal to the human subject, and may be transmitted by handling the carcass and hides of the animals which have died of the disease. The only preventive is inoculation by a modified bacilli, so that they have lost, to a certain degree, their original virulence. It must be carefully borne in mind that cattle or sheep must not be fed in or near the field again, or the disease will again appear with even more severity.]

DR. W. MOLE, M. R. C. V. S.
413 Bathurst St., Toronto, Ont.]

Miscellaneous.

The Life History of Wheat Rust.

SUBSCRIBER:—"By giving the life-history of wheat rust (*Puccinia Graminis*) in a succeeding issue of the FARMER'S ADVOCATE, you will, I am sure, confer a favor on many readers of your valuable paper."

[The life-history of wheat rust (*Puccinia Graminis*) was first worked out in 1861 by DeBary, who showed conclusively that the rust fungus passed through three different stages of development. Prior to DeBary's discovery it was a well-known fact that the presence of barberry bushes had a very damaging effect on wheat, rye and oat crops growing nearby. And so rooted had this idea become that the Legislature of Massachusetts passed a by-law to the effect that every farmer must destroy every barberry bush on his farm. Much discussion has arisen as to the utility of such a drastic measure, and botanists of great repute can be found to have taken part in both sides of the discussion, but the prevailing opinion at the present day appears to favor the idea that the intensity of the rust in the vicinity of the barberry is much increased, that the total disappearance of the barberry would not prevent the rust, but would decrease its destructive effects.

The different stages in the life-history of rust are these: In early spring yellow circular spots appear on the leaves of the barberry. These spots indicate the presence of a mass of thread-like filaments (mycelium), from which arise the *Aecidia* or cluster-cups of the under surface, and the *pycidia* on the upper surface. These *Aecidia*-spores are ready to escape from the cluster-cups about July, and are carried to the leaves of wheat and other grasses, where they germinate and send a small tube through the stomata or breathing-pores into the interior of the leaves. These tubes send out branches among the soft cells, and absorb the nourishment intended for the plant. In about eight days reddish patches occur on the leaves, and the well-known reddish rust-colored spores break through the epidermis. These are blown about by the wind to other grass plants, new germinations take place, and soon the whole wheat field becomes infected. This process continues until the conditions are not favorable for the discharge of the spores through the epidermis, when a third kind of spore is produced on the same rupture spots, and from the same mycelium as the reddish summer spores. These are the winter spores, which are specially formed in late summer and autumn on the leaves and stubble of the grain—i.e., the uncut portion—and remain in place until spring. They first produce, by a kind of germination (while on the stubble or on the ground where they may have fallen at any time during winter or spring), a few small spores or *sporidia*, and it is these that find their way to the barberry leaves, where they germinate and produce the cluster-cups. This completes the cycle of its existence and the three stages of development.

It has been discovered, however, that the mycelium from which arise the red rust or summer spores may hibernata in winter wheat and continue its existence in spring by producing new spores without the intervention of either the winter spores or the *Aecidia* spores of the barberry. This discovery will explain the presence of rust in regions where there are no barberry bushes; yet the fact remains that the presence of the barberry aids materially in the spread of the rust. In climates without severe winters the winter state may be omitted, and, as stated above, the summer spore state may be perennial. It is a well-known fact that many fungi form resting spores only when conditions are unfavorable for rapid growth and propagation. They prepare for hard times.

When we bear in mind that other grasses besides wheat, such as sweet vernal, meadow fox-tail, couch grass, etc., act as host plants for this fungus, we should not be surprised at unexpected invasions of rust.

Again, it is very probable that other plants besides the barberry may act as host for the *Aecidia* stage. Many weeds, such as the blue weed and the hound's-tongue, serve as host plants for the other wheat rust (*Puccinia rubigo-vera*) which is so prevalent in many wheat sections.

Still another method of propagation of rust without the intervention of the barberry stage has been observed. Plowright found that the spores obtained on the germination of the winter spores infected wheat directly.

Such are the various modes of propagation of rust, and while all of these modes may operate under certain conditions, it is fair to assume that the three-stage development is the usual one, and that the destruction of the barberry is beneficial. With the aid of the wind the *Aecidia* spores of the barberry may be carried hundreds of miles, and wheat fields hundreds of miles from barberry bushes may become infected, but the greater the distance the less the chance of infection.

It is also fair to assume that with the complete destruction of the barberry on this continent, the rust might still be propagated by the method stated throughout this brief article.

W. LOCHHEAD, Professor of Biology,
Ontario Agricultural College, Guelph.]

Balanced Ration for Dairy Cows.

W. F. STEPHEN, Huntingdon, Que.—"Kindly answer the following through your paper: 1. Will 2 pounds each of pea meal, corn meal, oats (ground), and 3 pounds bran, 30 pounds good corn ensilage, with what good clover hay they will eat up clean, be a completely balanced ration for winter feed of milk cows? The aim is to get lots of cream of first quality from the milk. 2. Is it now a recognized fact that food has little or nothing to do with the quality of the milk produced?"

[1. In answering this question we assume that the cows average 1,000 pounds live weight, and that they will consume 12 pounds clover hay each per day in addition to other fodders. They may consume rather more hay than this, but 12 pounds is a reasonable estimate. Estimating the digestible constituents and total organic matter in the ration as given, we obtain the following:

	Digest. Protein.	Digest. Carbohydrates.	Digest. Fat.	Total Organic Matter.
	Lbs.	Lbs.	Lbs.	Lbs.
2 lbs. Peas.....	330	1,120	.018	1,738
2 " Corn.....	142	1,254	.084	1,752
2 " Oats.....	182	894	.082	1,730
3 " Bran.....	378	1,323	.087	2,472
30 " Ensilage.....	390	4,200	.210	7,380
12 " Clover hay.....	780	4,182	.192	9,420
Total.....	2,292	12,973	.673	21,363

The German standard for dairy cows is as follows: A cow in full milk should receive per day per 1,000 pounds live weight, 2.5 pounds digestible protein, 12.5 pounds digestible carbohydrates, .4 pounds fat, and 21 pounds total organic matter. The ration submitted by your correspondent varies but slightly from this standard, and may be counted an exceptionally well-balanced ration. 2. The investigations made by all the leading experimenters and scientists in this connection go to prove most conclusively that food has very little, if any, effect upon the per cent. of fat in milk. It affects the quantity, flavor, etc., of the milk, but not its composition. Very wide variations in composition sometimes occur when cows are receiving the same ration. In the milking competitions at the different fairs the cows almost invariably test much lower in butter-fat than they do at home, in spite of every effort of their owners. This shows that there are forces at work which affect the composition of milk independently of the food, and that the composition of milk is not under the control of the feeder.

G. E. DAY,
Ontario Agricultural College.]

Reduction of Bones for Fertilizer.

R. NICHOLSON, Middlesex Co., Ont.—"I have read 'Gyra's' remarks in the FARMER'S ADVOCATE of October 1st on ashes and rage, and agree with every word. Now, there is a similar matter that is worthy of attention; that is, in regard to bones. They are shipped away periodically by the carload. This, in my judgment, is as reprehensible as the sending away of ashes. On one occasion I noticed a car of bones being shipped away. I was moved to write to the principal machine makers both in Galt and Brantford to enquire if they made a machine for grinding bones, as I have steam power. I thought if such a machine could be got, not too expensive, I would invest and make use of it to grind enough, at least, for my own use. I received an answer from both firms that they did not make such a machine and could not say where I could get it. Can you, Mr. Editor, tell me and others through the FARMER'S ADVOCATE where such a machine could be procured? By doing so you will confer a favor. 2. Can you tell me if air-slaked lime is of any benefit on a poor, sandy soil? Any information regarding the grinding and preparing of bones for fertilizing purposes would be very acceptable."

[1. What Mr. Nicholson writes regarding the loss that occurs by shipping away bones from the farms contains more truth than poetry; in fact, the matter of fertilizing our farms is given far too little consideration. The question concerning a power bone-grinder we will have to refer to manufacturers of such machines to settle, as we know of none for that purpose that we can recommend. Even though one could get the grinding done conveniently the meal would have to be treated before applying it to the land, and that can be done almost as well when the bones are simply broken up with a hammer on a stone. The trouble with fresh bone meal is that it usually contains so much fat that its decomposition is very slow in the soil. The most approved treatment for the reduction of bones to fertilizer is as follows: Break one hundred pounds of bones into small fragments and pack them in a tight cask or box with one hundred pounds of good wood ashes which have been previously mixed with twenty-five pounds of dry water-slaked lime and twelve pounds of powdered sal soda. Twenty gallons of water will saturate the mass, and more may be added as required. In two or three weeks the bones will be soft enough to turn out on a platform and be mixed with two bushels of road dust or ordinary dry soil ready for use.

2. This question will be better answered by referring to the action of lime, which is really to disintegrate or hasten the decomposition of vegetable matter so as to make it available for plant food. When a soil contains but little vegetable matter an application of lime would be injurious,

as it will cause the vegetable matter to decompose too quickly, thus nourishing the crop in its earlier stages and starving it later in the season. It will thus be seen that a poor, sandy soil is not the place to use lime. Sour, heavy, damp soils are benefited by applications of lime, which has a sweetening effect, but even here continued applications would tend to exhaust the fertility in time.]

Manuring Land for Roots—"Farmer's Advocate" Worth \$1 a Copy.

H. N. BINGHAM, Simcoe Co., Ont.—"I am greatly pleased with the FARMER'S ADVOCATE, and would not be without it for twice the subscription price, as I consider every number is worth \$1 to me. 1. I would like your advice about the best time to haul manure on clover sod intended for turnips. Do you think it would be best to manure it in the fall and plow it down, or haul in the spring on the last snow and gang plow it in as soon as possible? Or would it be better to wait until near time to sow the turnips and then haul and plow in immediately? 2. I would also like your opinion about preparing the soil for mangels. Would the following be a good plan in moderately strong ground: Plow the ground in the fall, after being well manured with well-rotted barnyard manure, harrow down well, and in the spring work thoroughly with the gang plow and disk harrow? When ready to sow, drill in about 300 pounds per acre of superphosphate in the rows with the seed. Would that be a proper amount of fertilizer? I have heard it said that it was a good plan to put the mangel seed in boiling water for about two minutes. By giving your opinion on the foregoing you will greatly oblige."

[1. It is becoming very general practice to get manure into the land as soon after it is made as possible, for the reason that the waste by loss of ammonia by volatilization, and nitrates, etc., by leaching, are then reduced to a minimum. Not only that, but the action of the decomposing manure tends to render soluble inert plant food in the soil. It is well when applying manure at any time, but especially when it long precedes the sowing of the crop, to cover it quite shallowly, as the tendency is for the fertility to work down into the subsoil. What we have said has special reference to making the most of the manure when one has it ready to apply, but so far as the turnip crop is concerned, applying it in early spring, as suggested by Mr. Bingham, should suit well, especially if the manure is fresh, but if the manure is well rotted the crop would make about as good use of it applied in May for June planting. So far as getting the sod worked down is concerned, it will be better plowed this fall, especially if at all tough, but if of 1897 seeding down, early spring plowing should get it into nice form for drilling by the time for sowing the crop. 2. The plan outlined for the mangel ground appears to be all right so far as the farmyard manure and cultivation are concerned, but it does not seem necessary to apply such a heavy dressing of superphosphate. From 100 to 150 pounds should give excellent results, but we would strongly recommend an application of 200 pounds of salt per acre. Mangels respond perhaps better than any other crop to saline applications. While we believe mangel seed will germinate more quickly and evenly after soaking, we would not consider it safe to apply water at a scalding temperature. Twelve hours' soaking in warm water and then dried in land plaster before planting is ordinarily practiced.]

Cows Slow to Breed—Slow Churning—Sheep Rearing.

D. H. MCA., Ottawa Co., Ont.—"I would thank you very much for a solution of the following difficulties which have presented themselves to me on different topics:

"1. We have several cows turned out on pasture with calves 'on them,' but find that none of them have 'come round.' Does this always occur when the calves are left sucking? Can it be remedied?"

"2. In churning of late it has taken us from one to two hours to 'bring' the butter. What is the reason of this? We conduct the operation in the usual manner after leaving the cream 24 hours at least to ripen. If the ripened cream registers more than 60° when ready for the churn, should it be lowered in temperature with cold water?"

"3. Why do not farmers raise sheep more extensively when they show such large profits—at least theoretically? Is this industry not practicable on a much larger scale in this country—that is, Quebec Province? I am contemplating investing in this branch, but there would appear to be some barrier to its success of which I am not aware. Could you suggest some good practical work on the subject, applicable to this district?"

"I enclose stamped envelope, and would be much pleased to have your opinion on above matters."

[1. This question touches on a very important subject, and below we give the opinions of several breeders, all of whom agree that the practice of letting calves run with the cows all the time works disadvantageously to the cows coming in heat and to their breeding. Mr. John I. Hobson, Guelph, writes: "Cows are more difficult to get in calf when the calves are allowed to suck them. I have always thought it an advantage to allow them together only when the cows are brought in for milking; that is, twice a day." Mr. Jas Bowman, while he has had no trouble to speak of in getting the cows to come in season while suckling calves, only allows them to be together at regular milking hours. His cows generally come in heat about a month or six

weeks after calving. He has heard of cases, however, where cows would not come in while suckling calves, or if they did, they would not hold. Mr. David Burns believes that cows are more difficult to get in calf when the calves run with them. He allows the calves to suck twice a day, and finds that the cows come round regularly under this treatment. If they do not come round after calving, a little meal will cause them to do so. He prefers to keep the calves separate from the cows, except at feeding time, because they do so much better under that system. There is less trouble with cows that are bred in cold weather than those served in summer. Messrs. Thos. Douglas & Sons, Strathroy, experience the same trouble in getting cows to come round when running with their calves, especially in the early part of the summer, but have had no difficulty in getting them to "hold." If cows will not come "in season" they feed a liberal allowance of pea or corn meal, which is generally successful in bringing them round. Like Mr. Burns, they find that cows come round more readily in the fall than earlier in the season. Mr. A. W. Smith, Maple Lodge, writes: "I have frequently found difficulty in detecting cows in heat while they were suckling calves, if the calves were running with them, but have always been able to remedy it by separating them from the calves except while suckling them twice a day. When they are thus separated they show symptoms of being in heat just as freely as cows milked by hand." Mr. C. W. Simmons has always allowed his cows to suckle their calves twice a day, and considers they are more liable to come in heat than if the cows and calves were allowed to run together. He deems it important to prevent, if possible, cows losing time from year to year; it is better to gain a month. If they are allowed to lose from one to two months they are more liable to become barren. Messrs. R. & S. Nicholson, Sylvan, Ont., claim to have no trouble with cows not coming in heat when suckling their calves, which is only allowed to be done twice daily. Some years ago they found trouble in this regard when the cows and calves were allowed to run together, which led them to change their system to the present one.

2. The most frequent cause of difficulty in churning is that the cream is too cold. I would judge that the correspondent who writes above has been in the habit of always churning at 60°. This is a great mistake. Sixty degrees may or may not be the correct temperature. In case of requiring one to two hours to churn, I should judge that it is not the proper temperature, but the cream would churn more quickly if warmed to 64° or 65°. To add cold water to the cream would increase the difficulty, as it thins the cream and makes it harder to churn. If the temperature is not right, warm or cool the cream by placing the vessel containing the cream in cold or warm water and stir frequently until it comes to the proper heat. The following are generally the causes why the butter is so long in coming: (1) The temperature is not right—usually the cream is too cold in the churn. (2) The cream may have been kept too long. (3) The cream of a "far-row" or "stripper" cow may be causing the trouble. (4) The cream may be too thin—get rid of some of the skim milk. (5) The cream may be too thick—add a little skim milk or water. (6) The churn is too full. (7) The maker is incompetent.

H. H. DEAN, Professor of Dairying, Ontario Agricultural College, Guelph.

3. It is a matter for wonder to a great many farmers, and especially those who keep sheep, that sheep-raising is so meagerly resorted to in a country so favorable to it as Canada. In a Province like Quebec, where there is considerable rough and broken land, but fairly good pasturage, sheep-raising should, we would consider, be the most profitable sort of agriculture. The main drawback to it, especially near towns and cities, is the dog nuisance, making it necessary to protect the flocks at night. Other than this, we know of no good reason why intelligently-conducted sheep-raising should not be much more general than at present. The latest work on general sheep management is titled "The Domestic Sheep," by Henry Stewart, a review of which was published in the April 15th, 1898, issue of the FARMER'S ADVOCATE, page 187. It contains 370 pages of practical matter, interspersed with clear illustrations. It can be had through this office at the regular price, \$1.50.]

MARKETS.

FARM GOSSIP.

The Northwest Situation.

The persistent and excessive rains of the past month in Manitoba, following a showery September, were unprecedented, and caught thousands of acres of grain in the stook, delaying threshing and doing great damage to the quality of the wheat. All that will grade No. 1 hard will command a big price, and "feed" wheat will be plentiful enough to ship eastward. Unfortunately, also, the country is pretty well cleaned out of stocker cattle, and few hogs were bred in the West last spring—another lesson for the West. In fact, for several months already Chicago cured meats have been imported to supply local demands in Winnipeg and other big meat centers. The wet season will greatly benefit the land for next spring's seeding.

Canadian Honey, Maple Syrup, and Fruit in England.

The mayor of Manchester, the Hon. Robert Gibson, has written to the Department of Agriculture, Ottawa, saying:

"The samples of maple syrup, maple sugar, and clover honey which you caused to be sent to me have duly arrived. The honey and syrup I have submitted to some large buyers of such material here, who seem much pleased with the samples, and have promised to communicate with their Canadian agents. I shall indeed be pleased if it leads to business, as the more the mother country can reciprocate with her colonies the better for all." A letter from Mr. F. B. Girdlestone, General Manager of the Bristol docks, has also been received. He says: "The package of peaches and pears was delivered to my house on Saturday morning last. The contents came to hand in splendid condition, and all I can say is that if your country can deliver fruit of this quality, and in such condition, the market in this country is an unlimited one. I have sent specimens around to friends, who pronounce the condition excellent and wonderful."

Oxford County, Ont.

The continued wet weather is the all-absorbing topic of conversation amongst the farmers. It commenced to rain on the 11th of this month and has rained more or less steadily ever since; we had only one day at all fair and clear. Much of the corn and mangolds are still out in the fields, when they should have been in the barn, and it is going to be a serious matter for those whose roots are on low, wet land, as the ground is now so wet that it will not likely dry out much at this late season. But man can adapt himself to circumstances. At a sale of farm stock, on one of the worst days we had, a good crowd turned out and the sale seemed to go just about as well as if it had been a fine day. Cows are going from \$20 to \$35; calves from \$10 to \$15; implements bringing all they are worth. Fat hogs are away down below 4 cents, but store pigs sell at higher prices than the markets warrant, which means, I suppose, that farmers expect that the depression in prices is only temporary. Several cheese factories are getting buttermaking plants fitted up, intending to quit the cheese until the warm weather next summer; they will commence to make butter about the 1st November. Apples have grown remarkably well these last few weeks and are now a very much better sample than could have been expected. On account of the wet weather there are still a good many on the trees, when they should have been in the barrels; there are not nearly so many culls as usual. The roads are getting bad, and it is a serious matter for those who have many miles to haul their apples to the railway station. The coopers are very busy making apple barrels; working overtime. D. L.

Prince Edward Island.

In the ADVOCATE of August 15, commenting on a letter from Mr. J. A. McDonald, who gave such a doleful account of corn in P. E. I., you asked for the experience of other Maritime readers on this subject. I send you my experience with fodder corn, and also the experience of several other farmers in this vicinity, who have been growing corn for a number of years, many of whom have gone to considerable expense in building and equipping silos. These men have discontinued planting corn entirely, and are puzzled to know what use to make of their large silos. Their reason for stopping is simply this: The season is too short to allow of the corn maturing properly, and it had to be siloed before the ears were full. This made very waxy ensilage, poor feed for milk cows and fattening steers. I have no silo myself, but always plant corn for fall feeding. I plant about June 1st, in hills 30 inches apart, and 3 grains in a hill. It was beautiful corn—a large stock and well eared—but it was frozen on Sept. 23. (Last autumn it was frozen on Oct. 3.) It is now bleached a pure straw color, and is eaten with little relish by the cows.

The varieties generally planted are Pearce's Prolific and Longfellow, but unless some earlier variety can be procured we will have to discontinue corn planting altogether. Turnips, though promising well early in the season, will not be a full crop. J. H.

Chatty Stock Letter from Chicago.

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

CATTLE.	Extreme Prices.	Top prices			
		ago.	1897.	1898.	1898.
1500 lbs. up.....	\$4 65 to 5 90	\$5 85	\$5 30	\$5 15	
1300 @ 1500.....	4 40 to 5 80	5 80	5 35	5 15	
1200 @ 1300.....	4 20 to 5 75	5 70	5 25	5 10	
1050 @ 1200.....	4 10 to 5 60	5 70	5 20	4 75	
900 @ 1050.....	4 00 to 5 50	5 60	4 90	4 50	
Fed Westerns.....	3 90 to 5 60	5 60	5 05	4 90	
HOGS.					
Mixed.....	3 45 to 4 00	4 00	4 15	3 55	
Heavy.....	3 30 to 4 00	4 00	4 12	3 52	
Light.....	3 45 to 3 95	3 95	4 15	3 57	
Pigs.....	2 50 to 3 85	3 90	4 10	3 55	
SHEEP.					
Natives.....	2 25 to 4 80	4 60	4 50	3 50	
Western.....	3 50 to 4 60	4 40	4 25	3 35	
Texas.....	4 00 to 4 15	4 20	4 60	3 00	
Lambs.....	3 90 to 6 25	6 20	6 00	4 90	

Receipts of Western range cattle here for the season so far amount to about 172,000, against 197,000 a year ago, and 219,000 three years ago. The Government has sanctioned the system of dipping Southern cattle in oil to kill ticks, and has modified shipping regulations accordingly.

The percentage of young hogs among the daily arrivals is showing some increase, and the quality is good. The general impression is that receipts of hogs during the next two or three months will be large, but the demand is very excellent. The foreign trade is taking liberally of both meats and lard, with inquiries for early future delivery to an extent which has hardly been looked for by the trade, and these conditions have had a strengthening influence on values.

A man from Grand Island, Neb., says high-priced feed and comparatively high prices for feeding stock will cause a material decrease in the number of sheep fed in Nebraska this season. He thinks only about half as many as a year ago will go into the feed lots. He lately paid 22 cents for corn.

Some of the big Colorado lamb feeders have commenced the experiment of feeding calves on the same plan they have used for feeding lambs.

Some 1,518-pound Angus cattle sold at \$5.90. The prime fat yearlings continue to meet a steady, strong demand, and they sell for better prices relatively than the choice, ripe, heavy cattle. Just now there is more of a demand for strong weight feeding cattle than for extremely light stockers, such as were in such strong demand a few weeks ago. An old dealer declares that stockmen go at such things like sheep, and think they are paying absurdly high prices now for heavyweights to the

neglect of the very light stockers. He thinks it better to buy common little cattle for less than what they are worth than to pay too much for the prime heavy cattle. Of course this is a self-evident proposition, but there are times when there is more profit in handling common cattle than good ones. A prominent Central Illinois man, who farms on a very large scale, makes it a rule to buy only the cheaper sorts of cattle, keeping out of the competition which runs prices relatively too high on the prime, well-bred young cattle. Attention is called to the fact that while the prospective supplies of cattle are not as large as the prospective demand, the proportion of mutton going into consumption is yearly growing larger, and so as mutton production increases there will be some lessening of the demand for beef.

Toronto Markets.

Over 150 loads of cattle on the market to-day. **Export Cattle.**—This class was well represented; many choice animals on sale. Prices were weaker on report of bad trade in the Old Country; the demand easy. Choice heavy sold at \$1 to \$1.35; light exporters \$3.75 to \$3.87. Messrs. Crawford & Humsett sold one load of exporters, average 1,325 pounds each, at \$1 per cwt. Mr. Jos. Gould purchased from Mr. W. B. McKay 50 choice exporters, the best on the market, at \$4.30. Mr. L. Vance sold one load of exporters at \$1.25, average 1,300 lbs. each.

Butchers' Cattle.—Good butchers' cattle were scarce, as the best were taken for export. Choice butchers' cattle sold at \$4 to \$4.10 per cwt. The supply was small of choice butchers' cattle, and more would have found an easy sale. Average price was \$3.90 per cwt. Mr. Wm. Levack bought 165 cattle, one mixed butchers' and exporters, at \$3.25 to \$4.12 per cwt. One load of butchers' cattle, 1,025 lbs. average, at \$3.50 per cwt. Mr. S. Levack, one load of butchers' and exporters, mixed, at \$3.75; average 1,300 lbs. each.

Stockers.—Buffalo stockers were not so plentiful as of late; the demand not quite so keen. Yearlings more in demand, at \$3 to \$3.15 per cwt. For choice lots and medium class, \$3.10 to \$3.50. Messrs. Rountree & Halligan received 162 stockers from the eastern townships of Quebec and, with 75 brought on this market, shipped the whole in one consignment to Buffalo.

Feeders.—Choice heavy feeding steers sold at \$3.60 to \$3.75, with a few picked lots going up to \$3.85 per cwt. One load of heavy feeders, 1,175 lbs. average, at \$3.40 to \$3.50 per cwt.

Sheep.—Prices lower on report of slow sales in the Old Country market. Shipping sheep sold at from \$3 to \$3.25 per cwt.; bucks, at \$2.50 per cwt.; a number left over at the close of the market. There has been a very large supply of sheep and lambs this season.

Lambs.—Prices much easier than two weeks ago, \$4 to \$4.10 for general run, or from \$2.75 to \$3.50 per head. Mr. J. W. Dunn & Sons shipped four double decks of sheep to Montreal.

Calves.—Choice heavy weight veals at \$7 to \$8 per head, or \$5 per cwt. One very choice veal fetched \$12.

Milk Cows.—Not many on offer. Prices lower, at from \$25 to \$35 for choice. Mr. L. Jones is open to purchase 20 choice dairy cows; he is willing to pay top market price.

Hogs.—It will pay the farmers to watch the hog market for the next few months. Values are now so low and conditions are such that a large number of hogs are likely to come on this market during November and December, keeping the price down to a dead level. January should bring an upturn. Messrs. Davies have just disposed of all their high-price bacon hog products (those purchased at \$5 and \$6 per cwt.), and are now stocking up at lower figures; 12,000 hogs are expected next week, which will keep the price at \$4.25, for the very best selections off cars; light fat, \$4, and heavy fat the same. One load of hogs, nearly 200, consigned by Mr. Joseph Clancy, made \$4.37; they were extra choice quality, and ought to have been the subject of an illustration of what our packers want as best class of singers. Sows, \$3 to \$3.25; stage, \$2 per cwt.

Dressed Hogs.—Demand from lumbermen and outside provision dealers active. Prices are a little more steady. Packers quote, for choice clean lightweights, 100 to 140 lbs., \$5.40 to \$5.50 per cwt.

Eggs.—Choice new-laid stock scarce and wanted. Prices steady. New-laid, 16c., 17c., and 18c. per dozen. Cold-stored, 13c. to 16c. per dozen.

Poultry.—Saturday's market was the first active day of the season. Prices quoted are as follows: Chickens per pair, 35c. to 50c.; ducks per pair, 50c. to 60c.; geese per lb., 6c. to 7c.; turkeys per lb., 10c. to 11c.

Grain Markets.—Several large consignments of Manitoba wheat and flour have been made from this market to France, via a new departure. Market strong, with Red and White at 72c. per bushel; No. 1 Manitoba hard at 85c. per bushel. On the street market, White at 75c. per bushel; Red at 73c. to 74c.; Gooze at 75c. to 76c. per bushel. Barley—1,500 bushels sold at 32c. per bushel. Oats—1,500 bushels sold at 31c. to 32c. per bushel.

Hay.—Market firmer; 30 loads on offer, at \$8 to \$9 per ton for timothy and \$5.50 to \$7 for clover. Straw—Scarce. Three loads on offer, at \$7 to \$8.50 per ton. October 26th, 1898.

Montreal Markets.

In our last report attention was called to the fact that a decline had set in in the British markets, and also to the fact that this weakness was having little or no effect on our local trade. No change has taken place in this situation even yet, notwithstanding the fact that cattle have been going down in price steadily since our last. It is to be hoped that the bottom has been reached, for no bank in the country could stand to ship 4 1/2 to 5 cent cattle to an 8 1/2 cent (dressed beef quotation) trade and hope to see a margin; but that is what exporters have to face this week. The week before last cabled sales from Glasgow dropped one shipper seven dollars per head on all he had in that market, and no report of improvement has been received since then. Last week cables were bad, but no comparison with those received yesterday (Oct. 24), when best Canadian stock was sold at 84c. per pound, sinking the offer, in London. What this means to the shipper can readily be seen when a 1,400 lb. steer is figured down to dressed beef, 1,000 lb. live weight at 4 1/2 = \$66.50 = will dress 56 lbs. to the hundred (a good average), or 784 lbs. beef at 84c. = \$66.61. The shipper realizes \$66.61 for the bullock which he paid \$66.50, out of the 14 cents having to pay all expenses, such as freight, feed, insurance, cost of selling, etc. This is the present situation in a nutshell.

As mentioned above, however, this has not affected the market to any material extent, as the local demand, combined with those taken for U. S. export account, keep the prices fairly steady on this market, the only appreciable difference being in the drover either holding hard for the last dollar on short market or shading a trifle on a bunch in an easy market. On yesterday's market 4c. to 4 1/2c. was paid for the best cattle in face of the ridiculously low cables; good, 3 1/2c. to 3 3/4c.; fair to medium, 2 1/2c. to 3c.; stockers for the Buffalo trade from 2c. for heifers to 3c. for steers.

The sheep trade has been dull on cabled sales, but prices unchanged at 3c. to 3 1/2c. per pound.

Hogs slow of sale at 4 1/2c. off cars. Cattle shipments have fallen away two thousand from a week ago, the combined weeks being: cattle, 7,035; sheep, 3,355; horses, 175; totaling, since the opening of navigation to date (Oct. 22nd), \$3,291 cattle, 26,697 sheep, 5,179 horses, the decreases in all lines being conspicuous, as the following figures for the same period last season will show: 105,175 cattle, 33,616 sheep, 8,616 horses.

Canada Live Stock Exports.

The following are the live stock exports for the week ending Wednesday, October 26th, as prepared by R. Bickerdike, of the Live Stock Exchange, Montreal: Cattle, 3,065; sheep, 718.



MY DEAR CHILDREN,—

Although you are all fond of fairy tales—at least I hope you are—you know very well that they are “only stories.” You don't really believe that Cinderella wore glass slippers (very uncomfortable things to dance in, they would be) or that Jack ever climbed his marvellous beanstalk, or that Alice succeeded in her attempt to get behind the looking-glass. Even your faith in dear old Santa Claus is sometimes rather shaky.

But, a long time ago, not only the children but the big people too believed a great many things which you would call “only fairy tales.” They thought that each tree had a fairy, or nymph, living in it. They walked always in a sort of fairyland; believing that the streams, mountains, flowers, trees, were all inhabited by invisible beings. I want to tell you the story of one of our spring flowers, the narcissus, as it used to be told long ago.

In a part of the world where the sun always shone, and the days passed by like a summer holi-

day, there lived a beautiful youth who was called Narcissus. For playmates he had all the beautiful nymphs who lived in the forest, and everybody liked to look at him because he was so tall and straight and fair. But he had one fault which, to anyone who knew him well, threw an ugly veil over his beauty. Narcissus cared only for himself. One of his playmates loved him very much indeed in spite of this sad fault. She was a nymph called Echo. Now, we know that Echo can never speak at all unless someone else speaks, and even then she can only repeat what others have said, but long ago she used to chatter a great deal. Unfortunately, this gift of speech once led her into deceit,

so as a punishment the gods decreed that never more should Echo utter words of her own framing. Partly because of this sad disgrace, and partly because Narcissus would show her no love or kindness, poor Echo pined and faded away till nothing was left of her but her voice—and even that, as you know, is often only a faint shadow of a voice. Even in those days of ignorance people knew that wrong-doing always brought its own punishment with it. Because Echo misused the great gift of speech, it was taken from her, and she could never again utter words of kindness or truth out of her own heart, but only imitate the words of other people, whether she approved of them or not. But we are forgetting poor Narcissus. Well, one day as he wandered through the forest, he found a clear pool of water shining like a mirror. Stooping down to drink, he saw gazing up at him a face of wonderful beauty. As he smiled it smiled back again, until he was entranced with this new pleasure. Giving up all his other occupations, he returned day after day to the fountain to gaze delightedly at this image of himself. Neglecting his former playmates, he fell more and more in love with his own reflection in the forest mirror. He grew sadder and more weary day after day, and the face in the fountain began to grow thin and pale too. At last he vanished altogether, and his playmates, coming once more to ask him to join them, found his place empty. They searched through the woods, and called for him long and loudly, but there was no answer except the sad voice of Echo

who plaintively gave back the sound of his name. They found, on the spot where he used to kneel, a cluster of tall and fragrant blossoms newly sprung up, so they knew that their old companion had left them forever and that this little flower was all that was left to them.

Now, children, this is only a story, but be very careful not to follow the example of poor foolish Narcissus. He is not the only person who has fallen in love with his own image and expected all the world to be a mirror in which to reflect it. Don't you know some people who only care to talk about themselves and never think of putting themselves out for others? Are you that kind of person? Remember, selfishness is a habit which will grow stronger each day if it is not checked, and now—while you are young—is the time to check it. Cultivate habits of loving consideration for the feelings and wishes of others: such habits soon become second nature.

Another thing—don't cultivate the habit of looking too much into mirrors. You may not be foolish enough (and possibly you are not beautiful enough) to fall in love with your own face; but it is a very silly occupation, and the time might be much better employed. There! you have had an old fable with the moral attached. When I was your age I always skipped the moral of a story. See that you behave better than—

Your loving friend, COUSIN DOROTHY.

The Gossamer Spider.

There is a noiseless spinner dark and small,
Her house a curled leaf or a tuft of heather;

“Two Strings to Her Bow.”

This sweet-looking girl betrays nothing in her downcast face—unless we are supposed to believe her intently bent on the intricacies of her needlework. Which is the favored “string” we cannot venture to say. Is she a coquette? We hope not, for she looks so innocent and fair. Yet folks do say that the heart of woman is a riddle. Perhaps she has not yet made up her mind—and it is surely better not to decide in a hurry. The visiting suitor looks as though he likes not the attitude of his rival, which has a quite-at-home air, somewhat irritating. Even the pet cat seems accustomed to him and has a feline smile on her face, the result of a judicious tickle on her furry cheek. By the costumes we see that this all happened (if it ever *did* happen) long, long years ago; and we do hope there was no quarrel—perhaps even a *duel*—between these two good-looking young fellows. Very likely our pretty heroine married someone else after all, and the two “strings” sought other brides. This seems a prosaic ending, though, does it not? To take the other view, then—it is reasonable to infer that one of these lovers is successful; but whether it be he of the long riding-boots, or pussy's friend, it is hard to tell. The quaint room, with its old-fashioned fireplace and desk, forms a charming environment for these three interesting young people.

UNCLE TOM'S DEPARTMENT.

MY DEAR NEPHEWS AND NIECES,—

While chatting recently to an acquaintance who lives in town, our conversation drifted to the subject of “neighbors,” and I was struck by the fact that this person seemed to have been particularly unfortunate in this respect, as her neighbors—who invariably seemed quite nice at the outset—almost always deteriorated to such an extent that, with but few exceptions, they were classed as “ignorant, mean, and unworthy of trust.” How much of this was due to the speaker herself, I wonder? Unconsciously the thought arose in my mind, and the conclusion arrived at was not favorable to the complainant.

This reminds me of the story of a man who was leaving his native town because he had such bad neighbors he could no longer endure them. Having given this as the reason for his removal, he was asked by an inn-keeper to what town he purposed going? Upon naming it, he was surprised to hear his interrogator reply: “You will find just the same sort of neighbors there.” This very tersely explains both the trouble and the remedy—pride and selfishness are the two great stumbling-blocks in the way of true neighborliness.

There are people who think the world and all their fellow-creatures should be used as vehicles to promote their pleasure and temporal welfare; they are always on the alert to serve “number one”; they will take all and give nothing; and then expect others to bow down to them and even applaud their superior qualities. This class of people usually dislike their neighbors, for the admirable virtue of meekness is, as yet, too incompletely developed in the sons of Adam to allow them to submit to such arrogance; and those who expect such deference are consequently disappointed and chagrined.

We need not go to the towns to find such people; they are plentiful enough in the country. Most of us know at least one of the kind—the farmer who is so busy with his own work that he never volunteers to assist a neighbor whose work is behindhand, unless, perchance, the “mighty dollar” looms in view. One of these “look-out-for-number-ones,” whom we shall call X, when threshing-time was at hand, always waited to do a fair share of his own work before going to “the mill,” generally arriving about half-past eight



“TWO STRINGS TO HER BOW.”

She lives alone, within her silken hall,
Or at her window sits, in sunny weather.
Perchance there comes a time of wind and rain,
That fills and tips the meadow lily's chalice,
And brims the hollows of the grassy plain,
And makes an island of the spinner's palace.
What does she then? Discouraged not at all,
She spies beyond the flood some favored highland,
And sits and plans with her ruined hall,
A way by which to leave the sinking island.
She throws a web upon the air, and soon
'Tis caught and lifted by the willing breezes:
So, freed from trouble's, in her light balloon,
Our spinner travels wheresoe'er she pleases!
The fairy gentlefolk that car may borrow
When they would go a journey through the sky:
Keep watch; perhaps to-day, perhaps to-morrow,
You may behold them, drifting, drifting by.
—Edith M. Thomas.

Servant (from next door)—Herr Mayer sends his compliments, and would you please shoot your dog, as it won't let him go to sleep? Neighbor—Give my respects to Herr Mayer, and tell him I shall be much obliged if he will poison his daughter and burn her piano.—*Unterhaltungsblatt.*

No man or woman of the humblest sort can really be strong, gentle, and pure and good, without the world being better for it, without somebody being helped and comforted by the very existence of that goodness.—*Phillips Brooks.*

See particulars in another column of our Christmas Number. Special premiums and \$50 cash prize offer.

o'clock, and even then he had to have his smoke, so that it was nearly 9 a. m. before he went to work. This state of affairs continued till everyone's patience was exhausted, and his neighbors determined to make an effort to cure him. X's threshing-day arrived: six o'clock—no men; seven o'clock—no men. He wondered what had happened! After eight o'clock the "hands" came straggling along, and one and all duly perched upon the fence and proceeded to enjoy a smoke before they offered to do anything. Remonstrance was out of the question—they were only doing what he himself had so often done. But folks say that he no longer tries the old game.

It is easy enough to find in any locality a sufficient number of good neighbors to make life pleasant; all that is necessary is to carry out in everyday life the Golden Rule: "Do unto others as you would that they should do unto you."

The winners of prizes for answers to puzzles in July, August and September are as follows: 1st (\$1.50), M. R. Griffith, London, Ont.; 2nd (\$1.00), Thos. McKim ("Toledo"), Ormead, Ont.; 3rd (75c), Miss Lizzie Conner, Hyde Park, Ont. Closely following are "Dennis," "H. C. G.," Maud Weldy, "Eureka," Jessie Hyde, "Dick," and Peter Hyde. I hope all the old solvers will remain with us and many new ones join us in our next contest.

Your loving—UNCLE TOM.

\$50-IN CASH PRIZES-\$50

Attractive and Acceptable Advertisement Awards..

We intend to give our readers the opportunity to make a little money, and at the same time to benefit others. To accomplish this we offer the following inducements: 25c. for the name of every new subscriber, and seven additional cash prizes for the largest lists of names forwarded to us: \$15.00 for the highest number, \$12.00 for the second, \$10.00 for the third, \$8.00 for the fourth, \$4.00 for the fifth, \$2.00 for the sixth, \$1.00 for the seventh.

The winners of the special prizes will also receive 25c. for each new name, thus securing quite a considerable sum of money; hence every one will be fully compensated for any trouble they may take.

Each new name must be accompanied with \$1.00, the price of a year's subscription to the FARMER'S ADVOCATE, and the addresses of the subscribers and sender plainly written. They must be mailed not later than Dec. 31st. To begin with, the person getting up the club must be a subscriber.

To each new subscriber we intend giving the balance of this year's numbers entirely free. This will include our magnificent special Christmas number, with its numerous beautiful engravings, and replete with interesting matter for every member of the household,—single copies of which will cost 50c.

By this arrangement, each new subscriber will be entitled to receive the FARMER'S ADVOCATE for the next fourteen months for the price of one year's subscription.

Show our journal to all your friends and neighbors, and see what you can do,—WE'LL DO THE REST!!

Our regular salaried agents and agricultural society and farmers' institute lists are excluded from this competition.

Removing Stains.

Coffee.—Lay the stained portion of the cloth over a bowl and pour boiling water through it.

Fruit.—Boiling water as above; if ineffectual, rub with a solution of oxalic acid and rinse in warm water.

Ink.—Dip in boiling water, rub with salts of sorrel, and rinse well.

Blood.—Soak in cold water. For ticking and thick goods make a thick paste of starch and water; leave till dry, and brush off.

Scorch.—Dip in soapsuds and lay in sun; if fibers are not much injured, dip repeatedly in saturated solution of borax and rinse.

Mildew.—Wet with soapsuds; lay in sun; spread with a paste of soft soap and powdered chalk, and sun it; soak in buttermilk, and sun.

Grass.—If fresh, use alcohol and rinse; or use Javelle water and rinse thoroughly.

Paint.—Turpentine for coarse goods, benzine or naphtha for fine.

Grease.—Moisten with strong ammonia water, lay blotting paper over and iron dry; if silk, use chloroform to restore color, or cover with powdered French chalk and iron.

POETS' CORNER.

Selected by "Ajax," Erin, Ont.

God of our fathers, known of old—
Lord of our far-flung battle line—
Beneath whose awful hand we hold
Dominion over palm and pine,
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

The tumult and the shouting dies,
The captains and the kings depart;
Still stands Thine ancient sacrifice,
An humble and a contrite heart.
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

Far called, our navies melt away—
On dune and headland sinks the fire—
Lo, all our pomp of yesterday
Is one with Nineveh and Tyre.
Judge of the nations, spare us yet,
Lest we forget—lest we forget!

If drunk with sight of power we loose
Wild tongues that have not Thee in awe—
Such boasting as the Gentiles use,
Or lesser breeds without the law—
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

For heathen heart that puts her trust
In reeking tube and iron shard—
All valiant dust that builds on dust—
And guarding, calls not Thee to guard—
For frantic boast and foolish word,
Have mercy on Thy people, Lord!
—Rudyard Kipling.

Gathering Song.

Pibroch of Donuil Dhu,
Pibroch of Donuil,
Wake thy wild voice anew,
Summon Clan Conuil.
Come away, come away,
Hark to the summons!
Come in your war array,
Gentles and commons!

Come from deep glen and
From mountain so rocky;
The war-pipe and pennon
Are at Inverlochy.
Come every hill-plaid, and
True heart that wears one!
Come every steel blade, and
Strong hand that bears one!

Leave untended the herd,
The flock without shelter;
Leave the corpse uninterred,
The bride at the altar;
Leave the deer, leave the steer,
Leave nets and barges;
Come in your fighting gear,
Broadsword and target!

Come as the winds come, when
Forests are rended;
Come as the waves come, when
Navies are stranded;
Faster come, faster come,
Faster and faster—
Chief, vassal, page and groom,
Tenant and master.

Fast they come, fast they come;
See how they gather!
Wide waves the eagle plume
Blended with heather.
Cast your plaid, draw your blades,
Forward each man set!
Pibroch of Donuil Dhu
Knell for the onset!—Sir Walter Scott.

This distinguished Scotch poet and novelist was sent, in early childhood, from his home in Edinburgh to live with his grandfather, a farmer. Here he was impressed by the scenery of the district, and in later years, when practising as a young lawyer in Edinburgh, he made trips to the country and composed ballads, which were published in the "Minstrelsy of the Scottish Border." In 1805 he wrote his "Lay of the Last Minstrel," and afterwards "Marmion" and the "Waverley Novels," besides other short poems and novels.

The Beleaguered City.

I have read in some old marvelous tale,
Some legend strange and vague,
That a midnight host of spectres pale
Beleaguered the walls of Craque.

Beside the Moldan's rushing stream,
With the wan moon overhead,
There stood, as in an awful dream,
The army of the dead.

White as a sea-fog landward bound,
The spectral camp was seen;
And with a sorrowful, deep sound,
The river flowed between.

No other voice nor sound was there;
No drum nor sentry's pace;
The mist-like banners clasped the air,
As clouds with clouds embrace.

But when the old cathedral bell
Pre-announced the morning prayer,
The white pavilions rose and fell
On the alarmed air.

Down the broad valley fast and far
The troubled army fled;
Up rose the glorious morning star;
The ghastly host was dead.

I have read in the marvelous heart of man
That strange and mystic scroll,
That an army of phantoms vast and wan
Beleaguered the human soul.

Encamped beside Life's rushing stream,
In fancy's misty light,
Gigantic shapes and shadows gleam
Portentous through the night.

Upon its midnight battle ground
The spectral camp is seen,
And with a sorrowful, deep sound,
Flows the River of Life between.

No other voice nor sound is there,
In the army of the grave;
No other challenge breaks the air
But the rushing of Life's wave.

And when the solemn and deep church bell
Entrasts the soul to pray,
The midnight phantoms feel the spell,
The shadows flee away.

Down the broad vale of tears afar
The spectral camp is fled;
Faith shineth as a morning star,
Our ghastly fears are dead.

Henry Wadsworth Longfellow's chief works are his long poems, "Evangeline," "Hiawatha," and "Miles Standish." Besides these, he has written numerous short poems and several dramas.

Poems selected by Miss Mary M. Ross, Watford, Ont., from E. Pauline Johnson.

Miss E. Pauline Johnson, the well-known Indian poetess and reciter, is a descendant of the famous Indian chief, Joseph Brant. She was born near Brantford, Ont., and her name is well-known throughout Canada on account of the particularly pleasing poems she composes and recites.

Moonset.

The night wind idles through the dreaming fire,
That waking, murmur low,
As some lost melody returning stirs the love of long ago;
And through the far cold distance, zephyr-fanned,
The moon is sinking into shadow-land.

The troubled night-bird, calling plaintively,
Wanders on restless wing;
The cedars, chanting vapors to the sea, await its answering—
It comes in wash of waves along the strand;
The while the moon sinks into shadow-land.

O music of the night! your minstrelsy
Is tender as the tone
Of some dear voice out calling unto me,
Responsive to my own;
Your harp-strings throb beneath an unseen hand,
And sing the moon to sleep in shadow-land.

The Bird's Lullaby.

Sing to us, cedars; the twilight is creeping
With shadowy garments the wilderness through;
All day we have carolled, and now would be sleeping,
So echo the anthems we warble to you;
While we swing, swing, and your branches sing,
And we drowse to your dreamy whispering.

Sing to us, cedars; the night wind is sighing,
Is wooing, is pleading to hear your reply;
And here in your arms we are restfully lying
And longing to dream to your soft lullaby;
While we swing, swing, and your branches sing,
And we drowse to your dreamy whispering.

Sing to us, cedars; your voice is so lowly,
Your breathing so fragrant, your branches so strong;
Our little nest-cradles are swaying so slowly,
While zephyrs are breathing their slumberous song.
And we swing, swing, while your branches sing,
And we drowse to your dreamy whispering.

In the Shadows.

I am sailing to the leeward,
Where the current runs to seaward
Soft and slow;
Where the sleeping river grasses
Brush my paddle as it passes
To and fro.

On the shore the heat is shaking,
All the golden sands awaking
In the cove;
And the quaint sandpiper, winging
O'er the shallows, ceases singing
When I move.

On the water's idle pillow
Sleeps the overhanging willow,
Green and cool,
Where the rushes lift their burnished
Oval heads from out the tarnished
Emerald pool.

Where the very water slumbers
Water-lilies grow in numbers,
Pure and pale;
All the morning they have rested—
Amber crowned and pearly crested,
Fair and frail.

Here impossible romances,
Indefinable sweet fancies,
Cluster round;
But they do not mar the sweetness
Of this still September fleetness
With a sound.

I can scarce discern the meeting
Of the shore and stream retreating,
So remote;
For the laggard river, dosing,
Only wakes from its reposing
Where I float.

Where the river mists are rising,
All the foliage baptizing
With their spray,
There the sun gleams far and faintly,
With a shadow soft and saltly
In its ray.

And the perfume of some burning
Far-off brushwood, ever turning
To exhale;
All its smoky fragrance dying
In the arms of evening lying
Where I sail.

My canoe is growing lazy
In the atmosphere so hazy
While I dream;
Half in slumber I am guiding
Eastward, indistinctly gliding
Down the stream.

"Confound you an' your old shop!" shouted the man who had backed up against the fresh paint. "Didn't you see the sign 'Fresh Paint'?" asked the fish dealer. "Of course I did; but I've seen so many signs hung up here announcing something fresh that I didn't believe it."

Any present subscriber sending us in two new subscribers and \$2.00 will have his or her subscription extended for one year.

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.]

This column is open to all who comply with the following rules: Puzzles must be original—that is, must not be copied from other papers; they must be written on one side only of paper, and sender's name signed to each puzzle; answers must accompany all original puzzles (preferably on separate paper). It is not necessary to write out puzzles to which you send answers—the number of puzzle and date of issue is sufficient. Partial answers will receive credit. Work intended for first issue of any month should reach Pakenham not later than the 15th of the month previous; that for second issue not later than the 5th of that month. Leave envelope open, mark "Printer's Copy" in one corner, and letter will come for one cent. Address all work to Miss Ada Armand, Pakenham, Ont.]

1.—RIVERS.

- 1. s-r.
2. -r-a.
3. T-le.
4. -o-y-l.
5. K-k-k.
6. -e-o-o-o-o.

- 7. -u-.
8. -ss-u-b-i-e.
9. -u-e-t.
10. C-e-t-n.
11. -a-of.
12. S-m-so.

UNA SHEPHERD.

2.—RHOMBOID.

Diagram.

Across: 1, a flower leaf; 2, evening amusement; 3, a collection of birds; 4, approaches; 5, P. P. of ride and a consonant. Down: 1, a consonant; 2, example (abbr); 3, a cat; 4, so be it; 5, a mechanical power; 6, a body of water and a vowel; 7, yard (abbr); 8, two-thirds of a large body of water; 9, a consonant.

3.—CHARADE.

My first will make the baby grow— 'Tis good for man and post; My second decidedly none would sow Unless he did not know it.

MABEL ROSS.

4.—NUMERICAL ENIGMA.

I am composed of 18 letters: My 15, 14, 15, 14, 5 is a nut; My 6, 11, 4, 17, 18, 6 is a support; My 2, 3, 16, 9, 1 is an organ of the body; My 2, 3, 5, 12 is chief; My whole we'd much miss.

C. B. M.

5.—AN HOUR-GLASS.

Diagram.

1, tatters; 2, fleshy; 3, a tool; 4, one-third of ten; 5, part of an animal; 6, languor; 7, dancing. Diagonals from left down form the name of an animal and an article made from its skin. From right down—boils.

"DICKENS."

6.—CONUNDRUM.

Cato and Chioe combined well together Make a drink not amiss in very cold weather.

A. F. F.

7.—CONUNDRUM.

If it is four hundred miles from London to Pakenham how many ladies, standing hand in hand, starting at London, would reach Pakenham; and why would it take this certain number of ladies?

"DICKENS."

8.—CROSS-WORD ENIGMA.

In pocket, not in pouch; In chair, not in couch; In kettle, not in pan; In child, not in man; In March, not in May; In river, not in bay; In wagon, not in cart; In market, not in mart; In grotto, not in cave.

Whole, a hero brave whose deeds all Englishmen do praise. "ARRY AWKINS."

9.—ENIGMA.

The priest wears me; Long and flowing robe am I. My second controls my third and conquers the violence of my first by means of my whole. My first is ever moving, yet ever stationary. My third moves under the guidance of my second with the help of my whole.

"DICKENS."

10.—CHARADE.

- 1. A commonly used verb.
2. A preposition denoting presence.
3. A conjunction expressing supposition.
4. A pronoun.
5. A verb meaning to raise an anchor.
6. A pronoun.
7. An interjection used to incite to action.

The whole is an act of the Pope, making declaration with regard to one who is dead. "EUREKA."

11.—CHARADE.

My first carries my third, my third carries my second, and my second has my whole. My first and second are works of God. My third and whole are works of my second. My second controls my third and conquers the violence of my first by means of my whole. My first is ever moving, yet ever stationary. My third moves under the guidance of my second with the help of my whole.

"OGMA."

12.—RIDDLE.

What is that which will go up a small pipe down, but will not go down a large pipe up?

"OGMA."

13.—TRANSPOSITION.

Lal gthnsd tth ew evol dan hstoric Kiel sseovulr tmsw daef nad hperic Hous si row drew raimo oil Lovo lfais dwtlow ddi hyle ton.

THE KHAN.

14.—ANAGRAM.

Mrs. MANDA DASIA is sitting all the while. Her dress is silk and satin, for she's keeping with the style. The other day she went to town the hours away to while. And bought herself a new silk gown, and now she's all a smile.

"DICKENS."

Answers to October 1st Puzzles.

- 1.—Skin-fint.
2.—O fte R.
3.—ADVOCATE.
4.—C R U M B
5.—s p a n e l
6.—Bay-leaves.
7.—l a t e r
8.—Sheep, camel, tiger.
9.—25 x 50 = 1,250 sq. yards.
10.—Prince Edward Island.
11.—Champ-I-on-ship.
12.—Whip-poor-will.
13.—Eneacontahedral.
14.—R E N A L
15.—p a n e l
16.—a g i l e
17.—U N I T E
18.—a n g l e
19.—t i m e s
20.—M A T I N
21.—r e l i c
22.—c l e c t
23.—B L E N D
24.—e l e c t
25.—r e s t s

SOLVERS TO OCT. 1ST PUZZLES.

"Arry 'Awkins"; Wm. Binkley; "Dennis"; "Toledo"; "Dick."

ADDITIONAL SOLVERS TO SEPT. 15TH PUZZLES.

"Toledo"; Maud Weld; Una Shepherd; Lizzie Connor; Eureka."

COUSINLY CHAT.

Una.—Why do you wait so long between your visits? "Hazel."—"Madge," and "Pansy."—"We want you back again. Where have you been?" "Annie Laurie" and "Essex."—"I believe you two have eloped, for not a line ever comes from either of you. Why, Annie, do you not write? And "Perdita," too? "Arry 'Awkins."—"Exceedingly glad to hear from you again. "Arry 'ow's Jenny? Well, I ope. "Dickens."—"An sorry you have taken offense at my words to M. M. Why take them to yourself? They were not specially meant for you. Referring to the puzzle I asked about (the one whose answer was "icicle"), I certainly saw the same several years ago. As yours was original, I beg pardon for the question, but really so striking a coincidence justified my asking it. M. R. G.—Congratulations. You see your address was needed, as I anticipated. "Toledo."—"Same to you and also to Miss C. Wonder who will be ahead next time. A. F. F.—You did not send the answer to your double anagram, but you can send it later. "OGMA."—"I think you made a slight mistake when computing the answer to No. 9 in Oct. 1st issue. "Essex."—"A letter from you arrived after I had written the above. I am so glad to hear from you and to know you have so good a situation. Did you?

Good society is that which can give a dinner without sending a notice of it to the newspapers; can introduce a daughter without having her frocks made the subject of a paragraph, and which believes that the family and its happiness is of more importance than the booming of a beauty or being counted among the Four Hundred.

GOSSIP.

See the change of advertisement of W. C. Shearer in this issue of Barred Plymouth Rocks. This would be a fine opportunity to present the boys or girls on the farm with a pair or trio of birds. Being the possessors of some stock on the farm, they would no doubt try how well they could succeed with them.

The Oxford County Fat Stock Club will hold their annual fat stock show at Woodstock, December 5th and 6th, a date which fits in well between the Brantford and Guelph shows, so that exhibitors may make a circuit of the three events. A liberal prize list has been issued. M. S. Schell, Woodstock, is the secretary.

Mr. John Duncan, Thorndale, Ont., announces in this issue an important auction sale of Shropshires. These will be sold along with all his farm stock, etc., without reserve, as the proprietor has leased his farm. Some of the rams offered were bred by the well-known Shropshire men, Mr. Phin, of Hespeler, and Mr. Cooper, of Kippen, Ont.

Mr. John Laidlaw, Wilton Grove, near London, Ont., has been for many years a successful breeder of Leicester sheep, and has an excellent flock of well-bred sheep which has been kept up-to-date by the use of first-class sires and retaining superior ewes. Mr. Laidlaw's thorough knowledge of Leicesters may be inferred from the fact that he was a judge of this class in Toronto this year. He has a nice lot of ram lambs and ewes of various ages for sale.

D. J. Gibson, Bowmanville, Ont., writes: "The young Holstein bulls I offer are an exceedingly good lot. They are well marked, and have won many prizes this fall at the local fairs. My heifers are also good ones and not coarse. They are sired by the famous bull, Lady Waco's Mink Mercedes. My young Tamworths are a very even lot and of good individual merit, and as I am overstocked I will sell them very cheap. Any person wanting Holsteins or Tamworths should write for prices before buying."

Mr. John Campbell, Fairview Farm, Woodville, Ont., whose new advertisement appears elsewhere in this issue, has as good a lot of Shropshires to select from as he has hitherto offered. His flock this season has had unequalled success, winning about 75 per cent. of the first prizes at Toronto, London, and Ottawa. The flock has during the 17 years of its existence reached such a high point of excellence and constantly maintained it that purchasers cannot fail in securing stock of superior merit and most aristocratic breeding in placing their orders for Fairview Shropshires.

As a reminder of the fallacy of discarding a well-proved sire simply because he is advancing in years, we call attention to the fact that the sweepstakes Shorthorn female at the Maritime Province exhibitions (illustrated on another page of this issue) was sired by the well-known stock and show bull, Challenge—2933—, in his 15th year, and he was useful as a sire up to his 17th year, when he went to the butcher. A. Heron, lived and proved useful up to his 15th year. How much safer to breed to a bull that has been tried and proved a success than to one that is untried.

Mr. Howard Fraleigh, Forest, Ont., places an advertisement of his herd of Jerseys in the FARMER'S ADVOCATE. Two years ago Mr. Fraleigh imported from Tennessee 10 head of high-class cows and heifers, and one bull, richly bred in the blood of the two great Torrington and St. Lambert families. These have increased rapidly, and he has now one of the best small herds of Jerseys in the country, both in individual merit and in breeding, their pedigree tracing to many of the highest producing members of the breed in America, and the animals themselves showing all the indications of high-class dairy stock and true to the best characteristics of the breed. Mr. Fraleigh's farm is close to the town, which is a first-class station on the G. T. R., and he will be pleased to show his stock to visitors or to answer enquiries.

Mr. D. C. Flatt, Millgrove, Ont., has established a first-class herd of improved Yorkshire hogs on his "Summer Hill" farm, some five miles from the City of Hamilton, and has shown commendable enterprise in securing foundation stock of the best quality and most approved type, regardless of cost. The stock bear, Look-Me-Over—2602—, at the head of the herd is acknowledged to be one of the very best, if not the best, of the breed on the continent of America, having won first prize in strong competition at the Toronto Industrial Exhibition, where the best ones meet to try conclusions, and it goes without saying that a hog that can win at Toronto is good enough to face the world, for the English Royal winners have more than once been turned down here. Look-Me-Over will bear looking over by the most critical judge, either from the standpoint of the bacon-curer or of the breeder and feeder. He has great constitution, good length and depth of body, a strong, well-fleshed back, smooth shoulders and long and deep hams, and stands well on strong, straight legs, while the fineness of his hair and the smoothness and firmness of his flesh are all that could be desired. He also won first prize at the Ottawa Central Exhibition and at several local fairs, and stands unbeaten. Prominent among the breeding sows in the herd is imported Royal Duchess 2nd, winner of first prize at the Royal Show at Birmingham, England, in June, 1898, as the best sow farrowed within the year. This sow was bred to a prizewinning boar at the same show, and will be due to farrow about the 20th of November. She is a model of the breed, being lengthy, deep, and smooth, built after the bacon type, and full of quality. Fifteen other fine breeding sows are kept, all of which have been bred direct from first-class imported stock and are well up to the standard in all desirable qualities, and it is the intention to increase the number and to maintain the character of the herd as one of the best in the Dominion.

GUELPH FAT STOCK SHOW.

The Fat Stock Club and the Poultry Association of Guelph will hold their annual show in the City of Guelph, Dec. 6th, 7th and 8th, when a liberal list of prizes will be held up for competition, and as there will be no clashing of dates with other shows of the same character this year there is every reason to anticipate a large entry of stock and a large attendance of visitors. See the advertisement in this paper and send for prize list to the secretary, Mr. John McCorkindale, Guelph, Ont.

Mr. Samuel W. Urwick, secretary of the Hereford Herd Book Society of England, died recently at the age of 77 years.

Denmark and Russia have been lately importing considerable numbers of Yorkshire swine from England for breeding purposes.

The Royal Show for 1899 will be held June 19-23 at Maidstone, a town of some 39,000 population, on the Medway in Kent, 33 miles south-east of London.

Mr. E. Duol, Harrington, Ont., advertises in this number of the FARMER'S ADVOCATE a large stock of Yorkshire pigs from three to seven months old, both sexes, bred from registered stock.

Robert Vance & Sons, Ida P. O., Ont., are breeders of high-class English Berkshires and Cotswolds, with enviable prizewinning records. See their announcement in this issue.

Mr. Robert Miller, Brougham, Ont., recently shipped per C. P. R. 28 Shorthorn bull calves to Senator Cochrane at Lethbridge, N. W. T., for his Alberta ranch. Mr. A. Ironsides also shipped one car of breeding sows to Lethbridge.

Metcie will honorably be the post-office address of Alex. Hume & Co., breeders of Ayrshire cattle and Yorkshire swine, instead of Burnbrae as formerly, the change being made owing to the death of the late aged and respected P. M. at the latter office and the removal of the office a mile or two.

Jas. A. Russell, Precious Corners P. O. (Cobourg Station, G. T. R.), writes: "My stock of Berkshires and Yorkshires are in good shape; my breeding stock never was in better trim; my fall litters are coming strong from different sires. A visit to my herd will convince anybody that I have the right type of Berkshires and Yorkshires for the bacon trade. I have been very successful at the fall fairs, having won 23 first prizes and 15 seconds, diplomas on both breeds, and one herd prize on Yorkshires and one on Berkshires."

DAIRY EXHIBIT AT LISTOWEL, ONT.

A dairy exhibit will be held in connection with the annual convention of the Cheese and Butter Makers' Association of Western Ontario at Listowel, Feb. 1st and 2nd, 1899. Prizes to the amount of \$150 will be given, competition being open to members only. Class 1, sec. 1—1 Sept. cheese, white. Class 1, sec. 2—1 Sept. cheese, colored. Class 2, sec. 2—1 package, 56 lbs., winter creamery butter. Class 2, sec. 2—25 prints, of one pound each, winter creamery butter. The Association will buy the cheese scoring the highest number of points and cut it up for the members, and at the same time the judge will address the meeting on the qualities of fine cheese.

The Last of the Booths.

Mr. William C. Booth (brother of the late T. C. Booth and J. B. Booth), of Orun, Catterick, owner of the famous herds of Shorthorns at Warlaby and Killerry, on entering his carriage to keep an appointment on the 30th Sept., fell forward and died within a few minutes. The deceased gentleman had suffered for some time past from heart disease. He was the last of the Booth family, and had charge of the Warlaby herd for over twenty years. He took a most active interest in the work of the Royal Agricultural Society, the Yorkshire Society, and the Shorthorn Society, and was held in high esteem by all who knew him.

NOTICES.

The season for cider-making, preparing fruit jellies, and drying fruit by evaporation is with us, and the latest improved apparatus for these purposes is advertised in this paper by the G. H. Grimm Mfg. Co., of Montreal, who are up-to-date in this line with their Champion evaporator, particulars of which may be obtained by addressing them as above.

The Ontario Veterinary College, Toronto, Canada, commenced its session Wednesday, Oct. 12th, with the opening lecture, which was delivered by the Principal, Prof. Andrew Smith, F. R. C. V. S., at 11 o'clock. Prof. Smith's address was listened to with much interest by an intelligent class of students collected from the Dominion, the United States, and the British Isles.

The farm of the late J. G. Snell, at Snellgrove, Ont., four miles from the town of Brantford and 25 miles from the City of Toronto, advertised in this issue to be sold by auction on Dec. 10th, is one of the best in the banner county of Peel. The soil, naturally of the best quality, has been kept in a high state of fertility by feeding stock on it largely for forty years. The buildings are roomy, substantial, and in good repair, and all improvements are of a permanent character. The location is convenient, the terms of sale easy, and the property one of the most desirable in the Province.

Elsewhere in this issue will be found an advertisement of the fall and winter session of the Western Dairy School. This school has been equipped with a complete outfit of the best modern machinery and apparatus known to the "creamery" and "dairy" trade on this continent. Farmers' sons and daughters, salesmen, directors, managers, and patrons of creameries; cheesemakers who desire to learn butter-making; and all who desire to get an intelligent idea of the equipment, operation and business management of an up-to-date creamery should take a course at this school. Already applications for admission are coming in, and the coming session promises to be a busy one.

WIRE FENCE INDUSTRY.

A large amount of interest is now being taken in the different styles of wire fencing. The farmers now consider it to be a fact that wire fencing is the coming fence on account of its durability. The Bowen Cable Stay Fence Co., of Norwalk, O., U. S. A., whose advertisement appears elsewhere in this paper, manufacture a wire fence machine which they claim to be the best on the market. The machine sells for \$10, and is guaranteed to give the best of satisfaction. This company has sold over four thousand machines in the last three years in the U. S. and Canada. There is no duty to pay on their goods, as they are shipped from Hamilton, Ont. Address all correspondence to Norwalk, Ohio. Agents wanted. Write them for large circular.

O. A. C. STUDENTS AT OMAHA.

At the inter-agricultural college competition in judging fat cattle, sheep, and swine at the Omaha Show, Mr. J. H. Gridale (Russell Co., Ont.), now at the Iowa Agricultural College (late of the O. A. C. Guelph) won first prize of \$125 and Mr. W. J. Kennedy, also of Russell Co., another ex-O. A. C. student (both associates of 1898, and who went to Iowa recently after their two years' course at Guelph), captured 3rd, \$50. The prizes in the competition were donated by Clay Robinson & Co., of Chicago.

THE SATURDAY EVENING POST

The Oldest Paper in America FOUNDED A. D. 1728 BENJAMIN FRANKLIN

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



We have the literary resources of the world to draw upon. The best writers of the world are practically a retained corps of contributors. It would be impossible for any magazine, no matter how boundless its wealth, to obtain, as original matter, the wealth of literature we have to offer weekly. The handsome illustrations in the Post are original.

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

ONLY TEN CENTS, Silver or Stamps

(The regular subscription is \$2.50 per year)

THE CURTIS PUBLISHING COMPANY, Philadelphia

Shorthorns & Clydesdales

Having recently made a large importation of Shorthorn cattle from Ayrshire, Scotland, I will call a public auction sale early in January, at which I will dispose of as good a lot of stock as ever passed under the hammer on this continent. Watch future numbers of the FARMER'S ADVOCATE for my special announcement, and gossip, giving full particulars, etc.

JOHN ISAAC, Markham, Ont. J. M. GARDHOUSE, HIGHFIELD P. O., ONTARIO.

SHIRES, SHORTHORNS AND LEICESTERS,

Offers for sale: 1 yearling stallion, dam sweepstakes mare; also, young bulls, a few cows and calves; Leicester rams and ewes of the choicest breeding and quality.

"The best is none too good," is our motto. Malton Station (2 miles) and telegraph office.

4 SHORTHORN BULLS

from 5 to 18 months, by Elvira's Saxon 21624 and from Viola bred dams. R. MITCHELL & SON, Burlington Station. Nelson P. O.

SHORTHORNS

OF THE Grimson Flower and Minnie Strains



And from such sires as Scotchman 2nd, Duke of Lavender, Premier Earl, Indian Chief, and Clan Campbell. A few splendid young bulls ready now. Cotswold Sheep.

DAVID BIRRELL, GREENWOOD, ONT.

HAWTHORN HERD

OF DEEP MILKING SHORTHORNS. For sale: 4 young bulls of the choicest breeding and good quality, and from A 1 dairy cows. WM. GRAINGER & SON, Londesboro, Ont.

The Smithfield of Canada!

GUELPH CHRISTMAS FAT STOCK AND POULTRY SHOW.

The seventeenth annual Christmas Fat Stock and Poultry Show, under the auspices of the Guelph Fat Stock Club and Guelph Poultry Association, will be held in the Victoria Curling and Skating Rink, in the City of Guelph, on Tuesday, Wednesday and Thursday,

DECEMBER 6th, 7th and 8th, 1898.

Prize lists on application. JAMES MILLAR, President. JNO. M'CORKINDALE, Secretary.

Shorthorns, Shropshires and Berkshires.

Indian Statesman - 23004 - at the head of the herd. 12 choice young bulls, and 15 two-year-old heifers and young cows forward in calf; 15 ram lambs, quality, got by Imp. Flashlight, and 12 choice yearling ewes, and Berkshire boars and sows of all ages.

W. G. PETTIT & SON, FREEMAN P. O. Farm 1 mile from Burlington Station, G. T. R.

GOSSIP.

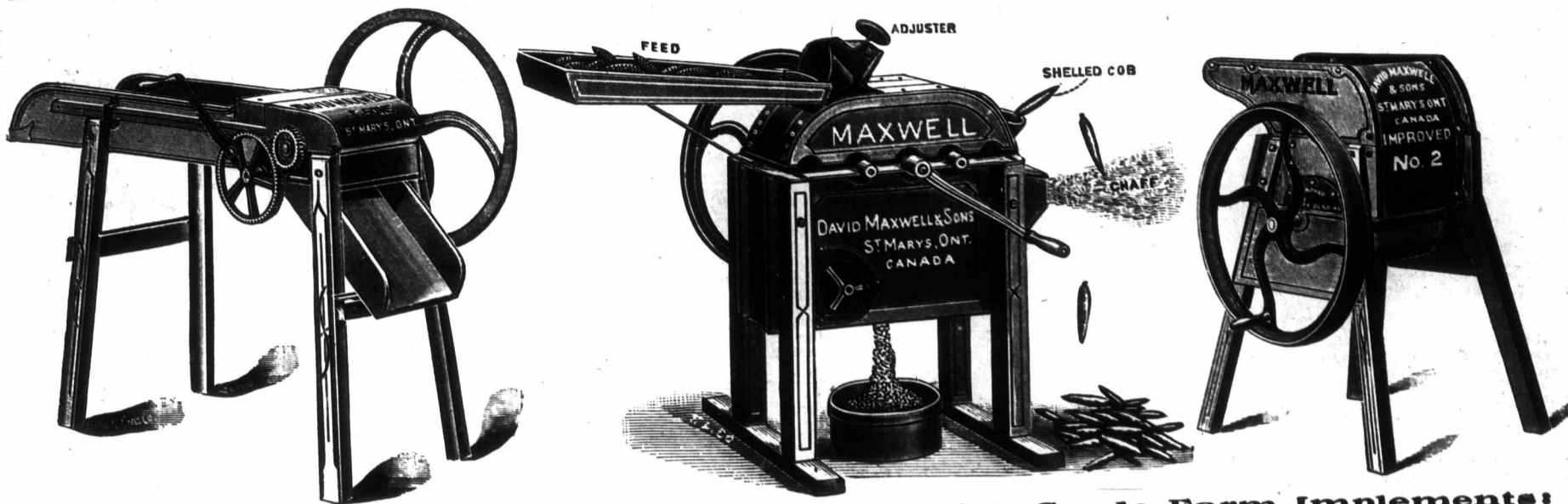
TREDINNOCK HERD OF AYRESHIRE. Within a stone's throw of Ste. Anne de Bellevue station, G. T. R., and less than a quarter of a mile from the station of the same name on the C. P. R., 21 miles west of Montreal, is the fine 330-acre farm and magnificent farm buildings of Robert Reford, Esq., of Montreal City, under the efficient superintendence of Mr. James Boden, a careful and capable farm manager and stockman, and a critical judge of dairy cattle. The leading feature of the farm is the splendid herd of some 70 head of registered Ayrshire cattle kept on the farm, representatives of which are illustrated in this issue, which is up-to-date in every respect and doubtless unsurpassed, probably unequalled, by any other herd on the continent. Standing at the head of the herd as the stock sires are the two famous imported bulls, Glencairn 3rd and Napoleon of Auchencrain. The former has proven himself a sire of wonderful impressiveness, as indicated by the uniformly high character of his produce now in the herd, numbering about 30 head of young cows and heifers, the equal of which we have never seen together on one farm. Glencairn 3rd is a model dairy bull in conformation and quality, his rich yellow skin, soft, silky hair, and fine handling quality being of the highest order, and his sons and daughters show the same properties in a marked degree, while the latter have invariably well-formed udders and good sized and well-placed teats, and those in use are proving exceedingly satisfactory milkers both in regard to quantity and quality. Napoleon of Auchencrain 3308, the bull in our illustration, winner of the first prize in his class and sweepstakes as best bull of the breed of any age at the Toronto Industrial Exhibition, Canada's greatest show, where he also stood at the head of the first-prize herd, was selected by Mr. Boden and imported for the purpose, mainly, of mating with the daughters of Glencairn 3rd, a mission for which he is peculiarly well adapted, and which, judging from the appearance of his first crop of calves, which have been coming along for the last three months, he is nobly fulfilling, for a stronger, straighter and deeper lot of youngsters it has never been our lot to see. Napoleon is large, lengthy, and straight in his lines; has a long, fine, yet muscular neck, a strong back and loin, wide hips, long and level quarters, not fleshy, but a big, bony framework, roomy, and calculated to give capacity for feeding and for udder development in his daughters. His thighs are wide and thin, his flanks deep, and his skin and hair soft and mellow to the touch, while he has behind him in his pedigree a succession of the most noted prize-winning and milk-producing ancestry in the land of heather. Among the older imported cows included in the herd are the two notable matrons, Anne of Barchesk and Nellie Osborne, companions in the late Tom Brown's best importation, the latter a prizewinner at the World's Fair at Chicago and first repeatedly at Canada's leading shows, and still in the heyday of her usefulness; both she and her mate being large milk producers and capital breeders. Of the more recent importations Primrose of Holsheuse 3309 (see illustration), winner of second prize in the great competition at Toronto, 1898, is one of the truest types of the best of the breed, and Lady Sterling 3rd (in illustration), winner of second prize at the Western Fair at London over her stable companion last named, has the ideal form of frame and milk vessel for a typical Ayrshire. Kersey of Auchencrain, by the same sire as Napoleon, due to calve last month, having been mated with Glencairn 3rd, has a model-shaped udder of large dimensions and has elegant dairy conformation; while Loantaka, winner of second as a dry cow at Ottawa, has freshened with a grand show of udder, well balanced and level, with teats set to please the most critical judge. Prominent among the best of the home-bred young cows are Queen of Ste. Anne's, full sister to Royal Star, the 1st prize two-year-old bull at Toronto, and daughter of Glencairn 3rd. The first and second prize two-year-old heifers at Toronto and the first prize heifer calf at the same show, and by the same sire, and which figured in the first prize group of four, the progeny of one sire, at the Industrial, cap the climax of a show record for Glencairn and Tredinnock that has seldom if ever been equalled in America.

AAGIE GRACE 2ND'S PIETERTJE.

On another page we present an illustration of the famous Holstein-Friesian cow, Aaggie Grace 2nd's Pietertje, owned by Henry Stevens & Sons, Lacena, Oswego Co., N. Y. This was the first prize aged cow and also sweepstakes cow at the Victorian Era, Ex-sweepstakes cow at the Victorian Era, Exposition at Toronto, Ont., in 1897. She was also first prize and champion cow at nearly all the leading fairs in the U. S. the same year. This year she is again adding more laurels to her already famous showyard record, as she won first and championship at New York State Fair, New Jersey, Indiana, and Wisconsin State Fairs, also first in her class and sweepstakes at the Omaha Exhibition. She is not only one of the greatest show cows living, but is a great producer as well. She was officially tested one week for butter when six years old by Horace Atwood, of Cornell University Experiment Station, and made 23 lbs. 8.22 oz. butter. During this test she gave in one day 100 lbs. milk. Messrs. Stevens' herd now numbers over 100 head, and is very strong in the De Kol family and also the Hengervelds, acknowledged to be among the richest producing families known. Parties interested in Holsteins should write Messrs. Stevens & Sons.

American Shropshire Association

The report of Mr. Mortimer Levering, secretary at the annual meeting of the Shropshire Association, at Omaha, Oct. 12, showed the business of the past year to have been the largest in the history of the Association. The membership is 1,847. The cash transactions were: On hand last year, \$3,774; receipts, \$11,169; payments, \$9,366; now on hand, \$5,577. Officers elected: President, Hon. John Dryden, Toronto; Vice President, Prof. W. C. Latta, Lafayette, Ind.; Secretary, Treasurer, Mortimer Levering, Lafayette, Ind.; Executive Committee, Richard Gibben, John L. Thompson.



David Maxwell & Sons Manufacturers of St. Mary's, Ontario, Canada,

High-Grade Farm Implements: Binders, Reapers, Mowers, Hay Rakes, Hay Loaders, Hay Tedders, Disk Harrows, Scufflers, Turnip Sowers, Turnip Slicers and Pulpers, Cider Mills, Hand Straw and Corn Cutters, Lawn Mowers, Churns, Wheelbarrows, and Corn Shellers, Iron Jacks, Riding Plows, etc. Agents wanted in all unoccupied territory.

SEND FOR CATALOGUE.

Barred Plymouth Rocks

DIRECT FROM IMPORTED STOCK. A grand lot of cockerels and pullets, well-barred, large, strong, robust, healthy birds. For prices write W. C. SHEARER, BRIGHT, ONTARIO.

GUERNSEYS

This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rich milk. Several fine young bulls for sale at very reasonable prices. A few heifers can be spared. Address: SYDNEY FISHER, Alva Farm, Knowlton, P. Q.

GUERNSEYS

2 Choice Bull Calves... and 5 Heifers for sale... Tamworth and Berkshire Pigs.

W. H. & C. H. MCNISH, LYN, ONT.

Maple Cliff Dairy and Stock Farm. Ayrshire cattle, Berkshire & Tamworth pigs. Two bull calves dropped in February. R. REID & CO., Hintonburg, Ont.

FAIRVIEW STOCK FARM.

Ayrshire Cattle and Berkshire Pigs. Traveller of Parkhill at the head of herd, while my herd is descended from cows purchased of Mr. David Bennet; are modern in type, and are of the choicest milking strains. Write for prices of young bulls and heifers. DAVID LEITCH, Grant's Corners, Ontario.

WM. WYLIE, 288 Bleury St., MONTREAL.

Breeder of high-class Ayrshires. Young stock always for sale; bred from the choicest strains procurable. Breeding stock selected from the most fashionable strains and prize-winning stock of the day. Farm located at Howick, Que.

MEADOWSIDE FARM J. YUILL & SONS, Props.

Breeders of high-class, deep-milking Ayrshires. Sweepstake young herd at Ottawa. Shropshire sheep from prizewinning stock. Berkshire pigs and barred Plymouth Rocks. Young stock for sale. Visitors met at Queen's Hotel. Give us a call.

AYRSHIRES AND RED TAMWORTH SWINE.

Still a few choice young bulls for sale, and a grand lot of Tamworth boars ready for service. Write us now and secure one. GALDWELL BROS., Briery Bank Farm, Orchard, Ont.

CHOICE LOT AYRSHIRE BULL CALVES

Sired by Douglas of Loudoun, bred by D. Morton & Son, Hamilton. Prices right. F. W. TAYLOR, WELLMAN'S CORNERS.

AYRSHIRE CATTLE, BERKSHIRE PIGS

The bull TOM BROWN and the heifer WHITE FLOSS, winners of sweepstakes at World's Fair, were bred from this herd. Young stock for sale. Also Leicester Sheep and Berkshire Swine. D. BENNING & SON, Glenhurst Farm, WILLIAMSTOWN, ONT.

CHOICE AYRSHIRE BULLS

FROM IMPORTED STOCK. We offer Six (6) Bull Calves, for sale from 4 to 11 months old; good individuals, and from the very best milking strains obtainable in Scotland. Thos. Ballantyne & Son, Stratford, Ont.

Ingleside Herefords.

UP-TO-DATE HERD OF CANADA! Tamworths Berkshires. Send for illustrated catalogue. Address: H. D. SMITH, Compton, Que.

HOLSTEIN-FRIESIAN and TAMWORTH SWINE.

Three choice bull calves and three heifers, one year old; also a few nice Tamworth sows and boars, three months old, by 1st prize sire and dam. Write for prices before you buy. D. J. GIBSON, Bowmanville, Ontario.

Maple Hill Holstein-Friesians

(THE GOLD MEDAL HERD OF 1897). SERVICE BULLS: DeKol 2nd's Paul DeKol Duke (Imp.), Sir Pledge DeKol (Imp.). Can spare a few young things of both sexes from strictly first-class cows of DeKol, Empress Josephine Mechthilde, and other famous butter families. G. W. CLEMONS, ST. GEORGE, ONT.

BROOKBANK HOLSTEIN HERD

50—Champions for Milk and Butter—50 A number of desirable young BULLS on hand from one month to eight months old, from our great milkers. Write for just what you want. Females of all ages. A. & G. RHOE, Oxford Co., Ont. CURRIE'S CROSSING.

2 HOLSTEIN BULLS 2

ft. for service, by Father Tenson and Butter Boy 2nd, and out of Bollert-bred dams. R. W. WALKER, UTICA, ONT. Shipping Stations: Port Perry, G. T. R.; Myrtle, C. P. R.

"Gem Holstein Herd." STOCK FOR SALE!

We only keep and breed registered Holstein-Friesians. We have now some choice young bulls and heifers, also some older animals, all of the very best dairy quality, that we will sell one or more at a time, on reasonable terms. Correspondence solicited. HILLIS BROTHERS, BEDFORD PARK P.O., ONT. Shipping Station, Toronto. 7-7-0m

HOLSTEINS FOR SALE

Do you want the blood of DeKol 2nd or Netherland Hengerveld? These two cows have produced more butter in seven days than any other two cows that have been officially tested. Their daughters are large producers. Sons of these two great cows head our herd. Animals of all ages and richest breeding. Come or write. HENRY STEVENS & SONS, Lacona, Oswego Co., N. Y.

Poultrymen!

As per previous announcements, we hereby offer the following SPECIAL PRIZES To be competed for at the Ontario Poultry Association's show at Toronto in January next, by birds got into condition on our "Tonic Poultry Food"

These SPECIAL PRIZES to consist of \$5.00 worth of goods to be chosen from our Price List by owner of best 1898 bird in each of the following classes:

ASIATICS, HAMBURGS, ENGLISH, MEDITERRANEANS, FRENCH, POLISH, AMERICANS, BANTAMS, ANY OTHER STANDARD VARIETY. Write for Circular, Rules, Price List, etc., to JOHN S. PEARCE & CO., THE CANADIAN POULTRY SUPPLY HOUSE, LONDON, ONT.

BRONZE TURKEYS FOR SALE.

To make room will sell up to 15th Nov. next, first-class Bronze Turkeys (hatch of 1898) at \$1.50 per pair. Can furnish them not akin. JAMES TOLTON, Walkerton, Ont.

Silver and Golden Wyandottes

From imported stock and prize-winners at Boston and Madison Square. Pekin ducks. JAS. LENTON, Park Farm, OSHAWA

BARRED PLYMOUTH ROCKS!

Young stock for sale at reasonable prices. One two-year old imported Felch cock and two yearling cocks, all of exceptional quality. Also a fine pair of Pekin ducks (yearlings)—grand show birds. Write for particulars to MISS P. J. COLDWELL, Constance, Huron Co., Ont.

BARRED AND WHITE P. ROCKS and WHITE WYANDOTTES.

In order to reduce our stock of above we will sell at \$1 per trio, all of which are bred from our winners; also some fine pairs of Cayuga and Honen Ducks. Satisfaction guaranteed. GEO. BOGUE, Box 123, Strathroy, Ont. Send 15c. for Poultry Annual and Almanac for 1898 to C. C. Shoemaker, Freeport, Ill., U.S.A.

BRITISH ADVERTISEMENTS.

SHROPSHIRE SHEEP

KNOWN THE WORLD OVER AS THE FARMER'S SHEEP. LEAN, JUICY FLESH, best and heaviest fleeces of all DOWN SHEEP, very prolific, good nurses, robust constitutions, and noted for early maturity.

N. B.—The best GENERAL PURPOSE SHEEP in existence, and splendidly adapted for crossing on Merino, long-wool or cross-bred ewes when an IDEAL FREEZER is wanted. FAT LAMBS.—For breeding fat lambs the Shropshire ram is unrivalled, and for that purpose it is extensively used in all parts of the world. THE SHROPSHIRE will thrive and do well where any other sheep can exist, and no breed has such a record for readily adapting itself to any Country and all Classes of Pasture. A list of Shropshire sheep breeders entered in the last volume of the flock book may be obtained from ALFRED MANSELL & CO., Secretaries of the Shropshire Breeders' Assoc., SHREWSBURY, ENGLAND.

J. E. CASSWELL, Laughton, Folkingham, Lincs.

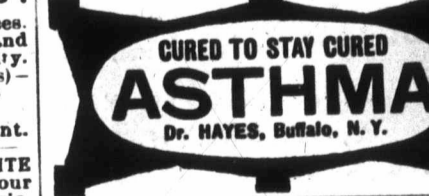
breeder of Lincoln Long-wool Sheep, Flock No. 46. The flock was in the possession of the present owner's great-grandfather in 1785, and has descended direct from father to son without a single dispersion sale. J. E. Casswell made the highest average for 20 rams at the "Annual Lincoln Ram Sale," 1895 and 1897. The 1895 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.

W. W. Chapman

Secretary of the National Sheep Breeders' Association, Secretary of the Kent or Romney Marsh Sheep Breeders' Association, and late Secretary of the Southdown Sheep Society. Pedigree Live Stock Agent, Exporter and Shipper. All kinds of registered Stock personally selected and exported on commission; quotations given, and all enquiries answered. Address—FITZALAN HOUSE, ARUNDEL ST., STRAND, LONDON W. W. Cables—Sheepcote, London.

Poultry. L. and D. Brahmas, B. and W. Rocks, S. and W. Wyandottes, Black Minorcas, Indian Game and Red Caps.

Young stock and eggs from above breeds. Eggs, \$1.25 for 13; \$2 for 25. Satisfaction guaranteed. JACOB B. SNIDER, German Mills. FOR SALE AT REASONABLE PRICES—12 Buff Cockerel Cockerels, 12 Barred Plymouth Rock Cockerels, 12 White Leghorn Cockerels, 20 Pekin Ducks. All are selected birds, and will be sold cheap. We also offer a fine litter of Tamworth swine. W. R. GRAHAM, Bayside, Ontario.



IF YOU WANT OXFORD DOWNS,

of any age or either sex, write us for prices. All our stock are from the best English-bred animals. PETER ARKELL, TRESWATER, ONT.

Bethesda, Ont., Oct. 19th, 1898. Messrs. The Pickhardt Renfrew Co., STOUFFVILLE, ONT.:

GENTLEMEN,— After having used a number of cans of your Persiate Sheep and Animal Dip I am free to say that it is the best Dip I have ever used. It goes further and does better work than any other. It is certainly the Dip I shall use in future. I would also say that recently I castrated a number of lambs, the worst time of the year, and I must say that your Dip healed wounds rapidly and kept maggots out. I firmly believe that yours is the very best all-round Dip on the market to-day, and recommend same accordingly. Every farmer should have it on hand for his live stock.

(Signed) G. A. BRODIE.

N. B.—Mr. George Brodie is one of the representative sheep and live stock breeders in Canada, and whose reputation as such is well-established. Mr. Brodie's testimonial was voluntarily given. If you cannot obtain our Persiate Sheep and Animal Dip in your own town, address

The PICKHARDT RENFREW CO., LIMITED, STOUFFVILLE, ONTARIO. All correspondence cheerfully answered.



SCABBY SHEEP. \$5000 REWARD

To any party who can produce a scabby sheep which the Lincoln Dip will not cure. Write for particulars. Lincoln Sheep Dip Co., 855 Elliott St. Bldg., Buffalo, N. Y.

Canadian Office: WEST CHEMICAL COMPANY, 15 Queen Street East, Toronto.

AT FAIRVIEW FARM ARE A FEW OF THE BEST RAMS, RAM AND EWE LAMBS, AS WELL AS SOWS THAT HAVE BEEN BRED TO NOTED PRIZEWINNING RAMS. WRITE ME FOR PRICES.

John Campbell, WOODVILLE, ONT.

HILL HOME FLOCK OF SHROPSHIRE SHEEP comprise the choicest of breeding from direct importation. Rams of all ages for sale. D. G. GANTON, SINCOR COUNTY. SAURIN P. O., ONT.

SHROPSHIRE SHEEP from imported sires, also a few Ewes.

GEO. HINDMARSH, AILSA CRAIG, ONTARIO.

W. S. HAWKSHAW & SONS, Glanworth, Ont. Shropshire Sheep, Tamworth Swine, Mammoth Bronze Turkeys. Quality assured. Write for particulars.

Shropshire Sheep, Chester White Hogs, BRONZE TURKEYS W. E. WRIGHT, GLANWORTH, ONTARIO.

PINE RIDGE STOCK FARM. We are offering twenty registered Shropshire ram and ewe lambs, weighing 100 lbs., at \$10 each. Yorkshire and Berkshire boars and sows, three to six months old, from \$7 to \$15. W. R. BOWMAN, Mount Forest, Ont.

Dorsets and Chesters Sheep of all ages and both sexes. Boars five to twelve months old.

R. H. HARDING, THORNDALE, ONT. JERSEYDALE FLOCK OF DORSETS

Is the most celebrated flock of prizewinners on the continent. Stock always on hand for sale.

JOHN A. MCGILLIVRAY, UXBRIDGE, ONT.

LEICESTERS—choice RAMS of all ages, as well as some splendid FEMALES, from my SHOW AND FIELD FLOCKS.

A. W. SMITH, Huron Co. MAPLE LODGE, ONT.

LEICESTER RAM LAMBS C. & E. WOOD, FREEMAN P. O., Burlington Station.

SUMMER HILL HERD IMPROVED LARGE WHITE Yorkshire Hogs. "LOOK ME OVER" 2602, 1st prize, Toronto and Ottawa, 1898, at head of herd. Royal Duchess 2nd, first prize, Royal Show, England, among breeding sows. Young Stock for Sale. By notification, will meet train at Hamilton. Telephone, "Millgrove, Ont." D. C. FLATT, MILLGROVE P. O., ONT.



CHESTER WHITES—The largest prize-winning herd in America. Frisker 3rd and Cuban Boy now used in the herd. Stock for sale of all ages. Duroc-Jerseys—The first prize herd in Toronto. Our entire herd for sale. TAMWORTHS—Three boars fit for service and sows ready to breed for sale at a bargain to close on the lot at once. Write for description and prices.

HENRY ARKELL, ARKELL, ONTARIO, Importer and Breeder of OXFORD DOWN SHEEP Imported and Canadian-bred rams, yearling ewes and ewe lambs for sale. Prices reasonable.

Large Yorkshires! OF HIGHEST QUALITY.



IMPORTED and Canadian boars and sows of all ages. My stock of hogs is larger and better than ever. The best quality of bacon hogs to be purchased in England are now in the Oak Lodge herd. Write for prices. J. E. BRETHOUR, BURFORD, BRANT CO.

Large White Yorkshires BRED AND FOR SALE.

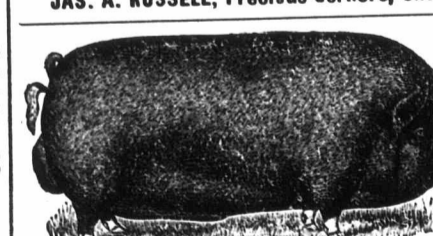
Fifty August and September pigs; 30 sows and boars from 5 to 7 months old, bred from registered stock. Write your wants. E. DOOL, HARTINGTON, ONT.

Large Yorkshires The grand YEARLING BOAR, Seymour Hero, has sired several litters of sixteen each. YOUNG BOARS fit for immediate service. YOUNG SOWS just bred, and several litters of young pigs just ready to ship of either sex. Prices right. Correspondence solicited.

ALEX HUME & CO., Menie P. O., Ont. Breeders of Ayrshire and Yorkshires.

YORKSHIRES AND BERKSHIRES My Yorkshires were founded on the noted prize-ring producer, Maud G., and are the best lot I ever owned. My Berkshires are of Baron Lee and Enterprise strains. R. G. MARTIN, Marysville, Ont.

YORKSHIRES AND BERKSHIRES Am offering a limited number of each breed and both sexes (not related), and booking orders for young stock from prizewinners. A few splendid Plymouth Rock cockerels. Farm four miles from Cobourg station. JAS. A. RUSSELL, Precious Corners, Ont.



A choice lot of Large English Berkshires from three weeks to two months old. Have also two specially fine boars, seven and twelve months old respectively, both prizewinners this fall; also some fine sows ready to breed. Prices reasonable. W. H. SPENCER, Morpeth P. O., Ont.

I HAVE NOW A CHOICE LOT OF BERKSHIRES 7 months old, of both sexes, that I will dispose of. Remember, these pigs are prizewinners. Write for price, also for my new catalogue. CHRIS. FAHNER, CREDITON, ONT.

BERKSHIRES FOR SALE A FINE LOT OF BOARS AND SOWS FROM APRIL AND MAY LITTERS ALSO OLDER STOCK. PRICES REASONABLE. JOHN RACEY, Jr., Lennoxville, Que.

GUERNSEYS AND CHESTER WHITES. THE FOLLOWING STOCK FOR SALE: GUERNSEYS—Two-year-old bull, winner of six first, two medals, and diploma; two bull calves. DUROC-JERSEYS—The first prize herd in Toronto. Our entire herd for sale. TAMWORTHS—Three boars fit for service and sows ready to breed for sale at a bargain to close on the lot at once. Write for description and prices. W. M. BUTLER & SONS, DEREHAM CENTRE, OXFORD CO., ONT.

AUTUMN OFFERING. 50 HEAD OF YORKSHIRE Boars and Sows from six weeks to six months. Good quality. Also some lengthy Berkshire boars and sows, fit for service. Two Shorthorn bulls, 10 months old. Write for prices. H. J. DAVIS, Woodstock, Ont.

English Berkshires One boar 18 mos. old, bred by J. G. Snell, at a bargain. Several boars fit for service; sows ready to breed; young pigs of either sex; B. P. Rock cockerels. Write for prices. H. BENNETT & SON, St. Williams, Ont.

MONTROSE HERD OF BERKSHIRES Carry such blood as Baron Lee and Enterprise. Young stock three months old for sale, and orders for fall litters booked now. J. W. HARTMAN & SONS, ELM HEDGE P. O., GREY CO.

My Berkshires are strictly up-to-date in style, length, quality and breeding. The present crop of young stock by Manor Prince are as good a lot as I ever raised. Prices right. J. B. EWING, Dartford, Ont.

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.

FOR SALE! ENGLISH BERKSHIRES! Six boars, 8 mos. old, and six sows, all fit for service. Prices moderate. ROBERT VANCE & SONS, IDA, ONT.

HEADQUARTERS FOR DUROC-JERSEY SWINE Our herd secured nine of the first prizes out of the eleven offered at Toronto Exhibition, and a similar portion at London and Ottawa. We are justified in saying we have the best herd in Canada. First-class stock of all kinds for sale at all times. Address—TAPE BROS., RIDGETOWN, ONT.

Oxford Herd of Winning Poland-Chinas. Having won the herd prizes at Toronto, London, Ottawa, and Brantford Fat Stock Show, we feel justified in stating that we are in a position to offer you what you may ask for from gilt-edge prize-winning stock. W. & H. JONES, OXFORD CO. MT. ELGIN.

Springridge Poland-Chinas Now offering the 2-year-old sire, Black-amore, and a few of his young females, and booking orders for young stock from the royally-bred GOLDBUG, lately added to the herd. W. M. J. DUCK, MORPETH, ONT.

POLAND-CHINA SWINE. Aged sows; young stock of both sex, two to seven months. P. B. ROCKS, L. Brahmas, Rouen ducklings. Write for prices. Farm three miles east of own. J. F. MCKAY, PARKHILL, ONT.

5 POLAND-CHINA BOARS Five months old, sired by imported Cornish Ranger—1065—d. Kent Beauty—1204—, by imp. Black Joe—708— Sows all ages. Booking orders for fall pigs. JOSEPH M. SMYTH, Box 619, Chatham, Ont.

BORNHOLM HERD IMP. CHESTER WHITES! Stock for sale at all times, all ages. Nothing but first-class stock shipped. Inspection invited. Correspondence promptly answered. D. DeCOURCY, BORNHOLM P. O., ONT.

CHESTER WHITE BOARS and Sows, 4 to 8 months, that are BRED FOR PRICES } RIGHT. Henry Herron, Avon P. O., Ont.

HERMANVILLE RED TAMWORTH and PIGS DUROC-JERSEY-YORKSHIRE CROSS (The ideal bacon cross for profit) Stock bred in the glass of fashion and mold of form (ready to wean) on hand and for sale. Orders booked. Hermanville Farm, Hermanville, P. E. I.

TAMWORTH AND CHESTER WHITE BOARS fit for service. Sows ready to breed, and a choice lot of fall pigs now ready to ship at rock-bottom prices from the sweepstakes herd at the leading exhibition of Ontario and Quebec in 1897. We pay express charges to your station, and guarantee the safe arrival of all stock shipped. Pairs furnished not akin. Drop a card before buying elsewhere. H. GEORGE & SONS, Crampton P. O., Ont.

1898 SWEEPSTAKES HERD OF TAMWORTHS AT TORONTO & LONDON. Sows in pig and sows ready to breed. Young stock of both sexes by my sweepstakes boar, Amber Luther 215; out of prizewinning sows. JOHN C. NICHOL, Hubrey, Ont. Express Office: London.

TAMWORTHS—THE PACKER'S CHOICE. Sows in pig, and Sows ready to breed, Boars ready for service, and fifty head from six weeks to five months. Orders booked for fall pigs from 14 sows and 4 boars. Prices right. J. H. SIMONTON, Box 304, CHATHAM, ONT.

Spring Brook Holsteins and Tamworths. One yearling boar; 3 six-months' boars ready for service, sired by imp. Nimrod; and a few young sows. Am booking orders for fall litters; have good ones; prices reasonable. A few calves for sale. A. C. HALLMAN, NEW DUNDEE, ONT. Waterloo Co.

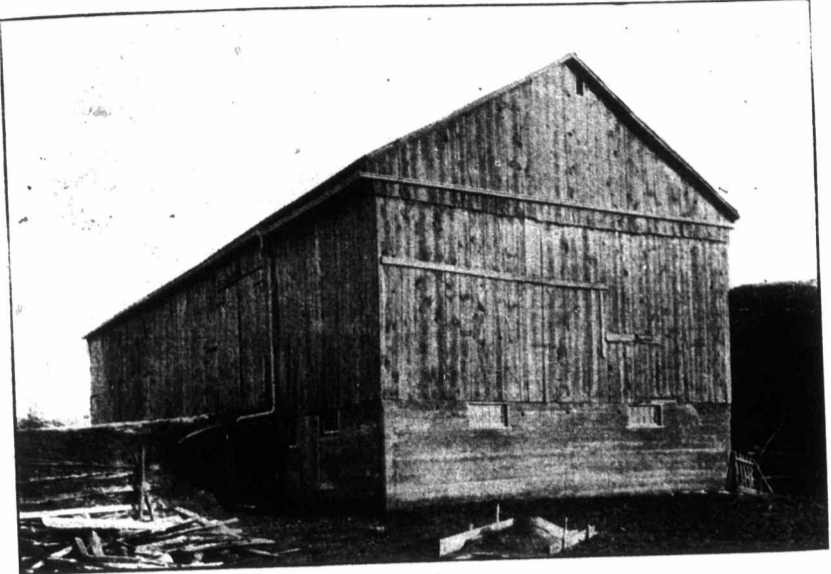
P. R. Hoover & Sons, GREEN RIVER, ONT. BREEDERS OF CHOICE TAMWORTHS. Young boars and sows ready for breeding purposes at prices which should sell them. St., Locust Hill, C. P. R.; Markham, G. T. R. Correspondence solicited. 9-1-y-om

Woodland HERD OF Tamworths are in good form this season, and offering young stock of superior quality and breeding of both sexes. H. REVELL, INGERSOLL, ONT.

OAK HILL HERD OF TAMWORTHS. For sale—young boars and sows, 3 and 4 months old, by Sandy 3rd and Nimrod and out of prizewinning dams; also young pigs. Prices reasonable. R. J. & A. LAURIE, WOLVERTON, ONT. Tamworths, Yorkshires, and Suffolks; also Poultry. My Tams have won a large share of the best prizes offered at the large and small fairs. Parkhill Mab was bred by us. JOHN HORD & SON, Parkhill, Ont.

THE Thorold Cement

HIGH IN QUALITY. LOW IN PRICE. 56 YEARS IN USE.

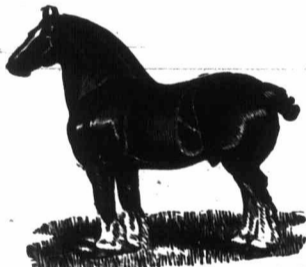


BARN OF GEO. AXFORD, TALBOTVILLE, ONT.
Size of Basement Walls, 34 x 88 x 9 feet. Built with Thorold Cement.
Talbotville, Elgin Co., Dec. 22nd, 1897.

Estate of John Battle, Thorold, Ont.
DEAR SIRS.—It is with pleasure that I testify to the good qualities of your Thorold Cement for building purposes.
During the past summer I have built a basement under my barn, 34 x 88 x 9 feet high from bottom of foundation; footing for foundation 18 in. thick; above the footing 12 in. thick. I used six parts of gravel to one of cement. I also built a cistern under the approach to the barn 8x18x7 feet high; wall around cistern 16 inches thick; arched over the top 10 inches thick.
The total cost of gravel and cement for the above work was \$108.
The work was done under the direction of your Mr. Norval Hagar, who very courteously showed me how to do the work free of all charge, an advantage which I appreciate very much, as I consider him thoroughly master of the business.
I also put a floor into my cow stable, 32 x 57, 4 inches thick, in which I used 27 barrels of Thorold Cement. I used six parts gravel to one of cement. The floor is as hard as a stone, which was three parts gravel to one of cement. The floor is made of any other material, and I consider both wall and floor better than I could have made of any other material, and much cheaper.
Yours truly,
GEO. AXFORD.

FOR FREE PAMPHLET, WITH FULL PARTICULARS, ADDRESS
ESTATE OF JOHN BATTLE, THOROLD, ONT.
AGENTS WANTED IN UNREPRESENTED DISTRICTS.

CHAMPION "McQUEEN" CLYDESDALE STALLION



We have a number of first-class mares and fillies of this breed in foal to the above stallion.
We also have for sale a number of other choice stallions—Clydesdale, Standard-bred, Thoroughbred.
GRAHAM BROS.,
Claremont, Ontario.
25 miles east of Toronto, on C. P. R. 4-10-00

DENTONIA PARK FARM, EAST TORONTO (Coleman P.O.) W. E. H. MASSEY, Proprietor.

DENTONIA JERSEY HERD—Winners of the herd prize at both Toronto and London fairs this fall, also some thirty other prizes. The herd comprises fourteen head of imported cattle, many of them winners of valuable prizes on the Island; also some thirty animals carefully selected from the best Canadian herds. Heifer and Bull Calves, also good cows always on sale.

DENTONIA POULTRY YARDS—S. C. Brown Leghorn and Light Brahma Cockerels for sale.
DENTONIA TROUT PONDS—100,000 healthy fry ready for delivery this fall. Prices reasonable. Trout eggs in season. Market trout supplied on short notice.

PRIVATE SALE OF THOROUGHbred DURHAM CATTLE.
Owing to a change in their business, the farm having been rented for the past five years, JOHN MORGAN & SONS, of Kerwood, Ont., have decided to offer by private sale, for the next three months at Special Rates, the following desirable animals:—10 very choice Young Bull Calves, from 8 to 12 months old; also 12 Cows and a number of choice Heifers, all superior stock. The young stock were all bred from Vice-Regent, by imported Aberdeen, one of the best stock bulls in Canada. Call and see the stock at once, and secure first choice. Terms made known on application. JOHN MORGAN & SONS, KERWOOD, ONT.

Reg. Jersey Cattle for Sale

Of rare Butter quality, at reasonable prices, and Express paid by me to any reasonable distance.
1 BULL, 14 months, solid color, a perfect picture, \$85 00
2 YOUNGER BULLS, solid colors, \$40 to 75 00
1 BULL, 3 months old, fawn and white, 35 00
1 HEIFER, 14 months old, solid color, 100 00
1 HEIFER, 9 months old, solid light fawn, 85 00
MRS. E. M. JONES. Box 324, BROCKVILLE, ONTARIO, CAN.

GOSSIP.

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

Mr. Arthur Johnston, Greenwood, Ont., in ordering a change in his advertisement of Shorthorn cattle, states that the herd is in fine health and condition, as usual, and that a grand lot of 17 young bulls of serviceable age, as well as a number of cows and heifers of various ages and of choice breeding and quality, are held for sale.

Mr. James E. Gaunt, St. Helen's, Ont., of the late firm of E. Gaunt & Sons, well-known breeders of Shorthorn cattle and Leicester sheep, and who has had considerable experience as a local auctioneer, has decided to launch out into the larger field of provincial salesmen, as announced in his advertisement in this issue. A long course of training as a breeder and judge of the merits of pure-bred stock, and their values, combined with a successful experience in conducting sales, should commend him to those contemplating the holding of public offerings of stock.

W. J. Calbeck, breeder of Improved Large White Yorkshire hogs, Augustine Cove, P. E. I., made the following sales at St. John, N. B., and Halifax, N. S., Exhibitions: Nappan Experimental Farm, N. S.—1 sow; Nictaux Agricultural Society, Annapolis Co., N. S.—1 boar; Wallace Burpee, Fredericton, N. B.—1 boar; W. Herbert DeVeber, Maple Shade Farm, Woodstock, N. B.—1 boar and 1 sow; F. J. McFarlane, Baddeck 3 sows; Albert Tanton, St. Eleanora, P. E. I.—1 boar; Clark Bros., North Wiltshire, P. E. I.—1 sow; F. G. Boyer, Georgetown, P. E. I.—1 sow.

On the rich and well-conducted dairy farm of Mr. Wm. Miller, Marshfield, near Charlottetown, P. E. I., we found a nice herd of registered Ayrshires, at the head of which are the excellent stock bulls Pars Gold, by Golden Guinea, and Jock Marshfield, by Jock Morton, dam Bonnie Jean, both of which are of approved dairy type, as also is the yearling bull Baldock Lad, imported from Ontario, a son of Monarch 2nd and Ruby Crofts. Among the females in the herd, Milkmaid 2nd, bred by Jas. McCrumb & Sons, Rocket, a handsome three-year-old cow with a model-shaped milk vessel and prominent milk veins. Annie Learie, a handsome three-year-old cow by Chieftain of Barochie, is another of similar type and breeding, as are a number of excellent young cows, while the yearling heifers and heifer calves in the herd are exceedingly promising for future usefulness.

Alex. Hume & Co., Montic, Ontario, write:—"Owing to the plentiful fall of rain, pastures are unusually good, and consequently cows are milking well. Since coming home from Toronto Exhibition we have turned our entire herd of Ayrshires out to grass, except our stock bull. They are (calves and all) doing exceptionally well, and ought to be greatly benefited by the run, especially for breeding. We have sold all our bulls except some choice young ones, and now is the time for anyone who is much less and you can raise them probably cheaper than ourselves. We also have several young females of good quality that we can spare. Our yearling Yorkshire boar, Seymour Hero, that we offer in ad., is a grand pig of great length and a wonderful stockpotter. Several litters of sixteen each have been sired by him. He has also been successful in the showing. We are through with him, as several of our females are akin to him. If we do not sell him for breeding we will castrate him and fatten him. Young boars and sows, each and are from two-year-old sows. Two of the litters of young pigs just ready to ship are litters of fifteen and sixteen respectively, and sired by Seymour Hero."

IMPORTANT SALE OF CLYDESDALES.
Attention is directed to the announcement, in our advertising columns, of Col. Robt. Holloway's auction sale of high-class Clydesdales, at Alexis, Illinois, on November 16th and 17th. Those who know Col. Holloway need not be assured of his fine judgment of this class of horses, or of his success as a breeder of Clydesdales. The names of the string of sires used in the stud is itself a guarantee of the excellence of the stock to be offered, and we are assured that the animals are as good as their pedigrees. All interested should send for a catalogue of the sale.

THE CARGILL IMPORTATION.
Messrs. H. Cargill & Son, of Cargill, Ont., have now in quarantine at Levis, Quebec, twenty-one head of very superior young Shorthorn eight bulls and thirteen young cows and heifers), including a number of prize-winning animals in Scotland, notably the yearling Rattle heifer that won 1st prize in her class and the silver cup for best Shorthorn female of any age at the Royal Northern Society's Show at Aberdeen in July last. The whole are of the best blood to be had in Aberdeenshire, and include members of very many of the foremost families of the North of Scotland. A fuller account of this importation will be given later.

NOTICES.
H. H. B. McMaster, Registrar of Deeds, Eau Claire, Wis., writes P. Harold Hayes, Buffalo, N. Y., as follows:—"Answering your favor of the 19th inst., my wife directs me to say to you that she has had no return of Asthma since it left her, about three years since, and she claims very positively that your treatment cured her. She was afflicted with the disease about six months before beginning the use of your medicines. She now considers herself absolutely free from the Asthma. You are at liberty to make whatever use you may desire of this information."

"OAK PARK" FARM TO BE SOLD.
The splendid farm of Capt. D. Milloy, of Paris, Ont., advertised for sale in this issue, is one of the best stock and grain farms in the Dominion. The soil is a rich clay loam, and has been maintained in fertile condition by the feeding of cattle and other stock on it for forty years. The buildings are unsurpassed, probably unequalled, in the Province, being up-to-date in every respect. The location is convenient and desirable in the highest degree, and everything that is needed to constitute a well-fitted farm and an ideal country home is found at Oak Park.

BELLEVILLE BUSINESS COLLEGE

The business training given at this College is Specific and Thorough—none more so.

DEPARTMENT I.—Comprises Bookkeeping—double and single entry—in its various applications, Business Papers and Customs, Calculations, Business Writing, Business History and Geography.

Every young man who takes this course will better understand the economics of his chosen business, how to make money in that business and how to increase it. He will be qualified to transact business at home, on the market, at the factory board, the bank or loan company, and in any municipal office to which he may be elected.

The other College Departments are:
II. SHORTHAND and TYPEWRITING—Office and Court Work.

III. CIVIL SERVICE QUALIFICATIONS—Indexing, Precise Writing, Statistics, English and French Options.

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

J. FRITH JEFFERS, M.A., Principal.
Write for Calendar. Be careful to address in full

BELLEVILLE BUSINESS COLLEGE,
Belleville, Ont.

EDUCATION BY MAIL

Thousands have been helped to better pay & positions through our system of instruction. Buildings erected expressly for this purpose at a cost of \$225,000. Courses of Steam, Electrical, Mechanical or Civil Engineering; Chemistry; Mining; Mechanical and Architectural Drawing; Surveying; Plumbing; Architecture; Metal Pattern Drafting; Prospecting; Bookkeeping; Shorthand; English Branches.

\$2 a month pays for a College Education at Home. Circular FREE. State subject you wish to study. THE INTERNATIONAL CORRESPONDENCE SCHOOLS Box 900, Scranton, Pa., U. S. A.

KINGSTON BUSINESS COLLEGE

ESTABLISHED 1884. INCORPORATED 1886.
A HIGH-GRADE COLLEGE.

Students admitted at any time. Write for free catalogue to—

J. B. MCKAY, F. H. METCALFE,
President. -om KINGSTON, ONT.

A LARGE SCHOOL IN A SMALL CITY.

CENTRAL Business College
STRATFORD, ONTARIO.

Gives the best training in Commercial Science, Shorthand, Typewriting, etc., which enables the possessor to secure the best situations. Our graduates are always successful. Write to-day for beautiful catalogue. Moderate rates; board cheap. Enter any time.

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Thorough, practical, up-to-date courses: COMMERCIAL SHORTHAND, TYPEWRITING, ENGLISH, CIVIL SERVICE. Individual instruction. Call or write for free information. -om

FOREST CITY Business and Shorthand College,

High-grade Business & Shorthand School Catalogue free.

J. W. Westervelt, A. F., Principal.
Y. M. C. A. Building.

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.

If you have anything to sell, SEND AN ADVERTISEMENT to

The William Weld Company

LONDON, ONTARIO.



For \$1.08 (one dollar for the mitts, 8c. for the postage) we will send, post-paid to any post-office address in Canada, a pair of genuine California Buckskin Overdraw Mitts to pull right over your woolen mitts. These are great mitts. California Buckskin is windproof and waterproof. The mitts are made large and roomy, have elastic wrist-bands, are unlined and heavy, and will outwear any other kind of leather mitt. Every mitt is waxed. Farmers, lumbermen and teamsters are delighted with this mitt. Send \$1.08 by post-office order and you will promptly receive the mitts by return mail. Address,

STANLEY MILLS & CO., Hamilton, Ont.



ROCK SALT for horses and cattle. Per 100 lbs., 70c., or 500 lbs., \$3.00. Toronto. Cash with the order. Also in carlots. Toronto Salt Works, Toronto.

BIG MONEY FOR AGENTS THE STAR RIVETER
For MENDING HARNESS, BELTING, etc. Indispensable to Farmers, Livery-men and Threshermen. **STAR RIVETER** complete, with 50 tubular rivets, \$1.00. Best selling article ever introduced. Agents write for special prices and territory.

ENTERPRISE MAN'G CO., TORONTO, ONT.

\$29.00
FOR A **MACHINE and WIRE**
to build 100 rods of the best coiled steel wire fence made. 12 1/2 lbs. per rod. Write for particulars.
McGREGOR, BANWELL & CO. WINDSOR, ONT.
AGENTS WANTED.

Machine \$10
TO BUILD THE STRONGEST AND BEST WIRE FENCE.
16 to 24 Cents per Rod.
No farm rights, royalties or patent stays to buy. AGENTS WANTED. Write for circular.
The Bowen Cable Stay Fence Co. NORWALK, OHIO, U.S.A.

\$8 to \$15 MACHINE
to weave your own fence of Galv. Hard Steel Spring Wire, 32 inches high, at 25 Cts. per Rod. 2500 buys wire for 100 rods fence. Agents Wanted. Catalogue Free.
CARTER Wire Fence Mach. Co. Box G. Mt. Sterling, O.
No duty on fence wire. S. CROUCH, Ridgeway, Ont., General Agent for Canada.

BUCKLEY'S PAT. WATERING DEVICE
The only economical device for watering cattle in stables, Cheesefactory and creamery outfits, etc. Write for catalogue and prices.
RANEY SELBY & CO., Kingston, Ont.

BOYS FOR FARM HELP.
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GOSSIP.
In writing to advertisers, mention the "Farmer's Advocate."

Mr. L. M. White, U. S. Express Co., Buffalo, N. Y., also says to Dr. Hayes:—"One more season to the good since I last wrote you. Believing you would be pleased to know how good, I'll try and tell you. No catarrhal symptoms, no Asthma, no lost time, and driving thirty to forty miles daily in all sorts of weather and all kinds of dust at that."

At the International Show at Palermo, Buenos Ayres, Oct. 8th to 18th, the Shorthorn bull Spartan, a son of Count Lavender (bred by Her Majesty the Queen, and owned by D. MacLennan, purchased from Baron Rothschild), won first in his class as a three-year-old, the male championship, and the championship as best animal. Sea Gem by Liberator, dam Sea Pearl, was the first-prize cow.

The Maritime Stock Improvement Company has been organized with a capital of \$50,000, with headquarters at Nappan, N. S., where a capital stock farm has been purchased for the purpose. Col. Blair, of Amherst, ex-superintendent of the Maritime Experimental Farm, is the promoter, and will be the manager of the enterprise, the object being the importing, breeding, transporting, marketing or otherwise dealing in all classes of pure-bred and high-grade cattle, sheep and swine. Necessary buildings are being erected, and stock has already been purchased as a nucleus for the undertaking, which, if well directed, should prove helpful to the farmers of the Eastern Provinces.

R. H. HARDING'S DORSETS AND CHESTERS.
Situating near Thorndale, Ont., some 12 miles north-east of London, on the Stratford branch of the G. T. R., is the stock farm of R. H. Harding, who for a number of years has made a specialty of Dorset Horned sheep and Chester White swine. The Dorset flock, consisting of some 35 breeding ewes, is remarkably uniform and of very good type. It is now headed by the newly imported ram, Lord Nelson, No. 4 in the English Dorset Horn Flock Book, and 355 in the Continental Dorset Club. He was bred by Mr. H. McCalmont, M. P., Bishopwood Estate, England. A good illustration of Lord Nelson appears elsewhere in this issue. While he was in no sense a fitted sheep he captured second premium at Toronto, being beaten by the English Royal winner. He also won first in London. The young stock now in the flock are from Middlesex Star, the first-prize winner at Toronto and London exhibitions in 1897. The breeding ewes are now in lamb to come in between Nov. 1st and Feb. 1st. Mr. Harding informs us that the best grade lambs in his section at three months old were grade Dorsets.

Mr. Harding has had the bacon type in view since the tide has turned in that direction, and now has a lengthy, deep-sided herd of vigorous Chesters, with capital hams. The fat backs so objectionable to the packers have no place in the herd. Among recent additions is a pair from the herd of S. H. Todd, of Ohio, the boar of which now heads Mr. Harding's herd. One of the five breeding sows is Annie 519, the winner of two bronze medals at the London Western Exhibition, one in a family group and the other as sow with litter at foot. She is due to farrow in November. Other litters are coming in, and two are ready to wean and ship. Special mention might be made of about a dozen 1898 spring boars that have been fed very moderately the past summer, and are in nice form to be pushed ahead without fear of injuring them in any way.

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