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DEVOTED TO THE INTERESTS OF THE STOCK-RAISERS AND FARMERS OF CANADA.

VOL. VI

HAMILTON, CANADA, JULY, 1889

No. 69



GROUP OF AYRSHIRES.

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Ayrshires at Loudon Hill Stock Farm.

This beautifully situated farm, owned by Messrs. D. Morton & Sons, is about three miles as the crow flies from the city of Hamilton, and leading to it is one of the most magnificent drives in point of scenery that it ever has been our pleasure to behold. Leaving the city and ascending the mountain behind a handsome chestnut team, the scene gradually changes from urban to suburban, and this again to rural as we speed along the brow of the mountain that looks so benignly on the city below. To its base lie close the well-tilled fruit gardens of the thrifty gardeners, and away off, bounded by the horizon and resplendently sparkling in the rays of "day's garish eye," the waters of the bay greatly enhance the scene. The farm embraces 85 acres of fine land. New stables are being reared and old ones removed for the work in hand, and all are being made worthy of the excellent herd they harbor.

The herd at present comprises 12 head, eleven cows and one bull, and they without question do honor to the expert that selected them and to the

present owners for endorsing such selection. Four of them come from the distinguished herd of the well-known breeder, Mr. John Caldwell, of Bogside, Dundonald, Scotland, and the rest are the choice of this gentleman from the best of many other prize-winning herds. Mr. Caldwell, we are informed, with his herd last year won no less than thirty prizes.

In the group above, the stock bull Royal Chief, reputed to head this herd, appears true to life. It takes but a glance at his full form, clear eye and glowing skin, to indicate that he has a plenteous supply of spirit and vigor. His head is clean-cut and with character depicted on its every feature, while it wants nothing in respect to quality. A prominent chest, voluminous and compact body, wide quarters, and over all a skin pliant and coated with mossy hair, are among his many excellencies. He satisfies the escutcheon adherent, and is possessed of a fine switch. He was bred by Mr. Archibald Mair, Croft-head, Tarbolton, and was sired by Douglas of Croft-head (1337), and out of Marion of Croft-head (4887).

To the left of the bull in our illustration stands a

magnificent cow, Blue Belle (5506), calved 1886, sired by Prince Charlie of Dunlop (957), and out of Primrose of Harperland, and bred by Hugh Todd, Harperland, Dundonald, Scotland. She gives strong indications of copious milking powers; her form is all that could be desired, her large body giving plenty room for the working of her digestive apparatus; while a full and capacious udder shows that she uses her qualifications to good advantage. A broad, strong loin gives her width in the hindquarters for the attachment of her udder. She is an active-looking cow of such a disposition and build as to adapt her to the filling of the office of a special dairy cow. She has a grand bull calf of excellent promise, so much so that he is already destined in maturer years to head the herd.

Red Rose (5510), calved 1886, is a typical Ayrshire in many respects, and one of the best of types at that. She was bred by John Caldwell, Bogside, Dundonald, and was sired by the Lad O'Kyle (999), and out of Dandy 2nd of Bogside (3018). The above illustration is a voucher to our statement that she is

a superior dairy cow. She has a fine clean head, with plenty of breadth between the eyes, a thin neck, deep chest, extra strong body, and an udder well-balanced and permanent. A heifer calf from her this spring shows many good parts and promises well.

Beauty of Ayrshire (5508), a lusty three-year-old, stands just to the right of Red Rose. She is also from the herd of Mr. Caldwell, and was sired by the Lad o' Kyle (999), dam Cauty of Bogside (3622). Her outline is of true dairy stamp, being narrow in front and deep and broad behind. She has an excellent body, broad and strong loin, and she carries a fine udder with teats well placed.

Judy (505), calved 1886, sired by Red Prince (1000) out of Merrill (2672), stands at the upper left hand in the group. She was bred by Hugh Jack, Little Schwalton, Irvine. She is a nice red color, with some white markings. Her head is shapely and neat joining nicely a beautiful neck that runs into a body of excellent form and make. Though not yet developed, she has an udder well attached, long and deep, with teats wide apart and of good size.

In the upper right hand corner stands Sprightly (5509) a growthy two-year-old, sired by Auchendean, dam Sprightly (586) and from the herd of Mr. Caldwell. To our mind his heifer gives every promise of proving the queen of the herd. Nothing could come nearer perfection than her form. She has a heavy, well knit frame and a fine, plastic skin of mellow handling. She is strong-constituted with plenty of vital force, but yet there is not the slightest indication of coarseness in her whole appearance. She has a pretty head and neck in keeping with it, and possesses a deep barrel, broad between the hips and wide between the hind legs. Though yet undeveloped, her udder gives every promise of merit. She is worthy in every respect of her dam, though the latter had the honor of securing 2nd in a strong class at the H. A. S. at Glasgow.

From the above representatives it can easily be seen that this herd is one of the best in Canada today. So far the calves have come good and strong, no less than nine being on hand at present. They are a fine lot, and the most of them are bulls, so that there is a fine chance for selection, and a nucleus for a prize-winning herd could easily be chosen from their numbers.

Our Provincial.

The Provincial Exhibition is to be held this year at the city of London, commencing on Monday, Sept. 9th, and continuing until Saturday, Sept. 14th. As this is by parliamentary decree the last time the Provincial is to receive the government grant, it is not likely it will survive after such has been withdrawn. The friends of this powerful educator on the agricultural mind should rally around it in its dying moments, and if it dies they may have the consolation of knowing that it was not for the want of sympathisers. On the other hand, even those that wish it to be done away with will not be so ungenerous as to slight it under these conditions. For these reasons all that have the agricultural interest to heart should feel it a duty incumbent on them to aid in making this the best and grandest exhibition ever held within Canada's limits. The recently published prize list emphasises the fact that the Agricultural and Arts Association will do more than its share to make it so, and it will well become the farmers of Ontario to reciprocate and cooperate with the officials in this matter. Take an interest in it and aid in some way. All particulars will be gladly furnished by the secretary, Mr. Henry Wade, of Toronto.

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HAMILTON, CANADA, JULY, 1889.

Now is as good a time as any to subscribe for the JOURNAL. Never before was it more replete with matter of practical value for the advancement of the material interests of the farmer and stock raiser. New subscribers, and those renewing their subscriptions, will receive a copy of the beautiful lithograph of the Ontario Agricultural College at Guelph, of which we have but a few remaining.

As the continual surge of the waves of the ocean will, in time, wear down the strongest cliff of the closest-grained adamant, so will frequent repetition of hard facts cause the close-encircling wall of prejudice and custom to crumble, and then there is admitted a glimmering light that diffuses its rays and lightens the path of success. He who is a slave to custom or a serf to prejudice, cannot but be hampered in progress, and if there is any one striking indication that proclaims a farmer to be so enslaved, it is the presence of a scrub stud herd or flock. The *Farmers' Review* conducted an investigation to prove the loss to the farmer in raising plug horses instead of good grades, obtained from the use of pure-bred sires. The average price of the former, from the collection of data from twelve States was, \$96.67, the average of the good grades being \$165. Allowing a difference of \$15 in service fee, the clear gain from the use of the pure-bred sire is over \$50; or put in other words, the farmer lost over \$50 by not using a pure-bred sire. But why is it necessary to cite facts? Let the farmer ponder and think and exercise his judgment, and the light will dawn upon him and diffusing outwards will show itself, not only in his practice, but he must influence his neighbors more or less. "In knowledge that man only is to be contemned and despised who is not in a state of transition," says the great Faraday, and in no other department is there more transition needed than in this. It is impossible to stand still, the herd must either become worse or advance, and one of the strongest motor-powers to aid progress is the use of pure-bred sires, of personal merit as well.

IN the breast of the toddling school boy who receives with beaming eyes and joyous hands his well earned trophy of merit, there is implanted a desire to excel others that ever urges him onward, and proves the precursor of honorable achievements with mind or body. Ripening years may bring with them mock modesty that keeps the dampers closed on the glowing fire within that was lighted by fame's bright torch, but the happy beams that break from the strictures of fashion tell the tale that the older breast is just as fertile a ground for the sowing of like seeds. As a stimulator to greater progress, no one will deny that our several fall exhibitions are doing a good work, and as the strength of this stimulant depends greatly on the patronage of the fairs by exhibitors, it is the bounden duty of every yeoman to not only countenance them when worthy of it, but to support them to the best of his ability. If the fairs are to continue to exert a beneficial influence on our agriculture, they must never want for displays of agricultural produce of all kinds, and hence no one should prove recreant to his own interests, as well as those of his country. It may call for self-denial or be the source of much annoyance and chagrin, but who is not prepared to make some sacrifices for a good cause? Give the boys a colt to fit or a calf to get in trim, and give the girls a chance to make known their handiwork, and good effects will spring forth in the deepened interest in progress, and a stronger attachment arise for the farm and its workings. Now is the time to be looking about for something to prepare, and all should feel it a duty to themselves and their country, to aid in the march onward.

THE most economical meat-producing machine of the farm is undoubtedly the pig. This animal has a capacity for assimilation that is not equalled by any other, and this ability of obtaining nutriment out of almost any form of food has led to the pig being abused and maltreated. Though possessed of a very small stomach, even of smaller capacity than that of the sheep, the pig excels them all in length of the intestines. Warrington tells us that of 100 lbs. digested organic matter, the fattening ox spends about 77 for heat and work, the sheep 74, and the pig only 57. And he further states that "the pig, with its rapid feeding and high rate of increase, is undoubtedly the most economical meat-making machine at the farmers' disposal." The feeding of sour swill is one of the evils this much-abused animal has to combat. There is no denying this is a direct loss both in nutritive value and also of the health and vigor of the pig. When milk sours, the sugar in it is decomposed into lactic acid, and finally into acetic acid or vinegar, and this materially lessens its feeding value, as well as injuring the health of the pig by interfering with the digestive juices, thus causing scouring. It should be the aim to feed all foods sweet as far as possible. Nothing will conduce more to their well-doing at the present season than a run in a clover patch. An acre of good clover will pasture at least eight hogs from spring to fall; and if good in quality they will make, under good conditions, 100 lbs. gain if fair growth when turned out. As with other pasture, it should be kept fed down so that it may not get the start of the pigs. A couple of pounds of corn added to this would hasten advancement. A mixture of salt and ashes, to which the pigs may have access, keeps them in good trim and is enjoyed by them.

"I am well pleased with the JOURNAL, and have always done and shall continue to do all in my power to extend its circulation."—Rowland Hill, Manitoulin Island, Providence Bay, P.O.

"I consider the JOURNAL as occupying the front rank in farm literature in America."—Thos. Kerrigan, Carmen, Man.

A Standard for Entrance Required.

Among the many breeds of our domestic animals the resultant effects of concentrated aims and fixed purposes, no clearer illustration to impress the mind forcibly with the value of the application of these could be cited than that of the American trotter. Trace its evolution from the advent of the vigorous Messenger as he came down the steamer's planks with two grooms swinging at his jowls, to the lightning performances of the present turf lights and stability of purpose and oneness of the aim is a strong thread that runs through from beginning to end. To America is due all honor for being the originators and developers of a class of horses which for length and rapidity of the trotting stride are equalled by none. May we add that they have the symmetry and the beautiful mouldings of structure that is but the crowning feature of the other quality. In all frankness this claim cannot be advanced, for it is a fact that the great majority of trotters are not by any means models of symmetry or beauty from an equine standpoint, and of the light horse kind. It was the dictum of sound judgment and shrewd foreseeing that led to the setting up of the god Speed in bygone days, and the beneficial results of this united action of our breeders shows itself clearly in the wonderful performances of the present time. But is it not time now to cast a reflective eye about and consider the advisability of granting that there are other qualifications that are almost equally valuable. Give the typical trotter of the day symmetry, and the claim to be the home of the grandest breed of light horses, then in its full sense becomes the pride and honor of America.

It is a fact that this desirable quality of speed has been developed unmindful of others that are not in the least antagonistic to it. If a speedy horse must be devoid of well-balanced proportions or devoid of beauty, then there could be reason for shunting aside all other desirable features that clash with it. But such is not the case. To show how the feature of speed is worshipped, let us refer to our fall fairs and exhibitions. Here speeding may be encouraged, so as to exert, a good influence on our light horse interest, and on no other score should it find favor with honest persons. Yet how far do our exhibitions do the above? In too many cases it is to pander and cater to depraved tastes instead of strengthening and nurturing a healthy interest. That the methods at present pursued fall short of this is hard to deny. For instance, a horse with all the undesirable features that an equine might be possessed of, with all the hereditary diseases imaginable, may, provided he possesses speed, which is possible, can earn more money in a week's circuit than his companion that has every desirable qualification of a grand sire, but lacks a little in speeding powers, would make in a whole season of service. Is it right to encourage such a class of horses as the first mentioned, that could not, with a free conscience be turned loose on the country to be patronized by breeders? Unhesitatingly we say, No; and our exhibition authorities, that overlook this, prove recreant to this great interest, that will readily respond to their encouragement. There is not a vestige of a doubt, that so long as large inducements are held out for speed alone, so long will this qualification be the all-absorbing one for our breeders. No one at all versed in the subject will attempt to deny the great importance of speed, nor will any one object to the statement that there are other qualities of soundness and symmetry, that have been sunk into oblivion on account of too much weight being put on the other. To

obtain the maximum of speed, the nicest balancing of proportions and the soundest of structures, is required, and hence in the best performers, as a rule, nothing is wanted. But the casual visitor at any of our county shows, or even larger exhibitions, cannot but become aware of the fact that the purse-takers are not by any means desirable horses to use for breeding purposes. A standard for entrance requiring that they be of a suitable height and form, and free from all hereditary disease, would weed out those unfit for stud purposes. The latter requirement is of great value, and in asking that none but sound horses should be allowed to compete it is but applying the same strictures as exist in all other classes. In this way the breeding of a useful type of horses may be encouraged, and only such horses worthy of it would secure the patronage of the public.

Procreative Power and Fecundity.

The influences that bear on these qualities have strong claims on the breeder's thought, for let the product of his handiwork be ever so good, if it has not, within itself the power of reproducing its excellence, then he is forced to behold the labors of his years dissipated to the four winds. The shunning of pitfalls is not the only the breeder has to occupy his mind, but he must be well balanced in every respect, not magnifying some qualities too much to the detriment of others, but attaining the happy medium that is the aim of many, but the accomplishment of few.

Systems of breeding, beyond a question, exert a powerful influence on these properties, some strengthening and others weakening them. It is undoubtedly true that unless guided with a more than ordinary skilful hand in-and-in breeding is an altar upon which they may be sacrificed. This method in the hands of early breeders was used with great advantage, little injury to the procreative powers, and much benefit to the other merits resulting. But they were working with a different material from that of the master breeder of the present day. The earlier breeders started with crude and coarse animals of great vigor, but latter day herds are finer bred and more closely related. The first improvers had a reason for following incestuous breeding, however, in that they were unable to procure animals outside of their own herds that could produce the desired improvement, and hence were forced by circumstances to adopt this method. Such a reason does not exist at the present day, and owing to this, in-and-in breeding has lost many of its old time advocates. To establish uniformity in the herd is the present usage of it, but it is to be remembered that it serves a poor purpose if this uniformity is gained at the expense of other qualities. Line breeding, which does not imply such close relationship of the animals, finds favor with many for securing the benefits that would likely accrue from the in-and-in method and yet be free of its dangers. Instances derivable from the annals of breeding history are many, indicating that the trend of incestuous breeding is to weaken the powers of procreation in the male and lessen the fecundity of the female.

But it is conditions of exercise and food principally that exert the stronger influence on these features. Carr, in his history of the Booth herd, expresses himself as being of the belief that where fertility has occurred in the Warlaby herd, "it can in no instance be attributed to in-and-in breeding, but generally to causes which have led to the decline and extinction of States as well as Shorthorn tribes. Those causes "I believe to be luxury and indolence." The value of exercise to breeding animals is too often overlooked, for it undoubtedly has a beneficial effect in stimulat-

ing the circulation, deepening the respiration, and in every way, when not carried to excess, augments the robustness and vigor of the animal indulging in it. To pen a bull up in a ten by twelve box stall is not the dictum of common sense, for the development of strong and lasting procreative powers. The bull as well as the stallion should have a moderate amount of exercise, that the organs may keep up their several functions that nature destined them to perform. A pasture paddock is a valuable and necessary adjunct to the box-stall if the best results are sought after. A stallion on the road should travel at least over five miles a day for exercise. It has been advocated by some that the bull should be put on a treadmill and made to grind and chop feed. Certain it is that to be "cabin'd, cribb'd, and confin'd," is a fertile cause of ferocity in bulls, and especially so of the more nervous milking breeds; whereas a certain amount of freedom and liberty would be not only more conducive to the body but also to the temperament. In all cases of weakness or debility owing to want of lung room or other like causes, the reproductive organs are the first to become affected. This appears to be nature's fiat to prevent the reproduction of effeminate and sickly animals, and a very effectual one it certainly is.

Food also has a marked effect, and should be the recipient of much attention. In the great majority of cases the stallion receives more than is beneficial for him, and very often the bull is put on to meagre rations. The average groom always has nostrums of one kind or another, for which wonderful results are claimed; but all such should be carefully avoided, for anything that interferes with the natural vigor of the body is sure to react injuriously. Virility depends upon the normal working of all the organs, those of digestion, respiration and reproduction, and hence all should be equally vigorous to secure the most favorable results. The latter are the most delicately constructed of them all, and are very easily deranged. It is almost universally known that all foods which contain large quantities of sugar have a very noticeable effect in decreasing the procreative powers, so much so that it is stated that during the cane season the negroes of the West Indies completely lose the power of reproduction. None of our ordinary cattle and horse foods contain enough of this substance to do any damage, but it has been noticed that carbonaceous foods have an effect alike in kind, but somewhat weaker in degree. In the case of such foods the blood becomes surcharged with fatty matters through their long use in excess, and it also becomes hot and feverish, and the several organs, owing to the deposition of fat, are restricted in their action. The fibres of the muscles become inlaid with fat, and fat deposits cluster around the several organs, and the effects are first announced by the loss of generative power, and culminate, if persisted in, by death from inflammation or some other like disease. One of the first places where fat will accumulate is in the region of the reproductive organs, closing up in the female the orifices leading to the generative structures. It remains to be said, however, that when grass is all that is fed, there is little danger of the bull becoming too fat, if at all used; and the evil of underfeeding lags little behind feeding liberally during the season's work. It is necessary if he is to perform his work well, that he must be in good condition, and to maintain this he must be fed grain in some form. Crushed oats and bran, with a little oil cake, makes a good mixture. Fitting up for show purposes has been the cause in many herds of the loss of generative power, and as a number of

judges make no distinction between handling quality and soft blubber, it will in all likelihood continue so. It is to be remembered that individual animals, as well as breeds, vary greatly in the degree to which they may carry flesh with safety, and allowance should be made for this in endeavoring to set a limit.

The number of services also materially influences the acquisition and continuance of this valuable quality. A stallion should not on an average cover more than one mare a day during the season, and a bull of strong and vigorous at four years, may serve in the near neighborhood of seventy-five cows without serious detriment, provided in all cases that proper management is followed. Overstepping this limit, in the majority of instances, drains the system and thereby weakens the generative abilities.

Cattle Breeding.

From the regions of chaos, formerly the breeders' abode, to the realms of cosmos, a vast space intervenes, but this has been successfully bridged over by the author of the above excellent work—that well-known writer on all breeding topics, Wm. Warfield, of Grassmere, Kentucky. Those that from time to time have had the pleasure of reading productions of this writer in our progressive contemporary, the *Breeder's Gazette*, will be chafing for more, and to them little by way of commendation need be said. This book is without a vestige of a doubt the clearest, most original, and most practical work on breeding now extant, and will be eagerly welcomed by those who have given the question any study. Though simply worded it is not without considerable literary merit, and hence may be read, not only with interest, but also with pleasure. The forepart is devoted to the theory of cattle-breeding, a clear exposition of the heredity, atavism, prepotency and variation being given. Then follows the theory applied, in which the different methods of breeding are vigorously discussed. The author shows that early breeders pursued a justifiable course in adopting the system of in-and-in breeding, to fix the desired qualities their breeding stock possessed, and secure uniformity of type. But he further goes on to show that when such a method is continued for any length of time it results in decreased fecundity, and impotency, tending to abortion, etc. Other diseases, such as tuberculosis and pulmonary disorders, spring up as the outcome. Following the question of line-breeding, the author treats of natural breeding, meaning thereby breeding with the single idea of securing the best possible offspring. He advances the following deductions, that the aims of this method may be the better understood: First, everything tending to impair the constitution, and particularly the procreative powers should be carefully avoided; secondly, the cattle are not to be bred for pedigree or to other purely artificial standards; thirdly, that neglect of the useful qualities already obtained in the cattle is ethically wrong, and to permit such qualities to be atrophied or decreased by non-use, condemnable; and, fourthly, that a man who breeds valuable varieties of stock should never forget they are a trust committed to his charge, and that a neglect of any opportunity to improve on them is to prove false to a high trust. A chapter follows devoted to the historical testimony of the value of the different systems which the author sums up as follows: The historical testimony drawn from the practice of the most famous breeders, is to the effect that incestuous breeding was tried, and found after a very short time to be, even in the hands of the most skilful breeders, an utter failure, and a ruin to many cattle; that outcrosses are necessary,

not only in order to maintain the constitutional vigor of the cattle, but also to secure the best general results; that all, or nearly all breeders, have abandoned the close methods of breeding as too dangerous to be risked, even when believed to be, as they still are by some, the surest road to occasional phenomenal results. The volume is brought to a close with sage advice on the selection of breeding animals, shelter (in which he briefly sums up his practice in the tenet "stable the breeding stock as little as consistent with health," which many would prefer to reconstruct by using the word "much" instead of "little"), general care of cattle and feeding methods. On the question of feeding calves a number, especially dairymen, will, on the score of expense mainly, take exception to allowing the calves to run with the cow for three or four weeks, and then to separate them, and from that time till about three months old, the calf being suckled three times per day, which is the practice the author follows.

The book from beginning to end is fresh with the personal observations and work of the author, little being quoted from other authorities except as the occasion urgently demands it. The price is, we understand, \$2, and it is published by the J. H. Sanders Publishing Co., and may be ordered through this office.

Rambling.

Though favored by nature at all seasons, the district surrounding the thriving little town of Grimsby is trebly so when the freshening influence of the month of June push into its fullest being the verdure of the trees and shrubs, and to accompany this, like having honey a sauce to sugar, the blossoms of the tall locust and smaller rose bushes lend their fragrance to charm the traveller and make him perforce, at least inwardly, pronounce this one of the most beautiful spots within the precincts of Ontario.

In passing from the station to the stock-farm of Messrs. Smith & Son, the objective point of our trip, we went by the imposing residence, magnificent grounds and fruit farm of Mr. L. Woolverton, secretary of the Fruit Growers' Association, and also the farm, or more properly garden, considering its high state of cultivation, of Mr. A. H. Pettit, the secretary of the Permanent Farmers' Institute. Almost adjoining there is a part of the 500 acres that comprises the farm of Mr. Smith. Four hundred and fifty of these acres are all under cultivation this year, seeding being divided into 25 acres of wheat, 30 acres of oats, 25 of peas, 18 of corn, and the rest in pasture, woodland and orchard. The latter is planted with peaches, apples and plums, covering an area of ten acres of the very best of soil, light in texture, but of great strength. The orchard is situated at the foot of the mountain, where the homestead stands, which, by the way, is soon to be replaced by a mansion built of terra cotta brick with cut stone corners. The stone for the latter is brought from Ohio, while the best of building stone forms the foundation already laid.

The farm is at present stocked with 50 Welsh ponies and 65 head of pure-bred Jerseys, 30 of which are pure St. Lamberts, the rest also being more or less of this strain. The lord of the Jersey harem at present is Nell's John Bull, sired by the famous Canada's John Bull, the most closely in-bred Stoke Pogis-Victor Hugo bull at present living. He has 96% per cent. of the blood of the great Mary Anne of St. Lambert, and also 62½ per cent. of the blood of Stoke Pogis 3d, the sire of 27 tested cows giving from 14 lbs. to 36 lbs. 12½ oz. in seven days. Nell's John Bull is out of Nell of St. Lambert, out of the well-

known Ida of St. Lambert, that tested 30 lbs. 2½ oz. in seven days, and has an official A. J. C. C. test of 67 lbs. milk per day and 1,888 lbs. milk in thirty-one days. Nell's John Bull, only 22 months old, is a nice solid color, with strong, masculine head, fine eye, deep chest, full, tightly-ribbed barrel, and a skin mellow and plastic. He is a bull of strong build, though not by any means coarse. One of the best cows is Allie of St. Lambert, a full sister to Ida of St. Lambert, noted above. Allie has tested 26 lbs. 12½ ozs. of butter in a week, and has given a milk average of 62½ lbs. per day. She is a source of much revenue to her owners, as they have sold about \$9,800 worth of her progeny, individual ones selling as high as \$1,500 and \$3,000. Lady Lorne is a magnificent animal, having every quality that goes to make a useful dairy cow, in every respect. She is large and vigorous, extra deep bodied, clean head, large, mild eye, and wide quarters. She is expected to calve in about two weeks. Hugo's Victoria, another female of this excellent herd, has given 373½ lbs. of milk in a week, and 17 lbs. of butter in the same time. She has a capacious, well-balanced udder, with full sized teats, and tense milk-veins of a large calibre. Though eleven years' old Hugo's Bertie, another of these cows, is yet giving a good account of herself, milking well and breeding sure. Her calves have been in strong demand. Crocus of St. Anne's, a cow of many good parts, is from the well-known herd of Mr. Reburn, of St. Anne's de Bellevue. A developed cow in every sense is Polly of St. Lambert, she having a beautiful head with a grand body, and extra udder running well forward, deep and evenly balanced.

The rest of the animals in the same pasture made up as splendid a herd as could well come together under one ownership, and utility was shown in the strong constitutioned, full-uddered individuals on every side. The milking herd numbers 14 head. At present most of the cream derivable from them is shipped to Toronto, and finds a ready sale at a price 30 cents per gallon in advance of that coming from common stock. About 10 gallons per day is the quantity sent now, but much more will be shipped as soon as the other cows come in. The crop of calves this year amount to 14 head, and they are a robust, well-doing group. The cows on pasture are fed about two quarts of pea meal at a feed, and Mr. Smith has found it pay him handsome returns.

The Welsh ponies are of a high class, Mr. Smith having selected the breeding stock in person while in Wales a few years ago. Bay Tom is the king of the stud. He is a sprightly and excellently built stallion, standing about 11½ hands high, and only about 520 lbs. in weight. He carries his age well, being now about twelve years' old. Companion to him is another, slightly smaller, and much younger, standing about 10½ hands, and only 375 lbs. in weight, though two years old. He is a neat, closely-knit stallion, very active and full of spirit. In a paddock a company of new arrivals capered about in great glee with their dams. The mares are a grand lot, being active, vigorous, and neatly put together. Though small in size, the average height when mature being 10½ hands, the ponies have all the quality and vivacity of the highest-strung thoroughbred. While fully as small as the Shetland, they are not nearly as coarse. A gay span whirled us to the station at a gait that would do credit to a team of much larger dimensions. This pair has lately been sold, Mr. T. C. White, of Blenheim, Ont., becoming the fortunate possessor. They are extra well proportioned, excellently muscled, with plenty of dash. They have

been covered with honors wherever shown, having been first at Toronto and Hamilton exhibitions and many other fairs.

In an orchard, through an excellent crop of clover, we saw the broad backs of a number of Berkshires. Seven head at present is their full force. A pair of sows and a boar of Chester Whites have been purchased and are expected to arrive soon. Mr. Smith is a great believer in the value of clover for pigs, a value which we think most of our farmers do not properly estimate.

FOR CANADIAN LIVE-STOCK AND FARM JOURNAL

The Bath and West of England Society.

AN INTERESTING LETTER FROM OUR OWN CORRESPONDENT.

This, the oldest agricultural society in England, having been established in 1777, and next in importance and interest to the Royal Agricultural Society, held its annual show for the present year during the first week in June, in the picturesque little city of Exeter in the county of Devonshire. A more charming situation for a show ground could hardly be imagined than the beautiful park of forty acres of green-sward overlooking the river which courses the valley below, and commanding a view of the green hills for miles in the distance. The show ground itself presents the appearance of a tented field, the buildings being all of a temporary character, and covered with waterproof canvas. This show being, as all the leading agricultural shows in Great Britain are, perpetual in its character, being held in a different city every year, constitutes a standing refutation of the notion which seems to be gaining ground, both in Canada and the United States, that to be successful such shows must be permanently located, and have permanent buildings. The present show strongly reminds us of our own old Provincial in its palmy days, when it dwelt in tents and temporary buildings, and was the admiration of its friends, and had no enemies.

Englishmen attach great importance to the recognition of royalty, and rejoice in the privilege of doing many things "by royal permission," and under the patronage of the royal family. Hence the importance which attaches to the Royal show, which overshadows everything else in its line. It is an understood thing for the breeders of fine stock who make a rule of fitting up representatives of their stock for the shows, to hold back their best things from the earlier shows of the season and to keep them going on for the best possible show they can make at the Royal, as they consider that the prestige of winning there is worth more as an advertisement than a prize from each of all the other shows in the land.

This being the semi-centennial year of the Royal Society, and their show being appointed to be held at Windsor, right under the shadow of the castle, and under the patronage of Her Majesty who, it is said, will be one of the features of the show, the Royal is this year considered an extraordinary meeting, and the exhibitors of fine stock are concentrating their best energies in preparing to do their utmost there, which accounts for a rather small entry in many of the classes at Exeter, and for the fact that not many animals of extraordinary merit are found at this show, the best being in most cases retained for the Royal. Yet the show at Exeter is a really good one, and especially in the classes or breeds which are peculiar to the district in which the show is being held, such as Devon and Sussex cattle, and Devon long wool sheep, a useful class of sheep which is seldom seen at the shows in other sections of the country. The Channel Islands also being within easy distance, an uncon-

monly good show of Jerseys and Guernseys is made. Indeed the Jerseys are the most meritorious collection we have ever seen at any show, both in regard to beauty of color, development of udder and richness of promise as butter-producers.

The Guernseys, a class little known in Canada, are considerably larger than the Jerseys, and will probably average a larger quantity of milk, and that of rich quality, while owing to their larger size they give a greater amount of beef when they are brought to the block. Herefords here make a magnificent show, and prove, what is generally admitted, that upon rich pasture lands they make the best of grazers, and probably put on more flesh than any other breeds, while they do it smoothly and on the parts where the cuts are the most valuable. In this class we find a large proportion of animals of really marvellous character, while nearly all are good, and it seems unaccountable that a breed capable of producing such superior beef animals has not taken a larger place in Canada than they have done.

The Shorthorns of England were certainly not well represented at Exeter, and the class was very disappointing to one who had fixed his expectations at a rather high notch. The entry was smaller than that in any of the cattle classes, some of the sections being represented by only two or three competitors, and while there were in all of the sections a fair share of good, smooth animals, and none that were inferior, yet there were few that struck us as being of extraordinary merit, and none that were phenomenal. In the ring for bulls over three years, the only entries were Mr. Handley's McBeth and Mr. Willis' Rising Star, the former a red and white four-year-old of good size and character, with exceedingly good hindquarters and good fore-end, but deficient in crops and girth, a failing that was quite noticeable at a considerable distance. His competitor, a red three-year-old of the pony order, and light in his thighs and twist, was smooth and neat, though to our mind wanting in promise of size, was placed first by the judges. It is noticeable that both these are Scotch-bred bulls, winning upon English ground, but winning under circumstances which made it an easy thing to do, there being no other entries. We shall see where they stand at Windsor, if indeed they file an appearance there, which is very doubtful.

In the ring for two-year-old bulls there were five entries, one of which for some cause was not forward, and only four put in an appearance. The contest for first place was clearly between Mr. Handley's White Roseberry and Mr. Stratton's red Medallion, and we fully expected to see the first honors go to the massive and masculine white, a bull of really good quality and good character without any appreciable weaknesses, but the two judges split upon them, and a third being called in by the attending steward, decided in favor of the lighter, less fleshy, but more stylish red, a decision we were not prepared to look for from Englishmen, and we were led to wonder if it were possible that to these matter-of-fact men the color prejudice has extended, for we find that even here at last, a white bull is not so generally acceptable as formerly, though they all admit it is only one of the whims of fickle fashion, and that for practical purposes a white is as good as any other color, and that in proportion to numbers they are more generally found to be of superior quality.

Yearling bulls made an entry of eleven, the largest entry in any section of the class, and a fairly good lot all round, with nothing exceptionally strong, the first prize again going to Mr. Stratton's light roan, Merry Mowbray; the second to Mr. Willis' Sir Douglas, Mr.

Handley's Collynie-bred Crowned Head, a light roan youngster, the youngest in the class, and a smooth, level bull, being placed third, a place, we venture to say, he will not be content to hold in the future, and which will not satisfy the ambition of his spirited owner.

Of the five cows entered two were owned by the well-known exhibitor, Mr. Brierly, namely Victoria, a massive, short-legged, thick-fleshed cow of three years and seven months, which was easily placed first, and the red and white Waterloo Cherry 13th, a smooth, well-balanced four-year-old, was given second place, while Mr. Stratton's light roan three-year-old cow Prudent, with an udder development that would delight the advocate of dairy Shorthorns, and a smooth, even, well-proportioned cow withal, was awarded third place. It may be a surprise to Canadians to be told that this class of cows was by no means equal to those shown at our own Toronto and Provincial fairs last year. Yet such is certainly the fact, and the first prize cow here could not have taken a higher stand than third place in competition with Lady Isabel and Havering Nonpareil, of the Bow Park herd. The heifers were a uniformly good lot, with no really strong cards, and not of merit above the corresponding classes found at our own leading exhibitions.

SHEEP.

The sheep classes did not show a large entry, except in Devon long-wools, and while the quality was uniformly good, there were few extra good ones. The custom of coloring the sheep in preparing for the shows is one peculiar to this country, and strikes a stranger as being very curious if not absurd. This is done in the washing, by putting coloring matter in the water, and the different breeds are generally represented by different colors, such as yellow, red, chocolate, pink, etc. Strange to say the management imposes a penalty and disgrace upon the man who paints an unlucky white spot upon his Berkshire pig, or even uses oil or blacking to improve his appearance, yet allows the sheep men to paint *ad libitum*.

The exhibitors of pigs claim that they are holding back their best for the Royal, and we are charitable enough to believe them, for the show here does not bear out the reputation of the country for fancy porkers. There are few choice ones, and these only of an age that does not fit in well with the prize list for the Royal, prominent among which is Mr. Benjafield's young Berkshire boar Royal Star, winner of the championship over all breeds at the Oxfordshire show last week, a pig of very fine quality and character.

A word with respect to the judges and the judging may here be not out of place. Two judges were the number appointed by the council of the society for each class, without regard to the locality from which they come, and it is understood only on their merits as judges of the classes of stock with which they have been familiar. In case of disagreement, a third judge was selected from amongst the stockmen around the ring to decide between the two animals selected.

The judges went through their work expeditiously, honestly we believe, and generally, so far as we could see, the best was placed first, as of course they should always be. Yet it was plainly to be seen that they failed as completely as they do in our own country to satisfy exhibitors. Severe criticism and grumbling was just as freely indulged in, and to our mind quite as many mistakes were made as are generally found to be made by the judges at our fairs.

"Talk about mistakes in judging," said a Canadian visitor in going through the pigs, of which he is admitted to be one of the best judges in Ontario, "I never saw worse work done in Canada."

If such is the case in England where good judges are supposed to be so easily available, it is less difficult to understand the apparently inconsistent work sometimes done by the men who consent to serve our fair associations in Canada, and the frequent reversals of decisions at the different shows here, where the same animals come in competition under different judges, serve to show that men honestly differ in their tastes and judgment, and should not be harshly judged by their fellow-men, who are perhaps quite as far from being infallible.

Stocking a Farm.

(Third Paper.)

The safer way for the beginners is to buy but few individuals at first, and at reasonable prices. They must be good but not necessarily prize-winners. If the sum set apart for the purpose will not buy four, purchase three. In no case commit the egregious blunder of laying the foundation of a herd on an inferior base.

We can never expect, however, to purchase desirable pure-breds at grade prices, otherwise there would be no premium on skill in stock-breeding. Those who are constantly toiling to keep back the current of retrogression would live and die unrewarded. That good animals of the pure types should bring prices considerably higher than grades in all time is only a matter of justice to those who breed them. It is an equitable reward for the expenditure of greater skill and the exercise of greater care.

While farms should be stocked to their full capacity, the greatest vigilance must be exercised that this be not overdone. The measure of full capacity is a somewhat precarious quantity. Like blow sand, it is very liable to shift with the variation of the seasons. What is full capacity one season may only have been three-quarters capacity the previous season, and five quarter capacity the season following, owing to the reason already given. The far safer rule is to keep it rather under than over-stocked, for when feed is plentiful it is always much easier to purchase additional stock than to purchase additional feed when the latter is scarce and dear.

It is extremely doubtful if the ordinary farmer can ever get his money all back, who has to buy feed in quantity when it is beyond the average price. It is all very well for the scientist to tell us that it will pay to purchase bran at \$16 to \$18 per ton, but when the teachings of science take money out of our pockets in a commercial transaction without putting back an equivalent, we are justified in surmising that the scientist is a little off his bearings. As a rule food cannot be purchased so cheaply as it may be raised, therefore the major portion of the food fed upon the farm should be raised there.

Over-stocking in a season of serious shortage is to the farmer with a large stock nothing short of a calamity. He finds himself in a great strait, for when he wants to sell he cannot, since his stock are not in condition, and when he must of necessity purchase feed, it is both scarce and dear.

The farmer carrying a large stock, like the mariner out at sea, must note carefully the probabilities. He must observe the indications of the future and govern himself accordingly. After having done his best to grow supplementary foods when threatened with shortage, the prudent stockman will, when his efforts do not avail, lighten the ship by consigning a part of the cargo to the butcher at the earliest possible moment.

When animals are in lean condition the hope is a vain one that they will bring good prices when sold by auction, and the more purely they are bred in such

a case, the greater the difficulty in making sales, for the breeding is very apt to get the blame in the popular estimate for their poverty rather than lack of food. This is an evil which no amount of reputation can overcome, for there exists deep-rooted, and very properly so, in the popular mind, a close connection between high breeding and an attractive exterior.

If we pay \$20 for wintering an animal and its marketable price in the spring is but \$5 more than it would have brought in the fall, the result is not very satisfactory. We may be told that the manure is worth \$15, and in this way we get our compensation. We answer, that while we place large store upon the value of the manure heap, it is our firm conviction that the farmer whose efforts bring him no other compensation than a dunghill every year, is not in a very enviable position. This will not give the wife of his bosom that rest in old age which her unremitting toils have so well earned; it will not feed or clothe his family, nor will it provide them with that liberal education of which every diligent farmer's boy is so well deserving.

It is far better to sell at three-fourths the value than to pay the cost of wintering. When the storm is evidently coming, pull in sail, lighten the good ship, the farm, of its surplus stock, and when spring time comes again take on cargo according to the capacity of the farm.

It is highly probable that the breeding of pedigreed stock will always be confined to a comparatively limited number; this is owing to the skill required to do it successfully. This is no excuse, however, for the stocking of farms with inferior grades. The practice is most reprehensible wherever it is found, and now that good, pure sires are becoming so plentiful, is utterly without excuse. That the farmers of Ontario will raise food to the value of over one hundred million dollars every year and put it through a machine in the shape of inferior stock that wastes perhaps one-fourth thereof in the use that is made of it, is a libel upon their intelligence. Those who cannot purchase high-bred stock can improve what they have if they are so minded. And is it not reasonable to expect that so they will do in the days that are at hand?

(Concluded.)

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

Our Manitoba Letter.

(From Our Own Correspondent.)

THE LAND BOO.

The boom of which I spoke in my last still goes on and is being felt in every direction. Since the decision of the C. P. R. to build a track from Brandon to Deloraine was made public, land along the Souris has made quite a leap in value. When the network of railroads now under construction has been added to the older roads now running, Manitoba will be splendidly supplied with that great help to the progress of a new country such as this. There has been land going begging for the last six years in the south-west especially, that will in two years be worth several dollars an acre. There has been for two years a growing appreciation of land, but the hundreds of eastern visitors coming west on excursions are doing their own share to push up prices. I rode over a section of C. P. R. land the other day that was secured in April at \$4.50 an acre; yesterday I was assured by the owner that it was resold at \$8. At Carbery I was told by an old friend that he would not let a nice quarter go past him at \$20 which \$7 or \$8 would have bought a year or two ago, and at such outlandish looking places as Elkhorn, I came on pretty rough land, which, with only trifling improvements, is valued

at \$5 or \$6. It is not for the best interests of this country that new people should pay too high for their land, but neither they nor we can check the rising tide, and some of us think, of course, that the tide cannot flow too fast or too far. I say confidently that first-class land in good settlements is not dear at \$25, always provided the buyer knows what he is doing.

The weather along the Red River has been extremely dry, and only showers have fallen in the centre of the province up to the middle of June. Further west there has been rather more rain, and crops promise well. Wheat on good land is wonderfully fresh, but inferior sorts and barley are nothing to boast of. The next fortnight will decide whether the crops will be liberal or only a fair yield is to be got from the best places.

EXPERIMENTAL FARMS.

The experimental farms promise to be of great advantage, and that at Brandon being nearest and of greatest interest in the meantime, I give such details regarding it as may be generally interesting. It has been just about a year in actual work, and considering its previous conditions, the progress made since is very gratifying. It was extremely difficult to find on any one section all the features desirable for such a place. It had to be central, easily seen by both residents and passers by on the great national railroad, and with enough variety to afford examples of all different soils and exposures. The final choice fell on a section just north-west of Brandon city and on the north bank of the Assiniboine. Most of the section is alluvial flat, rather liable to frost, with a sloping bank leading up to the bench land above. From this bank two or three nice springs flow, and in a meandering way reached the river to the south. Soggy, swampy soil, scrub and rank weeds were additional features, and a trail ran diagonally through it. The water now flows in straight tracks, the land is ploughed in a thoroughly workmanlike fashion where required for farming, and along the south side of a new road across the section is a clear meadow of natural pasture and hay ground, with all the bushes cut down by a reaping machine. A good, plain post and wire fence is progressing to completion, hundreds of plots of grain and forage plants are laid out to the best advantage, more land being broken, and a wide belt of trees along the west side started. It is easy to do all this with ample government funds behind the management, but here there is seen everywhere evidence of economy and good work done in a quiet, steady way by capable workmen.

Tree culture in this North-West is in rather a crude condition; we have been too busy and most of us too unsettled to give that sort of work the continuous attention it must have to succeed anywhere. This climate and soil is only adapted to a limited number of sorts. We have in the province about a dozen crab apples, the survivors of thousands which have been brought in, planted with a flourish of trumpets, and frozen or festered to death. But that does not hinder clever talking tree pedlars from selling Iron-clads at a dollar each, which they confidently warrant to do all right if we treat them properly. A good few of us never read about the facts regarding such matters, and this farm will furnish many a valuable object lesson in fruit culture which he that runs may read.

The main object of interest just now on this farm is the many plots of grain growing from seed collected in Russia, India, California, as well as from points nearer home. Frosted seed from the top line down to poor pigs' feed is also on trial, and a further test not on the programme has been lately made. In the

last days of May we had frosts running down to 12° of frost at Brandon, and even lower at some other points. Fortunately the weather was dry and the plants toughened by cold winds, and this, in our dry atmosphere, proved a nearly perfect safeguard in all but the dampest spots. The frost scarcely harmed the outer leaves of some sorts of wheat, and among others such as Russians, Fyfes, and even white wheats from Calcutta and California stood out well, and an old, soft, white wheat grown for fifty years back on the Red River, came out unharmed. One or two soft Indian examples did rather worse, but everywhere the robust habit of the variety seemed the main point. Even English malting barley, running up from 6 to 12 inches long came through scatheless, and deeply sown oats were equally safe, one sort from Rennie, of Toronto, showing a very broad, strong flag. The English prize prolific and spring rye are the pick of the whole for strong, free growth and ample stooling. Frosted seed sown pound for pound on half acre lots against No. 1 hard was thinner and will stool less, but its growth otherwise is difficult to detect from some other unfrosted sorts. If the seed has got a little heat, the frost gets all the blame, and I hear worse accounts of frosted seed elsewhere than anything visible at Brandon. As all these plots will be threshed separately, and the tests are duplicated on two different sorts of ground, this frozen seed test will prove of considerable practical interest. Only one cottage and bank barn are now on the farm, but when the whole buildings contemplated are finished, this will be one of the best sights as well as the most instructive to be found in the province.

Small fruits, such as currants, we can raise now as well here as any where, and strawberries are a little capricious, but the Wilson does well in a good few places. I guess we will be found very good customers to the Ontario apple growers for the next twenty years, but long before that time we will be raising all of the smaller sorts that we want.

Brandon is just now making a big push and glorying in becoming shortly a great railway centre. It will hold its fair this year in summer as an experiment, having of late years been somewhat unlucky in its selection of a show day. The rest of the agricultural societies stick to October, and in spite of some inconveniences, with much greater chance of success. The feature of all these shows this year will be our colts, of which there is this season a wonderful increase, both in number and quality. One township of thirty occupied sections has just 300 head of horseflesh, where ten years ago it would be hard to find a dozen. Besides all we buy from you, there are nearly every week large bands, some of them very fair quality, being brought down from Alberta and Montana, and every village has its Mexican Jack to entertain the crowd with feats of buckjumping and other intelligent means of "breaking a broncho." Broken rigs, broken heads, and occasionally a broken neck of the stud or its rider, give variety to the entertainment; but the farm bred colt is held most in favor, though some very tractable animals from such bands turn up at times. A performing pony of a lively turn of mind is very useful in a country where a travelling circus is rare, and with them, Dominion day races and an occasional serene de obnoxious intermeddlers with venerable social usages, not to speak of picnics and political demonstrations, prairie life is not so very dull as some slow people imagine.

I notice some of our eastern visitors are rather fastidious about the choice of new locations. A school on one corner, a smith's shop on the other, and a

spring creek in the middle of the section you would like to buy, is a rather rare combination here. But there is plenty of good land for adventurous spirits still. On the south-west of Lake Dauphin there are fine streams, good timber and hay, and good wheat land, and if you will only pay a good figure for fancy quarter sections, there will always be found some willing to sell out and go to the front. It is a long way from here to the north pole yet.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

Judges for Exhibitions.

It had not been my intention to take part in this controversy, but as in an article in a previous number of the CANADIAN LIVE-STOCK JOURNAL I had advocated Mr. McCrae's suggestion, I may, perhaps, be permitted to enter into the discussion without being deemed intrusive. The subject is fast reaching the verge of personalities, a matter deeply to be deplored, as in the heat of argument much is often written which in cooler moments is regretted. The question as to the propriety of writing under a soubriquet is totally foreign to the subject: it is a custom which has existed for many years, and the *pros* and *cons* have been argued *ad nauseam*, while as a matter of fact the insertion of such an article in a journal of standing is a sufficient guarantee of the good faith of the writer.

Let us then dismiss such outside issues and calmly consider the matter in dispute, taking the Dominion Shorthorn Association as an instance, since this is the society more particularly alluded to. Mr. McCrae's proposition, as I understand (he will correct me if I am wrong), is that the different associations at their annual meetings make out a list of men (the more the better) whom they consider competent and reliable judges of their respective breeds, and that out of these lists the directors of the different exhibitions may select their judges. Mr. Nicholson takes exception to this plan on the grounds that (1) the leading members being the chief exhibitors, would appoint judges favorable to themselves; (2) that it would be impossible to appoint judges for all the exhibitions; (3) that two-thirds of the Shorthorn breeders are not members of the association, and consequently would have no voice in choosing the judges. He then proceeds to advocate that the directors of the different exhibitions should appoint their judges as hitherto.

Every one who has had any experience with agricultural societies is well aware that the proportion of stockmen amongst the directors is generally infinitesimally small in proportion to others who have little or no knowledge of live-stock, and that in such cases the appointment of judges in those classes is usually left to the one or two directors who are interested in those branches; at the same time these same men are often the largest exhibitors at such shows, and thus practically appoint their own judges, which certainly affords a much greater opportunity for dishonorable practices than does Mr. McCrae's proposition, by which the remaining directors (presuming, of course, that the list consists of none but good men), would be as equally competent to appoint the judges as the one or two stockmen.

With regard to Mr. Nicholson's first objection, admitting, for the sake of argument, that the leading members of the association are the chief exhibitors, which is hardly correct, for if reference is made to the list of officers of the association it will be found that a very few of them are exhibitors, at any rate at the larger shows in Ontario; and even if they were desirous of appointing judges favorable to themselves, it would be an almost impossible matter to influence

so large a number of members from all parts of the Dominion, every one of whom has a vote, notwithstanding Mr. N.'s incomprehensible statement to the contrary. Besides, after the list is made out the directors of the different exhibitions are not bound down to any particular names, the list being merely a number of men whom the association consider competent judges, out of which it is desirable the directors should select.

As to argument No. 2, it is true it might be difficult at the present time to name competent judges for all exhibitions, yet if a sufficient number can be found if only for the larger exhibitions, it is certainly a move in the right direction; and surely with the combined aid of agricultural colleges, exhibitions, etc., it is not expecting too much to hope that the number will annually increase.

With regard to No. 3, it is no fault of the Dominion Shorthorn Association that two-thirds of the Shorthorn-breeders are non-members, and there is no doubt that the association would gladly welcome them into its fold, when they would then have an equal voice on any matter with the other one-third.

It is certainly to be regretted that the association did not nominate a larger number of judges, still if it was an error on the side of caution, blame cannot be imputed to it on that account, and it was hardly good taste in Mr. Nicholson to mention some under their official titles, and designate others as "jobbers," for by this means, although scrupulously avoiding names, as he says, he as sufficiently indicates some, while one is left in doubt as to the "jobbers."

I agree with Mr. N. on the one judge system, provided he be a competent man. There are several reasons in favor of the principle; it is conducive to upright judgment, as he stands alone to answer for his acts, and has no two accomplices in the ring with him on whom to lay the blame of any wrongful or bad decisions; it would have a tendency to bar out incompetent men, as there are many who accept the office who are perfectly aware of their own unfitness, but rely on the other two to hide their own deficiencies, while it would render a greater number of good judges available for other exhibition. There is little doubt that in time the one judge system will come in vogue, but as yet the country is hardly ready to accept of it.

Mr. Nicholson, notwithstanding his disclaimer, has apparently, by the tone of his letters, but a poor opinion of the prominent men of the D. S. H. A., as well as their judges, and it is to be hoped that, as he is a member, he will attend the next annual meeting of the association and see that not only proper officers but also proper judges are elected; in fact, if he has any proof of dishonorable practices it is certainly his duty to do so. I say proof advisedly, for the statements in his letters certainly do not come under that category. Personally I do not concur in Mr. N.'s opinion of the persons referred to, and likewise believe that improper decisions in the ring are more often given from incompetency than from bias.

AGRICOLA.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

The History and Breeding of Bates Shorthorns.

BY RICHARD GIBSON, DELEWARE, ONT.

(Third Paper.)

Of the tribes which may be more especially considered Bates, are those which he retained and bred up to the time of his death, viz., the Duchess, Oxford, Red or Cambridge Rose, Waterloo, Wild Eyes, and Foggathorpe. These may be called the *creme de la*

creme of the many sorts that passed through the master's hand, and the above will ever be considered as having been tried and of having met with the approval of having received the "Hall mark," the endorsement of Mr. Bates himself. Why he retained these and discarded others we know not, but of this there can be no mistake, there was an intrinsic value possessed by each tribe reserved, for as we have seen, Mr. Bates required *good deeds* as well as *good looks*. Utility was his motto, and unless they paid for the food consumed in both milk and beef he had no use for them, and they were quickly consigned to the butcher. That some of the families he discarded may be of more value and better individuals to day than some of the elect is quite possible, and credit is due to those who have so manipulated the various crosses so as to have attained such an object. Why, for instance, he discarded the Barringtons, we cannot tell. Certainly now, for true merit, they deserve the "mark."

Of the various families owned by Mr. Bates while he was experimenting, and up to the time he settled upon the above six, many more than is generally supposed were tried, and as we are not aware a list has ever been published, we will submit one, of the families recorded by Mr. Bates. These may be considered as Bates in distinction to Bell-Bates. He may have owned others, and we know he did, but he neither recorded them or their produce: they simply passed through his hands as ordinary stock.

Adelaide was out of Lupin, the dam of Blanche, but I find none of her descendants.

Blanche—it is not necessary to speak of her descendants, so well are they known as Blanchés, Roan Duchesses, Brunettes, etc.

Brown was dam of Brown 2d, sold to Messrs. Golden, Port Philip, Australia.

Fletche produced for Mr. Bates Fletcher 2d, 3d, and 4th. From 2d descended the various branches known as Fanny, Fantail, Fennel, Fidget and Fuchsia.

Lady Barrington bred for Mr. Bates five heifers in successive years. One was sent to Ohio, and Olive Leaf was sold to Mr. Harvey. Lady Barrington 2d bred 3d and 4th, the latter was also sold to Mr. Harvey. From Olive Leaf descend the Countess of Barrington, the Lallys, and Grand Duchess of Barrington. From Lady Barrington 2d descend the Lady Barringtons, the Lady Bates, and Mr. Alexander's Baroness.

Shorthorns 1st bred four females for Mr. Bates. Shorthorns 2d, by g. son of Governor (1077), bred a c. c. named Kirklevington, sold by Mr. Bates to Messrs. Foreman & Etcbes, Liverpool.

Teeswater was sold to the Ohio Importing Co.

Thorpe 1st was probably from the same herd as the Waterloo Cow, as she was purchased at Thorpe, in the Co. of Durham, and each had two consecutive crosses of Waterloo 2816.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

Shorthorn Pioneers.

(Continued.)

JOHN HOWITT, OF GUELPH.

Prince Albert =943=, arrived at The Grange, Mr. Howitt's farm, near Guelph, in December, 1846. The long journey from Mr. Vail's, in New York State, had told on his appearance, but he soon got over that. During the whole winter the master himself daily saw to his comfort, and he grew into a fine animal. The herd at this time was well cared for and of very superior merit. The roan bull Brilliant =375=, was in good form, and a large, fine animal. Several of the old cows were in show form, while among the younger ones Young Favorite =2054=, Moss Rose =1592=, and Duchess of Waterloo =943=, made a fine trio of three-year-olds. The younger stock had two plums in Amelia =595=, and Pedigree =1661=, a daughter of Old Cowslip =795=.

During this winter the celebrated Lord Elgin received the appointment of Governor-General of Canada, and arrived early in the year 1847. During the summer he took a trip through the Upper Province and visited Guelph. His party came in a motley lot of farmers' wagons from Galt by way of the Waterloo road, and arrived after a drenching, all day rain. He was entertained in a brick house at the east end of the market square, then the residence of J. S. Wilson, afterward occupied by Rev. Arthur Palmer, and removed to make room for the Grand Trunk Railway station, which now occupies its site. Here a grand dinner was given in the evening to His Excellency. Next morning Lord Elgin, with two companions, walked to The Grange to see Mr. Howitt's Shorthorns. He examined all the animals, and made many practical remarks, showing the great interest he took in the improvement of the live-stock of the colony. The second Provincial Exhibition was held the same fall in Hamilton, 6th and 7th October, 1847. Lord Elgin was present, and formally opened it amid a regular deluge of rain, which continued the whole time of the show. This prevented a large attendance, and was so uncomfortable that no report of the prize-list was secured by the press. The Governor went over the whole exhibit with a number of visitors from Lower Canada and New York State. Coming to Mr. Howitt's stock, he said: "These are Guelph cattle," and remarked he had seen them during his visit there. He even remembered names of individual animals. A large share of the prizes fell to Mr. Howitt. In 1848 the show was at Cobourg, and in 1849 at Kingston. At this meeting Mr. John Wettenhall, of Nelson, a special friend of Mr. Howitt, was elected president. He was an enterprising farmer, a great admirer of good stock, and had some from The Grange herd. Unfortunately he died in July of the same year. The fifth exhibition took place at the town of Niagara on the 18th, 19th and 20th of September. Mr. Howitt sent a large consignment of his stock in charge of his herdsmen, Wm. Thompson, John Robinson and Joseph Watkins. They were driven by road to Hamilton, and went by boat thence to Niagara. They experienced a severe storm on Lake Ontario and were knocked about a good deal. The number of animals out was large—65 in the class and 13 three-year-old bulls entered the ring. Mr. Howitt got the bulk of the prizes. Among the other exhibitors were Messrs. Ferguson, Jones, Wade, Atkinson, Miller and Dickson. The young stock exhibited was very highly commended by the judges. At this show there were large numbers of Americans from the adjoining districts in the State of New York, and this afterward led to several sales. Several (Amer-

Name.	Color.	Date of Birth	Breeder.	Sire.	Dam.	Dam's Sire.
Duchess	R. and W.	1808	Vol. I, published 1822. C. Colling.	Comet.	Duchess.	Favorite.
Fairy	White.	1811	Mr. Hustler.	Duke.	Old Daisy.	Favorite.
Red Rose	Red.	1811	"	Yarborough.	American Coin.	Favorite.
Young Starling	R. and W.	1817	T. Bates.	Ketton II.	Maynard's Starling	Bull of Maynard's
Philippa	R. and W.	1824	Vol. II, published 1829. W. Charlton	Exmouth.	Dandy.	Wellington.
Rosalind	Roan.	1824	"	"	"	Yarborough.
Adelaide	Roan.	1830	Vol. III, published 1836. Mr. Hutchinson	Pancake.	Lupin.	Belvedere.
Bampton	"	1834	T. Bates.	Son of Belvedere.	"	Blucher.
Blanche	White.	1831	Mr. Hutchinson.	Belvedere.	Lupin.	Belvedere.
Brown	Roan.	1830	Mr. Brown.	Matchem.	"	Marchem.
Buttercup	Yellow Red.	1827	Mr. Barker.	Rob Roy.	"	North Star.
Child's Cow	Roan.	1830	Mr. Brown.	Children.	"	Sir Richard.
Darlington	Yellow Red.	1830	Mr. Bates.	2d Hubback.	"	2d Hubback.
Ellerton 1st	Roan.	1831	"	Bolivar.	"	Nonpareil.
Fletcher	Red.	1829	Mr. Fletcher.	Son of Yng Wynyard.	Descended from	J. Brown's Red Bull.
Lady Barrington	"	1829	Lord Barrington.	Son of Herdsman.	Young Alicia.	Wonderful.
Margery	Roan.	1833	T. Bates.	Belvedere.	Jack Cade alias	Brigham's Bull.
Matchem Coin	White.	1827	Mr. Brown	Matchem.	Young Wynyard.	Young Hector.
Rosebud	Roan.	1831	T. Bates.	G. Son of Sir Dimple.	Lady.	Hector 2d.
Shorthorn's 1st	"	1829	Mr. Clarke.	Saladin.	Strawberry.	Son of Princess.
Teeswater	"	1832	T. Bates.	Belvedere.	"	Waterloo.
Thorpe 1st	"	1832	"	"	"	"
Waterloo Cow	Red.	1829	Prop. of T. Bates.	Waterloo.	White Rose.	Young Wynyard.
White Rose 1st	Roan.	1833	T. Bates.	Cambier.	Young Wildair.	Wonderful.
Wild Eyes	"	1832	Mr. Parrington	Emperor.	"	North Star.
Nonpareil	"	1827	Mr. Robinson	Magnet.	"	"
Foggathorpe	Roan.	1830	Vol IV and V. Mr. Edwards.	Marlboro.	Rosebud.	Ebor.
Nonsuch	White.	1832	T. Bates.	Belvedere.	Nonsuch.	Magnet.
Queen	R. and W.	1832	Prop. T. Bates.	Farmer.	"	Young Lancaster.
Red Princess 5th	"	1835	T. Bates.	Belvedere.	Red Princess 3d.	J. Thompson's Bull.

Of the above, the Duchess Oxford, Waterloo, Cambridge Rose, Wild Eyes, and Foggathorpe families, will be considered more fully in a future paper.

Of the others, some disappear entirely from the herd book, and the following are the only ones of importance now:

Fairy is of the once noted Old Daisy sort. I can find no descendants that trace through Fairy 2d bred by Mr. Bates from Fairy.

Of Young Starling, it may be interesting to know that Mr. Bates bred this family for some years, and also that from it sprung the Lord of Eryholme, a bull used with such success as an outcross on a branch of the Oxford family. Mr. Bates also stated that the notorious Mrs. Motte, of the 1817 importation, was descended from Starling. I can find no descendants tracing through Mr. Bates' herd.

White Rose is the common ancestress of the Secret, Surmise, Silence, and Surprise families, all descended from Secret by Short Tail, out of White Rose. Sold to Mr. Harvey.

Nonpareil descends from Young Sally, bred by R. Colling. From the coupling of her son Magnet and his sister, the result was Nonpareil, the dam of Mr. Whitaker's Norfolk, who was selected as an outcross by Mr. Bates on four of his best cows, including his favorite Duchess 33d, and from this combination sprung all the Duchesses of Thoradale, Geneva and Oneida. This sort is still extant in various herds in England, and a cow, Duchess, out of Nonsuch 2d, by Belvedere, dam Nonsuch, by Magnet, was sold by Mr. Bates to Mr. Vail, Troy, N. Y.

"I like your paper very much, and it is improving with every number."—W. A. Return, St. Anne de Bellevue, P. Q.

cans) came during the next year and purchased stock from Howitt.

One feature of the address of the vice-president, who assumed office after Mr. Wetenhall's death, may be mentioned. He strongly urged the farmers to stick to oxen for farm work, and oppose the growing tendency to introduce horses for that purpose. These latter were too expensive to keep, since they ate enough during a summer to support a small family, and moreover were no use for food when they became old.

Mr. Howitt was a strong advocate of tracing pedigrees to imported stock, and strenuously opposed the admission to the herd book of any animals tracing back to "the woods." When the point was carried against him, and animals with four crosses were allowed in the record as pure bred, he refused to enter any of his animals. His pedigrees were well and carefully kept, but were all lost in the fire which consumed his dwelling on Christmas eve, 1852. The fire was only discovered in time to get the family out of the burning building. A small desk was saved containing a few papers, a gun and a child's silver ring. The loss was complete, and the pedigrees were never replaced. Those that have been completed were made from records given to others with animals sold. Mr. Howitt never took the same interest in the herd after this. He sold them as opportunity offered, and by 1858 they were all away and The Grange herd of Shorthorns was a thing of the past.

Mutual Live-Stock Insurance Association of Ontario.

Feeling that such an association as the above was badly needed, a number of our most enterprising stockmen took the matter up and as they received much encouragement from others interested in all branches of the live-stock industry, they deemed it advisable to at once establish the association on a working basis. For this purpose a meeting was convened at the city of Stratford, on June 25th, with Mr. John McMillan, M. P., in the chair, and M. Y. McLean as secretary. There was a good attendance of representative men, and the business was quickly despatched. The name of the association adopted by the meeting was that given in the title heading of this article.

The question of locating the head office was discussed, there being three applications from different places for the same, namely: Stratford, Seaforth and London. The majority of the voters favored Seaforth, so this was the place chosen.

The next business to arise was the electing of directors. It was decided that the board of directors should number fifteen, and to supply these the following nominations were made: Messrs. John McMillan, Alex. Innes, W. D. Sorby, T. D. Wilson, D. McKintosh, John Beattie, A. Bishop, R. Reith, Thos. Evans, Idington, McLaughlin, Bessett, Meyer, Graham, Blackall, Moore, Cowan, Lavin, Gillson, Murdie, McCrae, Smith, Smellie, Mason, Ritchie, Russell, Milne, Biggots, Stewart, Whyte and McClure.

The result of the balloting showed that the first fifteen as given in the above list were elected. The meeting immediately adjourned. The association is now firmly established, and there is no room for doubt but that it will do a good work and meet a long felt want.

"We are still holding an high opinion of the JOURNAL. It deals with every subject in a very thorough and practical manner. As an advertising medium we find it unsurpassed."—A. C. Hallman & Co., New Dundee, Ont.

How the Danes Built Up Their Hog Industry.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—You will be glad to know that our articles on hog-raising have excited a deep interest among farmers generally, judging from the large number of letters we have received on the subject, and the expressed determination to go more largely into hog-raising.

In our last we expressed the intention of writing you regarding hog-raising and feeding in Denmark and Ireland, but instead of so doing prefer to send you a letter received from the party who is agent for the sale of our bacon in London. He also sells largely for curers in Denmark and Ireland, and was for years extensively engaged in bacon curing in the latter country, so that he thoroughly understands what he writes about.

Hoping that our efforts to place the subject in its true light before Canadian farmers, by your kindness in giving it space, will prove advantageous to all concerned.

We are, yours truly,
W. DAVIES & Co.

Tooley Street, London, S. E., }
25th April, 1889.

MR. WM. DAVIES, TORONTO, CANADA:

SIR,—We have been greatly interested in reading your clear and forcible letter to the farmers of Canada upon hog-raising. You have struck the key-note of the situation, and it does seem strange, indeed, to us, that your farmers cannot see where their best interests lie. Canadians are held to be proverbial for keenness, but in the matter of hog-raising they have terribly missed their mark. I have just returned from a trip to Denmark, and I only wish some of your intelligent farmers of Canada could have accompanied me. Denmark teaches most countries a wonderful lesson in pastoral pursuits. To see what these people have done in five years is astounding. First of all they dived deep into the mysteries of successful butter-making, grasped all the difficulties, which have been almost reduced to a science, till they have "licked all creation," and to-day they have absolutely no competitors in London or the northern markets of England. Their butter (finest Danish), in hundredweight white wooded casks, with white hoops, fetched this winter 144 to 146 shillings per cwt. of 112 lbs., say 32 cents per pound from first hands, on our market. They learnt how to feed the cattle, and their secret is all dry food.

Having conquered this butter difficulty, they soon began to see that hog-raising was four to five times more profitable than raising horned stock, and much more profitable than raising anything else. Their breed of hog was all wrong for bacon purposes for the London market (the most critical market in England). They imported at once the very finest strains of the improved large Yorkshire breed, the best bacon hog the world has ever produced.

Having got the right class of hogs, they began to learn how to feed them; and here again they scored a big success. You know a farmer may feed his hogs well and yet waste a quantity of food, besides creating an animal, through ignorance or kindness of heart, which has to be sold at the lowest market price. The Danes, by judicious feeding, raise a long, lean, bacon hog, which commands the highest price and gives the greatest satisfaction. In Denmark hogs are sold by live weight, in three classes, lean, medium and fat, at an average of two and three shillings per 112 lbs. difference in value. Since the Danes have thoroughly understood that there is nothing in the world pays so well on a farm as breeding and feeding hogs for bacon purposes (you have always buyers for bacon hogs) it is a certainty they have advanced in this industry by leaps and bounds. Ten thousand to twelve thousand hogs of Danish bacon arrive in London every week. The product is appreciated, and is seriously handicapping all Canadian and American meats, because they send what London wants—long, lean bacon.

Again, the Danish farmers take immense care of their swine. A great feature, which they hold to be of the greatest benefit, is to keep their piggeries very clean, very dry, and very warm, especially in cold weather. I was up there when the thermometer stood at 18° below zero, and I could not help thinking it was the counterpart of your country in winter. They have the same difficulties of weather and cold that you have to encounter, but they battle with

the elements successfully, and the cowhouses and piggeries are pleasing to see, all the animals clean, dry and warm, of course thriving and doing well.

Now what Denmark has done with a very poor country and only two millions of people, Canada can do, and do easily. Only let the farmer see that to raise all the hogs he can will pay him better than anything else, just as clearly as the Danes see it, and a big future is in store for Canada. The Danes are punishing the Irish bacon curers and pressing them very closely in market values to-day in England, and I feel certain they will outstrip the Irish farmer in the race. In Ireland they do not understand pig-feeding and rearing nearly so well as the Danes do. They (in Ireland) overfeed, keep the hog wet and dirty under foot, and pay little attention to the state of their piggeries. All this is most detrimental to hogs thriving fast and well.

If you can induce the farmers of Canada to supply you with a suitable hog, we can find an outlet for any quantity, because Canadian bacon as prepared by you is in good favor and treads close upon the heels of Danish bacon in value; but you want a steady supply all the year round to keep the article always upon the market and in front of buyers.

I may here say that a large quantity of improved Yorkshire hogs are being sent to Sweden to stiffen their breed, which is at present too soft to make bacon of the first quality. Let Canada arise to her privileges at once or she will certainly be beaten out of the field, and that very soon.

I hope your hogs, improved large Yorkshire breed, will arrive safely.

J. WHEELER BENNETT.

P. S.—Since the above was written we have received a pamphlet urging the Russian farmer to go largely into the swine industry and adopt approved methods, and as an argument giving statistics showing hogs have increased in Denmark fivefold in five years.

J. W. B.

A Black Cotswold Ram.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Would you please give me some advice through your JOURNAL concerning a black Cotswold lamb? On Saturday, the 18th of May, an imported Cotswold ewe gave birth to a ram lamb which is mostly black. He is the best lamb I ever saw of his age. (1) Would it be advisable to show the lamb at the exhibitions this fall, or would they rule him out on account of his color? (2) Would his stock be white or would they be liable to have black spots on them. He is also from an imported ram. All the rest of my lambs are white, not even a black spot on them, and all from the same ram.

SUBSCRIBER.

Canboro, Ont.

1. It certainly would not be advisable to endeavor to show such a ram, although pure bred, at any of our exhibitions, as he would undoubtedly be ruled out solely on account of his color, which is the very opposite of that required of a pure-bred Cotswold.

(2) If it were brought to light after making enquiries into his ancestral connections, that some of them were also of this color, then the chances of it appearing in the progeny of this ram would become more or less great, according as the relationship is more or less close. It may then be an instance of atavism, or "throwing back," as it is called, to some of his remote ancestors, or on the other hand, it may possibly be but a sport and not likely to be repeated. In any case we could not recommend his use as a pure-bred Cotswold for breeding purposes.

Guernsey Breeders.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—We are pleased to read in this month's JOURNAL, your article on Guernsey Cattle in which you speak so highly of them, no more than they deserve.

As we sent you an advertisement of Guernsey bull calves for sale to be inserted in July number before we saw your article, you will have realized you were mistaken as to there being none in the Dominion. We have a small herd, for which we were awarded the gold medal at Toronto last fall, and would add to them by purchase were it not for the annoyance and

expense of quarantine, as they can be had in the United States.

The pioneer importer and owner of the largest herd in the Dominion is the Hon. J. J. C. Abbott, and from his herd we made our selection. He also supplied Mr. Mulock, M. P., with the nucleus of his herd, and Mr. Fisher, M. P., also. Besides the above Mr. Brown, of Charlottetown, P. E. I., has a few imported from the island.

We think the above covers the whole ground. All who have them are highly pleased with them, and without saying anything against the Jerseys, for they are grand dairy animals, the Guernseys are more suitable for the average farmer. They are larger and hardier, and crossed on grade Shorthorns or even on your special aversion, the scrub, the heifers make very desirable dairy cows, and of good size. Large numbers of Guernsey bulls have been purchased by the dairy farmers of Wisconsin, whose dairy products are increasing in quantity at an enormous rate, and the quality is also improving greatly, if not in the same ratio.

Guernseys are in high and increasing favor in England, also in the U. S., and we hope to hear of their increasing here.

WM DAVIES & SON.

Kine Croft Farm, Markham.

When we wrote the article referred to we were aware that there had been a few herds of the "fawn and white" started, but so completely had their light been hid under a bushel that we could not with certainty say that they still existed. To know that they have been so little heard of simply through the modesty of their patrons and not because of failure, is indeed pleasing to us, and we would make the suggestion that it would be well for their upholders to embrace every opportunity to place the merits of their favorites before the live-stock world, for unless this is done they cannot even obtain a place in the fierce competitive race that is now being run.

We hope our Guernsey friends will recognise this and let us at least hear from them frequently. It is unnecessary for us to say that our advertisement and stock notes columns are as free to them as to any others.—ED.

Washing Before Shearing.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR: I had a shearing of 120 lbs. of unwashed wool and the dealers would only give half price for it, so I washed it and it made 83 lbs. tub-washed wool. Now (1) I want to know what I would have gained if I had washed the sheep and allowed ten or twelve days to elapse before shearing? I think I would have got a pound more on each fleece. (2) I should like to know the reason why ewes are exhibited in pairs, and why they should not be shown singly as well as heifers, sows, or female birds? I should like to hear the views of some of your readers as well on the above.

ALPHA.

1. In washing the wool after being removed from the sheep, if soap was freely used, you would completely remove the yolk or natural oil that contributes greatly to the value of the wool. By washing while on the sheep and allowing ten or twelve days to go by before shearing, you would thereby give it time to regain the yolk lost, and thus secure a clip heavier, of sounder fibre and of brighter lustre, which should bring a better price.

2. This question some time ago was a topic for discussion by our fair authorities, and the outcome was that the present method continued in vogue. Sheep are so plentiful on any farm pretending to handle them, that it becomes an easy matter to meet this requirement, as far as numbers are concerned; and it is also a more severe test of the breeder's skill to have uniformity in his stock, especially if excellent in kind. To our mind no very forcible argument can be urged in favor of either showing in pairs or singly.—ED.

Ayrshires vs. Shorthorns for Dairy Purposes.

THEIR RECORDS REVIEWED BY A VETERAN BREEDER.
EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Although a regular reader of your JOURNAL, it was not until a few days ago that I noticed a statement by Mr. J. C. Snell, of Edmonton, in an essay read at the Shorthorn Breeders' Association in February last, wherein he, portraying the merits and capabilities of this favorite breed, both for beef and as milk-producers, says: "The records where they have come in competition with other breeds are largely in favor of the Shorthorns. In Canada, in the only instance we have on record where a grade Shorthorn competed with the milking breeds at the Provincial Fair in London in 1885, the Shorthorn grade won the highest honors easily, both for quantity and quality, though the only one of her class in the competition."

This statement is quite erroneous, and it seems strange that Mr. S. should have made such a mistake, as the published records of this test are very different. First, there were two grade Shorthorn cows that competed for this prize; and, secondly, neither of them "won the highest honors." The cow that secured first prize and thereby won the highest honors in this contest, was Mr. Fuller's Jersey, Rose of Eden, and next to her came Mr. Hiles' Ayrshire cow Louise. But again I might say that was not by any means the only instance we have on record of Shorthorns being in competition with milking breeds. At the late Provincial show at Kingston Shorthorns and their grades competed for the sweepstakes as milkers. But as in London in 1885, so in Kingston in 1888, the Jerseys and Ayrshires carried the palm and came out victorious. The Ayrshire won a still more decisive victory at the same city when the Provincial was held there in 1882, when the \$100 prize for the best five cows of any breed for general purpose and profit, was the bone of contention. Among others, the gold medal herd of pure-bred Durhams contested for this prize with the milking breeds, and were marshalled in the ring against them, but strange to say "these cosmopolitan Shorthorns, the acme of bovine excellence," had to fall back and suffer the chagrin of seeing the modest, unassuming Ayrshires, "the poor man's cow," advance to the fore gaily decked with the winning ribbons. Why was it thus? Because those symmetrical and blocky creatures could not give the profit to their owners that the others could.

We are ever willing to accord all that our friend claims for them as beef producers, and his theory as regards raising their produce in order to reduce and subvert their feeding into milking qualities may be all right, but if he should succeed in reaching this desired object, I shall be very much mistaken if he will be able to look upon the product of his endeavor with that same satisfaction that he does at the present time. Such treatment, I am apt to think, will reduce their beautiful, symmetrical forms into an ungainly and bony frame that will not be so desirable to look upon; but nevertheless, they may be more useful and profitable for the dairy. This, however, remains to be proved, and we scarcely think there will be any Shorthorn breeders that will put Mr. Snell's suggestions to the test. It will be a hard matter for them, I imagine, to subject their favorites to a plain skim milk diet.

There is another feature in this essay that should not be lost sight of, and that is the grade element. This signifies a mixture, so the animal that Mr. S. claims credit for might possibly be $\frac{3}{4}$ Ayrshire or $\frac{1}{4}$ Jersey, and consequently the milking qualities of such a cow would very likely be derived from this source. In that case very little credit would accrue to the Shorthorn, even if she had been successful in the contest.

That there are good milkers among them I will acknowledge, but according to my observation and experience this is the exception and not the rule, and most of the Shorthorn breeders, I imagine, will acknowledge this to be the case, whilst on the other hand, with some of the milking breeds at least, the reverse of this is the fact. The poor milker is the exception with them and the great majority good milkers. I have been breeding Ayrshires for over 20 years and scarcely remember raising a heifer that developed into a cow, that could be considered a poor milker or that could be condemned and turned aside as unprofitable for the dairy.

THOS. GUY.

Sydenham Farm, Oshawa, Ont.

Association Judges Upheld.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I congratulate Mr. Nicholson for manfully signing his name to his article and thereby giving more weight to his assertions. And now, Mr. Nicholson, I did not say that you were afraid of your rivals in a pugilistic encounter, but in other ways I am not so sure but you are. And next, I do not hold myself responsible for printer's mistakes, and I cannot see any big task in appointing judges capable of judging for 1,000 exhibitions, if need be, although I think you are wide of the mark. And also about the sarcasm that you speak of, all my answer is, that "folks who live in glass houses should not throw stones."

And now as to the best mode of appointing judges. You wish to stick to the old plan; that is, each board is to appoint the judges for its own show. And you know as well as any one else, that though this plan has had a long and fair trial, it has proved a failure and not only so, but has often stopped new exhibitors at the very start from trying again; and if any one quietly asked the directors why they appointed such men, they would receive as answer, that they did not know any one better qualified for the position.

Let me give you an example of the quality of one of these men. At Kingston, I believe, in 1882, we were unmercifully handled at the hands of the judges, and your humble servant cried quit, after the two-year-old heifers were judged. And on asking one of the judges if he had ever been a judge of Galloways, he said yes. Second question, Where? Ans. Hamilton. Third question, Were they spotted? Ans. Yes. Fourth question, Had they horns? Ans. Yes. And I can give plenty more instances of the same kind. So much for the appointing of judges by exhibition boards. And is it any wonder that we seek another plan?

And now, Mr. Nicholson, in all fairness, can any one know as well as the breeders who are the best men to judge their particular breed of stock? And not only that, but in a very short time the breeders themselves will weed out those men who will not do right; and though I am still in favor of the different breeders' associations assuming the responsibility of the judging in their own particular line of stock, because I feel that each member of such association has rights with the others in the appointing of these men; and if the president or any one else uses their position for the low purpose of gaining honors that he does not deserve, have him removed, which you cannot do if the breeders have no say in the appointment of the judges. And I think that in the men named in the D. S. B. A. there can be enough men got to judge at fairs who will not fear nor favor any man, not even the president. But you must also remember that many men have many minds, and also that one man is as much entitled to his opinion as another, and it is just possible that they may be as near right as you.

There are several families in Shorthorns, and I believe the breeders of these particular branches of the same family cling as stiffly to their opinions as if they were two distinct breeds; and this of itself will always cause more or less dissatisfaction; and as for remedy, the breeders themselves must solve the problem.

I don't say that every prize has been on its merits, nor yet do I say that it will in the future be so, but this I do say, you will by the new plan have a say in the remedy for the future which you have not had in the past. Hoping that Mr. Dryden is nearer the right than you seem to think he is,

I remain,
Jamefield, Guelph.
WM. MCCRAE.

Veterinary.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

Castration of Colts.

BY F. C. GRENSIDE, V. S., GUELPH, ONT.

The most experienced and skilful operators acknowledge that a certain per centage of deaths and unfavorable results are almost inevitable from castration, but the exercise of judgment and good management has a great influence in keeping the losses down to a minimum.

Although a great deal depends upon the operator those in immediate attendance are by no means free from responsibility. In choosing the age at which it

is preferable to "cut" a colt, we may be guided by remembering that the smaller the testicles are, providing the colt is vigorous and in good health, the less effect the operation will have, either in producing pain or other unfavorable results. At two or three months of age would be a desirable time, if the glands were only more easy of access at this period, but as a general rule the colt has to be left until it is a year old, for the winter season is not a suitable time. The idea that colts develop better in some points if left uncut until two years, is a mistaken one, and it certainly hinders their growth more if left to this age, or at any rate they lose more; the result of the operation, on account of it having a greater influence upon the system when the colt is more developed.

The breeder will, as a rule, save himself a good deal of trouble, and reduce the risk to some extent by always having the operation performed during the second spring of a colt's life. There is decidedly less risk to colts that are at pasture than those housed. Exercise is indispensable after the operation, and such as a young animal gets in roaming about in search of food in the fields is the best kind. In addition, the air is certain to be pure in the fields, but this is very uncertain in the majority of stables. The noxious germs floating in impure air are very apt to attack a subject, rendered susceptible to their injurious influences by the derangement which must necessarily result from such a serious operation as depriving an animal of its testicles.

We have evidence of the injurious effects of contaminated air upon newly castrated animals in the fact that the mortality from castration is acknowledged to be greater in towns and cities than in the country.

It is no doubt an advantage to have a colt for a week on grass prior to cutting. The fresh grass rouses the excretory organs, particularly such important ones as the bowels and kidneys, to desirable activity, and renders the system less liable to disease. Moderate warmth is most favorable, such as we usually experience in this country about the end of May and the beginning of June. Cold, damp weather is to be particularly avoided. If the days are warm and nights cool the colt should be housed in a clean stable at night, and let out in the day time.

Some care should be exercised to avoid operating on colts that are not in good health. A condition much to be dreaded is the lurking about the system of the germs of strangles, the operation causing the development of the disease; this complication frequently leading to fatal results.

Unthriftiness is indicated by a lower state of condition than should be expected from the treatment given; a dry, harsh coat, and a tendency not to shed until late in the spring. There is no doubt that a colt stands the operation best when in a high state of vigor, such as should result from a sufficiency of food and plenty of exercise.

As to the method of operating, there are only two modes that are in general use in this Province. Both of them are good methods, from the fact that they are successful. We occasionally hear one or other of the plans denounced, if ill-luck has attended an operation, but it is safer to judge from a large number of cases, rather than draw our inferences from a few. The two methods referred to, are by the clamps and by the ecraseur. The clamp method is generally understood as it has been so largely practised for a number of years in this country. The ecraseur—literally a "crusher"—is a French invention, the essential part of which is a steel chain tightened by a screw. The chain is sufficiently sharp to cut through and crush the cord, leaving very little bruised tissue at the end.

The clamp necessarily bruises the tissue of the cord to an extent equal to the breadth of the instrument. This bruised and deadened tissue has a tendency to increase the inflammatory action in the cord.

I have heard many farmers express the opinion that the ecraseur method caused more pain than the clamping. It certainly appears to produce more suffering while the chain is cutting through the cord than the pressure of the clamps during their application, but the clamps are left on for twenty-four hours, and although the feeling becomes numbed after a time, there must still be a certain amount of pain experienced until they are removed, and it is questionable if there is not more suffering on the whole from the clamps than from the ecraseur. An advantage that the latter instrument has over the clamp is that the colt operated upon with it requires no more attention if all goes right, whereas the clamp has to be removed at the end of twenty-four hours, which entails a certain amount of trouble and some risk in the way of causing bleeding, if they are not removed carefully, or too much pulled. It is seldom that bleeding causes serious results, and no alarm need be felt unless it continues for a length of time, and is profuse enough to produce a running stream. Cases of fatal hemorrhage occasionally occur from disease of the coats of the blood vessel above the point of operation. Castrators ought to exercise a good deal of care with regard to cleanliness. The instruments and hands of the operator should be kept scrupulously clean. Disease-producing germs are apt to cling tenaciously to the hands of the surgeon. They get on the hands and instruments in the opening of abscesses and in the manipulation of foul wounds, etc. Some operators have been known to lose a number of colts in succession, after having been in contact with the discharging womb of a mare that was the subject of inflamed womb.

If a colt is kept dry and warm, with plenty of exercise, such as he gets in moving about a field, and is fed on a grass diet, unfavorable results do not frequently occur. The most commonly occurring sequel is swelling of the scrotum or sheath; but it need not occasion any alarm unless it assumes considerable proportions, as when it extends forward in front of the sheath. If swelling occurs when the management is what it should be, it appears to be the result in many cases of the wounds made by the knife healing up too rapidly so that exit is not given to the matter—pus that always forms. If much swelling occurs it is necessary to pass the finger, thoroughly cleansed and oiled into the wound, and separate the lips, and break up any adhesions that may be present between them and the cord. This will usually be followed by a subsidence of the swelling; but it may be advisable to give the most dependent parts of the sheath a few punctures with the knife, as this will hasten its disappearance. The latter treatment should only be adopted if the swelling is considerable.

Another sequel is a growth on the end of the cord, sometimes described as a cauliflower-like excrescence—schirrous cord. The growth varies in size from that of a hen's egg to the size of a child's head. Its cause is sometimes obscure, but anything that tends to excite inflammatory action in the cord is liable to bring it about; as violent drawing on the cord, bruising much of its substance, as with a broad clamp, and dividing the cord too low down.

It appears to more frequently follow the use of the clamps than that of the ecraseur. However, it is not usually a very serious condition, if the veterinary surgeon is called in time, as he will remove it, and no farther trouble may result.

Two very serious sequels not infrequently occur, viz.,

lock-jaw—tetanus—and inflammation of the lining membrane of the belly—peritonitis. They occasionally occur without any evident cause, and sometimes the operator is unjustly blamed for producing a condition that human foresight could not prevent. Very often those in attendance fail to carry out the hygienic measures necessary, and the blame falls on the wrong person.

Protrusion of Bowel.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I have a yearling heifer with a lump about the size of an egg hanging from her body. The lump is close to the udder. What should I do to remove it?
Bruce Mines, Algoma. S. R.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH, ONT.

The treatment of this lump depends upon its nature. From its situation I should imagine that it is a protrusion of the bowel or its covering—peritoneum—from the navel. This can be determined by handling, generally. If it is the bowel or its covering, pressure will usually cause its partial or complete return, and it is not solid to the touch. The enlargement re-appears as soon as the pressure is removed. If this answers the description of the nature of the lump, it can be remedied by taking oil of vitriol, and applying a little of it every day to the centre of the lump below. Only apply it over a surface not exceeding the size of half-a-dollar, and as soon as the skin becomes hard to which it has been applied, withhold it, and wait for the piece to drop out, which it will do in a week or so. When the part heals up it will draw the skin together and efface the enlargement. A small piece of sponge tied on the end of a stick is a convenient thing to make the application with. If the lump is a hard one, being some kind of fibrous tumour, the knife may be required; or if its attachment to the belly is constricted, a string tied around it, or better, an elastic band, will cut off the circulation and cause it to drop off. If a string is used, it will require to be tightened every day or so.

Pigs Troubled with Files.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Will you be kind enough to let me know through the JOURNAL, or ask through the JOURNAL, what causes piles on pigs and what is the best treatment to give to them? I lost one last week. It was dropping nearly all blood. It is the first one I have lost. One of my neighbors lost forty last winter of the same disease. Mine are kept very dry and clean. It seems to be worse on young pigs than on old ones. It was a young pig, three weeks old, that I lost, and my neighbor's ran from two weeks to six months old. I would like to get some old breeder's opinion on what causes the disease, and what is the best treatment for it. I have been advised to give them castor oil and rub the skin with it. I have done so, without any effect.

The prospect at present is, that the crops will be the best we have had for many years.

D. LEMIEUX.

Oak Lake, Manitoba.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH, ONT.

Too rich food, of a binding character, with insufficient exercise, sometimes causes piles in pigs. In order to relieve the trouble the method of feeding, etc., should be changed to a more wholesome course. Sufficient raw linseed oil to act as a laxative may be given in the food. The discharge of blood from the bowels may also result either from constipation or dysentery.

Probably Rheumatism.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—We have a valuable Polled-Angus bull who has lost the use of his hind legs. First one of his knee joints began to swell. We blistered that, but the other knee soon began to swell in the same way, and now he has lost the use of them altogether, and cannot stand up. We lost a Shorthorn bull last spring in the same manner. We consulted a veterinary about him; he said he could do nothing more than blister, which we were doing. These bulls were fed oats, bran and hay, and were led out every day to water. They stood on a plank floor.

Souris, N.W.T.

L. S.

ANSWER BY F. C. GRENSIDE, V. S., GUELPH.

The disease in the hocks of this bull, which is the cause of his inability to stand, must be either one or other of two conditions, viz., tubercular deposit, or rheumatism. I incline to the opinion that it is the latter, from the circumstance of the other bull becoming similarly affected. Plank floors are perfectly wholesome, providing there is no accumulation of moisture underneath them, which there is very apt to be, if care is not taken, in either draining it off, or absorbing it with bedding.

If a floor is damp, bulls are liable to develop rheumatism from the fact that they stand in so much, and spend so much of their time recumbent.

Neither of the conditions mentioned are very amenable to treatment. A *post mortem* examination of the joints by a capable individual would solve the problem.

The Farm.

FROM OUR contemporaries across the ocean we learn that a department of agriculture is to be established for Great Britain. Formerly the belief that State aid should be doled out as little as possible there held sway, but recent happenings have made it apparent that their national industry should receive national recognition. Our American cousins are undoubtedly the most liberal in this respect, they acting on the well-grounded principle—that it is, not how little can be spent out of the national treasury and the country hold its agricultural status, but how much can be judiciously spent to stimulate further progress. We in America have few men of such liberality, ability and means as Sir John Bennet Lawes to endow any of our experimental stations with a gift of £100,000, and coupled with it the results of the life-work of such able personages as he and his corps of workers. Hence we look to our governments to do all in their power to advance this industry, which is beyond question with us the giant stem of our national tree. Open-handed liberality has rarely been wanting, but in some cases enactments have resulted from a slighting of this interest. It is in beneficial measures that the farmers of this country look for help and not from the salving of their cause with a government grant, and for this reason those politicians that desire to be looked upon as friends of agriculture require not only to advance, but also protect the cause they father.

As a catch crop few of our fodder plants equal that of millet, as it grows very quickly, maturing under the best conditions in about six weeks. It does not make much headway until the warm weather comes, when it springs into life and furnishes the stock with a luscious bite at a time when many of the other grasses are at a standstill, owing to the drought. It will do well on a well-drained piece of land, even if light in character, sown in quantities from one bushel to a bushel and a half (25 lbs. to the bushel), according to the soil. The latter should be in good heart and well harrowed, as the seeds are very small (average number, 83,000 per ounce), and require to be but lightly covered and rolled. Beal advocates thick sowing of this fodder, for he says that when forced to grow fine through crowding and grown on rich and suitable land, it makes from three to four or even five tons of fine-appearing fodder, sweet-smelling, and if cut early and properly cured, is relished by stock. It makes a moderately good hay if cut early, being almost equal chemically to fair meadow hay. It parts with its moisture slowly, however, and is somewhat difficult to cure. Horses do not relish it as much as the cows, and it is chiefly valuable to them for soiling, owing to its luxuriant

growth of leaves. If any of the other crops have failed to catch, a better move cannot be made than to seed with millet, and cut in August or September. It keeps the soil from being leached of its fertility, and besides growing a fodder a valuable auxiliary to that of corn. It is a shallow feeder, and is hard on the land, and hence should be well fed with farmyard manure.

Frauds on Farmers.

Recent investigations conducted by the Bureau of Industries under the guidance of the energetic secretary, Mr. Blue, have brought to light many interesting facts in connection with the above subject, and these are given in a bulletin setting forth the results of the inquiry. Of the extent of these frauds few can have any conception without consulting this compendium of exposures. Every conceivable merchantable product is made a basis for their roguery, nor are they content with "legal fiction" to achieve their ends, but perjure themselves to secure their prey. That these vampires should play such havoc under the eye of the law is remarkable, and the more so is it strange that men should be so easily victimized in the nineteenth century, when the world so quickly wags. As indicated in the bulletin, many of the victims are possessed with the idea that all that is necessary to prevent these frauds is to secure enactments of Parliament, forgetting, as Mr. Blue states, that "the legislature cannot think for a man, neither can it be come as common sense or good judgment to him." The mere fact that these frauds are committed principally on farmers indicate that a knowledge of business principles is a first requisite, and these must surely come through the educational factors of the day. With the greater prominence education is receiving at present, we may hopefully look forward to the time when fitting subjects for these designing rogues may be few and far between. Some of these schemers of embezzlement have such an appearance of good faith that even the most wary are sometimes made victims. It is the privilege of the press to give these all possible publicity, thereby materially protecting their readers. The remedial measures offered are summed up as follows:

1. That in every county agents be required to obtain a permit or license, to be issued at the discretion of the Inspector of Licenses, or some duly authorized individual, after proving that their business is of a *bona fide* character; and that such license shall be shown to any ratepayer on demand; failing to do this, that they may be summarily dealt with.

The suggestions and advice of correspondents is also condensed:

1. That farmers stick to their legitimate employment, and hasten slowly to accumulate wealth. The man who devotes his time to agencies must necessarily do so at the expense of his farm.
2. Only a dishonest man strives to get the advantage of his neighbor.
3. Deal with none but well-established firms and properly authorized agents.
4. Never sign anything for a stranger, and in all cases read carefully what you sign.
5. Read the newspapers and pay for them.
6. Remember it takes a rogue to catch a rogue.
7. Attend your Farmers' Institute if you are a member; if not, pay your dollar like a man and become one.

The many methods adopted are fully set forth, but our space does not permit us to even review them. This bulletin is worthy of the careful perusal of every farmer, and may be received through application to the secretary at Toronto.

Fungal Injurious to Farm Plants.

(Sixth Paper.)

POTATO ROT (PHYTOPHTHORA INFESTANS D. BY.)

This disease, which is thought to have come to us from South America, first brought itself into notice by its depredations during the years 1842-47, both in this country and Europe. Since that time it has never waned in the work of destruction, though its attacks are perhaps now less general. Botanists, after some investigation, proved it to be a fungus; and a distinguished member of a notorious family of that have been at work on other farm produce, as the onion, cabbage, lettuce and grape vine.

The disease usually appears the fore part of August, and is first noticeable to the naked eye as a downy spot on the under side of the potato leaf. If a section of the leaf is taken and placed under a microscope it has the appearance of that shown in Fig. 1.

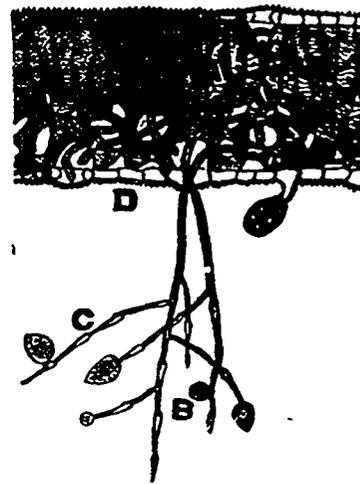


Fig. 1.
A. Section of Potato leaf greatly magnified.
B. Conidia on the stalk.
D. Lower side of leaf.

A spore alighting on the leaf, if the conditions are favorable, soon germinates and throws out a small tube, which is said to be corrosive or putrefactive, and hence it readily gains admittance through the skin of the leaf, stem, or even tuber, at any place independent of any natural openings. Obtaining an entrance, the thread-like tube (mycelium) soon permeates the tissue of the leaf, running between the cells composing the later, and throwing out small suckers (haustoria) to abstract the nutritive fluids from the cells, for its own nourishment. The mycelium grows rapidly if the temperature and humidity of the atmosphere is suitable, and soon it forces its way out through one of the natural openings (stomata) in the bottom of the leaf. At D in Fig. 1 a part of the mycelium is just about to protrude. As this mycelium grows, small oval bodies are produced on the ends, which soon take their place at the side of the thread as the latter increases in length. These minute oval spores are called conidia, and they are the chief means of scattering the disease. So small are they that they may become attached to the smallest insect and be carried from plant to plant. After some time they drop from the parent stalk, and being very light, they are easily carried by the slightest breeze from one potato patch to another. Dropping on a leaf, and supplied with plenty of moisture, each one divides into eight parts as a rule, as shown in figure 2, and each of these divisions become separate spores (zoospores), and are at first provided with little whip-like structures (as shown at (a), fig. 2), which aid the spore in moving around before it germinates. Each one of these spores are capable of reproducing

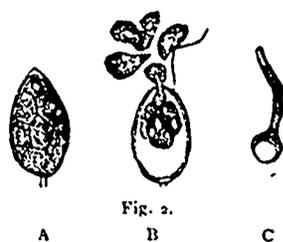


Fig. 2.
A. Conidia. B. Conidia developing into zoospores. C. Zoospore germinating.

the disease, but their sphere of action is more confined than that of the larger spores, from which they are produced. One of these spores (zoospores) germinating, appears in C fig. 2. The potato leaf, when the fungus has established itself and begins to produce spores, changes to a brown, and the leaf usually curls and, as the disease is rapidly transmitted to the stem, the latter soon becomes of a like color and eventually decays. Unless the tubers are well protected with soil they are almost sure to be infected also, before they are taken out of the ground.

In the tuber another class of spores is produced called winter or resting spores (oospores), which may in turn produce the same kind of spores as the summer ones divide into, namely zoospores. These winter spores are somewhat larger than the summer spores and of a darker hue. They are only set free when the affected tuber rots, and they are the chief agents in transmitting the disease from infected potatoes to sound ones that have been put in the same bin or pit.

There are many remedies put forward, but as in the case of such, the element of practicability has been slighted. No variety has yet proved proof against it, but there is a great difference in the degree to which they are subject to it, and no doubt in time a fungus-proof variety may be secured. There are preventative measures that should always be observed. The disease is more prevalent in damp soils, particularly clays, and a great deal less so in light sandy soils. The sprouting of the tubers in the bin has the effect of lessening the vitality or stored up force of the sets, and hence render the potato weaker and less able to resist the attacks of this fungus. The drying of the sets is recommended by some, so that the cut surface may heal over or become calloused before planting. Perfectly sound seed should be used, for a single diseased tuber containing the mycelium of the fungus, may destroy the whole crop. The use of fresh farm-yard manure is thought to be an aid to the increasing of this disease. As soon as the attack is noticed, indicated by the brown spots on the leaves and the curling of them, the botanist of the Washington Department of Agriculture recommends the application of the following solution: Sulphate of copper, 6 lbs.; lime, 4 lbs.; water, 22 gallons. Dissolve the copper in 16 gallons of water, in another vessel stir the lime in 6 gallons of water; when the latter mixture has cooled, pour it slowly into the copper solution, care being taken to mix the fluids thoroughly by constant stirring. This may be applied with small brooms or whisks of slender twigs, wetting the leaves thoroughly. Apply when there is no wind and the plants are wet with dew, and it should be done not later than the last part of July, and repeated again about the middle of August. In France this method has been used with good results. All diseased tops should be piled together and burnt, and not left on the potato fields in piles to rot after picking, as is the rule with some. The diseased tubers should be cooked and fed to the pigs. Cooking destroys the spores, as a temperature of 104° to 110° Fah. is destructive to them.

The spores would pass through the animal unaffected if fed raw. They should be treated like the stalks if not cooked and fed. In storing or pitting, only those tubers that are known to be unaffected should be selected, for the reason that one diseased tuber may prove the cause of the decaying of a whole bin. Dusting with air-sla'ed lime (1 bushel of lime to 25 of potatoes) will materially aid in preventing the pest from spreading. The potatoes should be thoroughly dry before being stored, and should be put in cellars or bins where the air may circulate freely.

Potato rot should not be confounded with potato scab, as the latter is not caused by a fungus, but is a condition brought about by physical causes. It is due to extreme humidity, and it has been noted that any marked change in the rapidity of growth, either an increase or decrease, tends to cause the scab, among potatoes. Thorough drainage of the soil, that it may be freed from all excessive moisture, and fully aerated, are preventative measures that are worthy of trial to lessen this condition, which through the disfiguring of the potatoes, materially lessens their value in the market.

Neglect of an Important Duty.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR—Under the above heading, Professor Hunt, of the Ont. Agrl. College, in the last issue of the JOURNAL, in a well written and timely article, dwells upon the neglect of duty on the part of County Councils, and farmers as well, in not availing themselves of the present offer to educate one young man from each county at the Guelph Agricultural College, free of the tuition fee. He tells us that in not more than one-half the counties of the Province is the privilege being taken advantage of.

The explanation given by Prof. Hunt as to the probable reason for this apathy is, I think, the true one. There is an instinctive shrinking on the part of our independent yeomanry from being regarded as pensioners on the public bounty; hence in many instances, no advantage is taken of the offer.

The remedy the Professor proposes is an excellent one. If the writing of a prize essay, as he suggests, were made a condition of the nomination, in every case, I believe that condition would be complied with, and by young men of the most desirable class; young men who would in all probability make their mark both as students of the college, and as representative farmers when they had left it. The writing of an essay might prove the means of drawing from obscurity not a few who would henceforth shine in the firmament of later usefulness.

The suggestion of the Professor to have the council require a report from the nominee at the end of each college year is also an admirable one, as it would tend to scatter light as to the nature of the work the college is doing. If it is doing its work satisfactorily it will prove an advantage to have it known, and if not, the sooner this is known to the whole country the better.

When the Professor informs us that during the session just closed, not more than forty to fifty students were furnished from Canadian homes, he tells us something that cannot but humiliate our farmers whenever we think of it. We have but one Agricultural College in the whole Dominion. Can it be possible that no more than fifty students are furnished by the four hundred thousand farm homes that dot this vast Dominion? Can it be that only one farmer out of eight thousand cares whether his son shall receive a superior education in the line of his future life work? Our apathy in this respect is not creditable, and augurs ill for the future of our farming.

Why, if we were alive to the interests of agriculture as we should be, the one college would not suffice for the education of our sons, we would want a half-a-dozen more.

It seems to me there is no good reason for withholding a first-class education from a farmer's son. Our calling certainly affords as wide a scope as any other for the development of intellect, and cultivated intellect is surely as necessary to large success in farming as in other lines of life.

Too many of us are inclined to divorce labor of the hands and culture of the intellect. In doing this we

try to separate what has been joined in indissoluble union, where best results are to be reached. If any person requires to be well educated it is surely a farmer whose business affords unlimited scope for the exercise of intellect every day of the year.

Will you, Mr. Editor, please inform us in your next issue as to the probable cost to a farmer's son for a year, and also the length of the college year? I know that \$20 is the tuition fee and that \$2.50 per week is charged for board. I am also informed that an amount not exceeding ten cents an hour is paid for work, but what I wish to know more particularly is about how much will be the probable outlay to a young man from the farm who is diligent and capable of doing work well?

YOUNG FARMER.

Owen Sound, 16th June, 1889.

Scientific Agricultural Teaching.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I have been a constant reader of the JOURNAL for several years, and have read with no little admiration from time to time the numerous and well written original articles that have all so distinguished your paper. The June number I consider one of the best that you have yet issued. I would particularly mention the articles on "Constitution not Developed by Exposure," "Breeds of Pigs," "The Victoria Swine," "Hay Making," "Canadian Cheese Making," and "Building and Filling a Silo," all of which are exceedingly well written articles, to say nothing of the paper on "Fungi Injurious to Farm Plants," and the well written letters on practical topics. Yet, notwithstanding the excellence of your articles generally, I trust you will bear with me when I venture to point out a weakness in some of those furnished your readers, a weakness for which the writers are, of course, a long way more responsible than the publishers. I refer to a class of articles written oftentimes by teachers of the science of agriculture, authors of a certain class of agricultural works and other agricultural literature, as the numerous bulletins that are being issued by the professors of agricultural colleges on both sides of the Atlantic. These bulletins may be faultless as regards style, and the matter they contain interesting in a way, but they are often greatly lacking in practical utility. Those who write them, when treating of the various phases of pest life that infest our farms and war upon our crops, too often stop short when the critical point is reached. They show much ability in describing the evil as regards its origin and the various stages of successive development, but fail too often to give a sure or even an available remedy.

Of this character is an otherwise excellently written article on "Cutworms" in the June issue, from the pen of Prof. Jas. Fletcher, of the Experimental Farm, Ottawa. The life history which he gives of the depredator and its habits is admirable, but when he tries to tell us how effectually to destroy these his strength fails and he becomes weak as another man. He gives no less than seven distinct remedies which we shall try and examine in detail. These remedies are as follows:

For surface cutworms he says the most efficient remedies are:

1. Keeping down all weeds in the late summer and autumn months, so as to deprive those species which hatch in the autumn of their food supply and winter shelter.
2. Late ploughing in autumn or winter so as to disturb them after they have gone into winter quarters. The value of this treatment lies chiefly in breaking the cell they have made as a protection from the cold of winter at a time of the year when they will be unable to make another.
3. Burning off all stubble and rubbish as late as possible in the spring, when many of the caterpillars and eggs of some species will be destroyed.
4. Placing some substance with an obnoxious odor around young plants when first set out, as fresh gas lime, sand or sawdust saturated with coal oil or carbolic acid.
5. Traps. Prof. Riley has found that they may be destroyed in large numbers by setting poisoned traps between the rows of crops to be protected. These are made as follows: Having secured a supply of some succulent plant as grass, clover or "lamb's quarters," tie them in loose bundles and sprinkle them heavily or dip them in Paris green and water. These are placed between the rows. Tying them in bundles has the

effect of keeping the traps green and fresh for a longer time. "Lambs quarters" is a favorite plant with many kinds of cutworms, and it will be noticed that where this plant grows it is much more attractive than most plants grown as crops.

From the habit cutworms have of cutting off the stem of an attacked plant, and remaining close to the root in the daytime, and from the fact that when this plant is injured it fades quickly and turns to a whitish tint, the presence of cutworms in these rows can be detected at a glance after a couple of hours of sunshine. They should then of course, be dug out and destroyed. After the season for the cutworms has passed by these strips can be run over with the cultivator and will give no further trouble.

6. Wrapping. Young tomatoes and cabbages may generally be protected in a large measure from the attacks of cutworms by simply wrapping a piece of paper around the stems at the time of planting, care being taken that it reaches above the ground for about an inch. This remedy usually answers well, but last spring not even paper saturated with a mixture of coal oil and linseed oil kept the hungry myriads from the young tomatoes and cabbages.

7. Ditching. It must be remembered that cutworms are essentially vagrants. They never stay long in any one place, but crawl long distances at night from place to place. To prevent cutworms from leaving a certain field, or to keep them out of another, ploughing a deep furrow has been found useful in confining their ravages.

I propose to look into these reasons one by one. The first is certainly of value. It will not only tend to destroy the food of the cutworm, but along with it all kinds of noxious weeds, and is an adjunct of all high class farming at the present time.

The second reason is limited in its application, as a farmer can only plough but a small portion of his land late in the season, and when he does this it will only partially accomplish what is claimed for it. The number of those nests broken open will be limited compared with those that are undisturbed.

The third remedy is inapplicable, as where farming is properly carried on, the major portion of the lands are ploughed in the autumn, and in the spring, stubble will not burn successfully, as Prof. Fletcher would know if he had ever tried the operation.

I admit the fourth remedy is applicable to the cultivation of small garden plots, but cannot prove helpful to the cultivator who is carrying on operations on a large scale owing to its cost, and the time required to apply it. The attacks of cut-worms in a field must needs be warded off in another way.

The fifth remedy is absolutely inapplicable on a large scale. Does it not demean the able intellects of the men who propose it—Professor Riley in originating it, and Professor Fletcher, in catching on to an idea which is inapplicable to extensive cultivation, and pernicious in its tendencies? To teach our farmers even by implication that the growth of a weed should be encouraged for the purpose of diverting the energies of an insect enemy, even though the diversion should end in its death, is certainly teaching that rests on an unsound basis, for though the one enemy should be destroyed, the other must afterwards be attacked and destroyed also, in which case the last enemy may be found a greater nuisance than the first. Is it not the duty of our teachers to point out how we may most effectively destroy all forms of insect and weed life directly, without resorting to the cumbersome, inapplicable, and illogical process of first encouraging the growth of the one that the other may thereby be destroyed? "Lambs Quarters" are not found in any quantity where farms are properly managed. To have them in sufficient quantities to divert the attention of cut-worms, they would require to be sown. But suppose this were not necessary, imagine a ten acre field with alternate strips of grain and lambs quarters. Grant that the lambs quarters fulfil their mission of luring the cut-worms from the grain strips to what proves to them a common burial ground, then imagine the cultivator going in and destroying the strips of lambs quarters, and these being resown with some other kind of crop that will of necessity mature very much later. Will Professor Riley or Professor Fletcher tell us how the first set of strips are to be reaped?

Fancy the patient cultivator setting his lambs quarters, Paris green saturated traps, with sufficient proximity, over a ten acre field of grain, and then removing them when the wasting carcasses of all the dead cut-worms had strewn the ground. Counting

the expenditure of time and money, would not the total loss of the entire crop be less than that entailed in converting the same into one vast graveyard of cutworms? I ask in addition, is either professor quite sure that the appetite of a cut-worm prefers poisoned lambs quarters to fresh, succulent barley and oat stems? I have grave doubts as to the truth of the alleged strange preference. Again, Professor Fletcher proposes to have the fields visited in the morning by the husbandman, who can take a righteous vengeance on the cut-worms burrowed at the root of the fresh cut grain stems. Did Professor Fletcher ever try an exhilarating walk of this kind in the morning, before breakfast, through a ten acre field of barley, before his task was completed, he would be inclined to conclude that a rather late hour had been reached for partaking of the first meal of the day. When the second morning had arrived for the journey, I fear he would agree with the practical readers of his bulletin, that his proposed remedy was either just a little visionary, or too intensely practical.

The sixth remedy he admits is only partially effective.

The seventh is in keeping with most of the others. Depict to yourself a farm disfigured with open ditches to trap cut-worms, on the sides of which in many places they can crawl, and go on their work of devastation unimpeded. The husbandman would require to possess his soul in patience who was necessitated to take his machinery to and fro over these inoperative cut-worm traps.

The Professor recommends placing strips of cotton batten around the trunks of trees to prevent the climbing cut-worms from crawling up. It was only yesterday that I saw them crawling over such strips.

It is high time that our teachers of agricultural science began to quit themselves like men. Quite a bit less of theory from them, and more of what is practical would meet with more of acceptance from our average farmers, and this important truth should be impressed upon those very necessary and well-meaning men. The cut-worm this year has been unusually severe in its attacks. With impunity the bold marauder has literally mowed down some of our grain fields. Who can give us a remedy that will enable us to gain the victory in this conflict which we must face if we are to succeed in our calling as farmers?

FARMER.

Orillia, 20th June, 1889.

The Dairy.

A short time ago a test of two classes of dairy cows was conducted at the New Hampshire Experimental Station—the best and the poorest. Each were charged with the food consumed and credited with the market value of the milk. It was found that from the worst cow the milk cost 4.26 cents per quart and from the best 1.59 cents per quart, a difference of 2.57 cents on each quart. Surely this strongly emphasizes the fact that there is a vast difference in individual cows as economical milk or butter machines, giving a chance for skill in selection that few other departments afford. Continual selection, grounded on returns, is the corner stone of the dairyman's success, and it should be vigorously employed.

To the progressive dairyman assiduously selecting and carefully mating his animals, pedigree is of the utmost importance, even more so to him than to the grower of beef. The records of the parents and the yields of his get are facts that bear great weight, owing to the fact that there is a dearth of indications of milk and butter tendencies in the bull, and those that are present are not as easily interpreted as those of the beofer. The color of the skin, its unctuousness, the placing of the teats, and as some will have it, the escutcheon, may be accepted as signs, though but secondary in value to the records of ancestors or get. Vigor, with masculinity free of coarseness, is a guarantee for the repetition of individual qualities and a pedigree of the right breeding is a warranty for the reproduction of the ancestral.

SALTING the butter with brine is now extensively practiced by many of our best butter-makers. The brine is made as strong as possible, as much salt being dissolved in cold spring water as it will hold, care being taken not to add too much, so that none shall remain undissolved. After the butter is washed thoroughly after coming in the granular condition, the brine is then introduced, and if it is desired to but mildly salt the butter, it is given but a few turns. If the market calls for a product that has a slightly salt flavor, it should be allowed to stand for about an hour in the brine in a granular condition. Of course the worth of this system depends almost solely on the demands of the market that is being supplied. If fresh butter but slightly salt is called for, no better practice could be adopted, as it does away with the labor of a second working that the dry salting method demands to prevent streakiness. If, however, a long keeping quality is needed, then it cannot be said that brine-salting will answer, as it is a difficult matter to give the butter sufficient saltness, which can be easily done by incorporating dry salt with it in the granular condition.

It is a customary practice in many farm dairies to mix the sour cream and sweet cream together just before churning. Such a method is not the best, as it results in much of the fat that should be in the butter going into the buttermilk. That sour cream yields more butter than perfectly sweet cream, has been proven many times by experimenters, and it has also been demonstrated that sweet cream is in no way improved by mixing it shortly before churning with sour, as they will not churn alike, and hence much of the butter is lost. The Wisconsin Experimental Station, conducted a number of experiments in this direction last year, and the average results were that when the cream was churned sour, 92.2 per cent. of the fat recovered in the butter; when mixed, only 86.31 per cent. was obtained, though all the samples were treated alike in every respect. Their conclusions were that sweet cream is in no way improved by mixing it with sour cream just before churning, as the same loss is incurred that would be if the creams were churned separately. To be churned together they should be mixed together, and stirred well, at least twelve hours beforehand, and kept at a temperature between 60° and 65° Fah., varying with the degree of acidity of the old cream. If the latter is very sour the temperature should approach to 60°, and if not so, then it should be higher. Souring is hurried forward by a high temperature up to a certain limit, and thoroughly ripened cream requires to be churned at a lower temperature than that, only moderately so; and hence the churning temperature should be gauged according to the acidity of the cream, below or at 60° Fah., when well advanced in acidity, and above, when comparatively sweet.

Grain on Pasture.

With good cows that have been carefully selected for the work in hand, there is no doubt but that it will pay the dairyman to supplement the pasture with a mess of either bran, pea meal, shorts, or some other rich food each morning and evening. It should be the dairyman's object to feed his cows as much as they can put to good use. The matter of economy does not imply the stinting of the food, but it requires liberality where such pays handsome returns. Good pasture grass is beyond question one of the most valuable of dairy foods, being very digestible, palatable and nutritive.

To what degree its succulency enhances the value of any food is not definitely known, but it is a fact established by practical observation as well as scientific data, that a food in a succulent state has a beneficial effect in keeping the digestive machinery in good order. The water is imprisoned in the tissues of the plant and mixed with the solid nutritive matter in such a manner as to be far beyond the power of the feeder or chemist to imitate. The composition of the digestible portion of pasture grass is about as follows: Water 80 per cent.; albuminoids 2.5; carbo-hydrates 9.9, and fat 4. The most striking characteristic of grass as a food is its large quantity of water, while it is but moderately rich in albuminoids.

It is the dictum of experience and experiment that a cow, to give a copious supply of good milk, must be fed food rich in albuminoids, for from these constituents are derived the casein and fat of the milk. Very little if any of the fat of the food finds its way into the milk, as the fat of the latter is almost solely obtained from the albuminoids of the food fed. The milk sugar is mainly derived from the carbo-hydrates of the food, but a change is undergone, as the sugar that is found in milk is peculiar to it alone.

While food may have no effect in decreasing or increasing a single constituent of the milk, it has a marked effect in augmenting the total amount of solids. The amount of water contained in pasture grass makes it a splendid food to be combined with any other product that is richer, as it has a cooling and lubricating effect on the system, keeping every thing in good running order, and hence the condition of the cow's digestive apparatus is such as to make the most of the grain ration. Of course it solely depends on the individual cow whether she possesses the power to utilise such food, but cows that cannot should be foreign to the herd of any pretending dairyman. Of the foods that could be used with profit we mention bran, pea meal, cornmeal, middlings or shorts, or chopped oats, if these can be obtained at the current market prices, namely: pea meal, \$1.20 per hundred; bran, 80c.; cornmeal, \$1.35, and shorts, \$1. A correspondent of that excellent dairy paper, *Hoard's Dairyman*, has secured an annual return of 327 lbs. of butter per head with a herd of fifteen cows, from feeding a mixture of bran, oats, and cornmeal mixed in the proportion of six quarts bran, one quart oats, and one quart cornmeal. Each cow that is fresh or nearly so he gave four quarts of this feed night and morning. Cows not milking much are not fed any grain, and those between the two, fed accordingly. Bran seems to be a food that is a general favorite among dairy-men, and it can without doubt be fed with profit. A four quart mess fed night and morning does not take long to show its effect on the milk yield of most cows, and even larger quantities may be given good milkers with much profit.

The composition of the digestible portions of bran is as follows: Albuminoids, 10 per cent.; carbo-hydrates, 48; fat, 3.1, and water, 11.4. Pea meal is one of the richest foods that could be fed. Its digestible substance is made up of: Albuminoids, 20.9; fat, 2.8; carbo-hydrates, 55.4, and water, 11.4. This food is not only rich in protein, which is an important essential of a milk food, but it is credited with having a beneficial influence on the digestion of other foods. It should not be fed in quantities over two quarts morning and evening, as it is a very strong food. Shorts or middlings have about the same chemical composition as bran, being if anything slightly richer and finer in quality.

All ground food should be fed dry. The usual practice is to feed it wet, but better returns follow the

opposite course. When given dry the cow masticates it thoroughly, and as a consequence it is better digested and assimilated by the system, and for these reasons give better returns.

The Principles and Methods of Keeping Summer Butter.

The make of the month of June and forepart of July has a fragrance and color that proclaims it the best of the year, which fact, with the low prices current at this season, causes it to be advisable, under some conditions, to withhold the summer butter until later on. The principles involved and the methods pursued in packing and keeping butter are matters of moment to those following this branch of our farming which has proved itself to be, when careful attention is given to it, to be paying to the farmer and enriching to the farm.

As to the principles that aid in the securing of a good keeping quality of butter, the one that comes first in the order of sequence is that of ripening of the cream. Ripening is a change in the cream brought about by the slight development of acidity through the agency of bacteria. It is the milk-sugar that undergoes a change, and the acidity developed has the effect of permitting of a better separation of the fat from the other constituents of the cream, a fact which is of the greatest importance, for the freer the butter can be made of the other substances—milk-sugar and casein—the better it will keep. The next tenet is to stop the churn as soon as the butter gathers in little pellets the size of an ordinary wheat grain; if smaller than this the strainer will not hold the butter when the buttermilk is being run off. Water is then introduced into the churn and the latter is given a few turns. This is run out through the strainer and fresh water run in. This continues until the water comes out as clear as it goes in. Only the cleanest and purest spring or well water should be used, and that at a low temperature, so as to harden the pellets and make future handling easier. This thorough washing rids the butter fat of a great deal of casein, while the ripening has lessened the milk-sugar, and thus the two most easily decomposable constituents of the cream are freed from the butter.

The methods of keeping are various, and few are without commendable features. The most common method is that of packing in tubs, salted usually at the rate of $\frac{1}{2}$ oz. to the pound of butter. The tin-lined tub saves a great deal of labor, and answers the purpose better than the wooden. If the latter is used it should be well scalded and allowed to soak over night in a strong brine, so that the woody taste may not be imparted to the butter. It should be closely packed with the butter up to within an inch or so of the top. Over this smoothly spread dampened muslin that should be well tucked in around the edges. Then on top of this a layer of damp salt is spread, coming even with the top of the tub, and the whole tightly sealed with a well-fitting cover and tin straps. Paraffine paper is preferred by many as an inside cover, as it is claimed the salt may check after drying, and expose the butter.

Another plan of keeping summer butter that commends itself, and which is credited to the Danish butter-makers, is to pickle the butter in a pork barrel in its granular condition with a strong brine. D. H. Burrell & Co., of Little Falls, N. Y., who are extensive dealers in dairy utensils, and well-informed in dairy matters, give a description of this method which they have practiced, in their large catalogue. After bringing the butter in the granular condition, it is washed in brine. The oak cask is previously scalded

with brine, and thoroughly cleansed, and in the bottom of the cask is placed a layer of salt with a little salt petre in it; then the butter is put in, filling the cask to the top, then a cloth, and over that a paiful of salt. The head of the barrel is then securely fastened, driving the hoops down tight. The brine is then poured through a small hole in the head until the cask is filled. It is then stored away in a cool place and watched for a couple of weeks, pouring in brine so as to keep it full, but when it has taken up all the brine it will, a plug is driven in the hole and the cask set away until such time it is desired to sell the butter, when the cask is opened and enough butter is taken out to churn in the buttermilk that results from the churning of the cream on that day, and thus the flavor is freshened. The butter is then taken from the churn, worked, salted and packed as usual, and it is stated that seldom can the best buyer tell the butter from that freshly made. The tubs it is packed in are fresh and bright, and there is nothing to indicate that it is old; and in fact it is fresh, because each of these butter granules has been surrounded by a strong brine, thus excluding the air and retaining the aroma.

A New Method to Preserve and Disinfect Milk.

A new plan of accomplishing the above desired object has lately been wrought out by the Norwegians. The process consists in completely sterilizing the milk, and to do this it is subjected to alternations of a high and low temperature. The agents that are the cause of milk decomposing or turning sour are minute plant organisms, invisible to the eye, but present in nearly all atmospheres. These bacteria, as they are called, increase by means of germs. The germs perform the same work for the fungus as seeds do for ordinary plants. It has been found comparatively easy to get rid of the organisms, as they are easily killed by heat, but it is a much more difficult matter to prevent the germs from growing, as they are able to stand a high temperature; in fact, they require a certain amount of heat to germinate, and advantage is taken of the truth, that after they germinate they are more easily killed. If the temperature of the milk is raised high enough to kill the mature organisms and then lowered to such a temperature that is known to be most suitable for the germs to grow, and then again rapidly heated, it is obvious that the milk will become completely sterilized. The principle is the same as that employed in the ridding of the soil of many noxious weeds, such as mustard, for instance. The best plan in such cases is to encourage the dormant seed to grow, and when up a few inches, when the plant is immature and possessed of little vitality, it is ploughed under. The same idea is carried into this process of sterilising the milk. The actual process we learn from the *Mark Lane Express* is as follows: Directly after the milk is taken from the cow it is cooled to about 50° or 60° Fah. At this temperature it is put in tin cans and tightly sealed, so as to exclude all air, thus preventing the entrance of any germs. It is then heated up to about 160°, and kept at this for nearly two hours, and then it is allowed to cool down to about 100° Fah. After some time has elapsed it is again quickly heated to the former temperature of 160° Fah. This alternate heating and cooling is carried on several times, when finally it is heated to 212° Fah., the temperature of boiling water. After this it is allowed to cool down to normal temperature, and is found to be completely free from all organisms and germs. Milk that has been preserved in this way keeps easily for a year, and in no way, it is claimed, does it differ

from milk that might have been taken fresh from the cow and slightly boiled. The milk keeps sweet, and it is stated, makes a refreshing drink. The chief advantage claimed for it, however, is due to the fact that it is free from the germs of all infectious diseases, and hence is of special value for sickly persons. Investigation shows that in such diseases milk may act as a medium for the spreading of the trouble, but this method of treatment prevents this, and on this account it is thought it may be of great practical use for the supplying of milk to hospitals and other like institutions.

Separating Cream from Milk.

Cream is formed by the collection in a mass of the many minute globules of fat that are always present in whole milk. The separation of these from the other substances contained in the milk depends largely on the difference in specific gravity of the serum or fluid portion and the fat globules, the specific gravity of the fat being .912 and that of skim milk about 1.036. Another condition on which the separation depends has lately been advanced by Dr. Babcock, namely, that the viscosity of the milk serum has much to do in preventing the fat globules from rising rapidly, disclaiming the belief accepted by many dairymen that a low temperature hastens the rising of the cream by increasing the difference in specific gravity between the fat and fluid portion, and stating that a rapid separation results from cold setting, owing to the fact that the cold retards the coagulation of the fibrin in the milk which would enclose in its meshes the fat globules. The methods of separating cream from milk are divisible into two main classes—the natural, represented by the shallow pans and deep setting, and the artificial, including centrifugal separating machines.

THE SHALLOW PAN.

This system is the one most in vogue in the majority of our farm dairies, and while it possesses a few advantages, it has many disadvantages.

The pans found most useful for this purpose are made of tin and have been pressed, and, hence, without seams to give trouble in cleaning or by leaking. The objections that may be urged against these are that they require much handling and cleaning, and for this reason take up a great deal of time and also room.

As a large surface of the milk is exposed to the atmosphere there is a great danger of it absorbing odors, and further, the milk is almost sure to turn sour, especially in the hot summer days, as it has to stand in the majority of cases about thirty-six hours. Many are still in use, however, owing to their simplicity and cheapness, and some even claim that they can make a better quality of butter from cream so raised, which, however, is not the case if the cream separated by the other methods is ripened thoroughly before churning. There is a difficulty in regulating the temperature when the shallow pans are used, and hence a uniformity of product is not very often obtained. As no ice is used with this method there is a saving in that respect. The cream raised by shallow pan is possessed of more body than that from the other methods as it contains less milk, and, hence, takes less to make a pound of butter, which, however, is practically of very little consequence.

To get the best results from this method the milk should be set as soon strained and disturbed as little as possible. An airy room is a necessary requisite, with not only a free circulation of air, but the latter must be pure and without any odors, and to get this is one of the difficulties of the method. Dry air cakes

the upper layer of cream, and this will cause flakes in the butter. The pans should be set on slatted racks hung from the ceiling to within five feet of the floor and should not be set on the floor, as in such position the milk is more apt to become tainted and catch dust, etc. The best temperature ranges from not over 60° Fahr. in summer and not below 45° Fahr. in winter.

DEEP SETTING.

This method has been introduced from Sweden, and is known in that country as the Swartz system. There are many different styles of cans in the market and are all possessed of more or less of some individual excellence. They are, however, all closely allied in principle, and the method implies the use of cold water, either made so from the use of ice or derived from springs. The Cooley cans are the only ones that are completely submerged, the others being only partly so. Many cabinet creamers have much to commend them, but when a cool, freely flowing spring may be utilized, a box or tank may be easily constructed with an inlet and outlet pipe that will give a good circulation of cold water around the cans. The customary size of the cans is about twenty inches deep and eight inches across. Such a can, almost full of milk, will, with the use of ice, throw up its cream between the milkings or twelve hours, which means not only a great economy of time, but also of space and expense, as the one set of cans is sufficient. The trouble of securing a pure atmosphere and free circulation of air is largely done away with, as the milk is surrounded with water, which not only protects it from odors, but as long as it is warmer than the water the odors that may perchance have got into the milk will be absorbed by the water. The skim milk is sweet, and does not lose any of its feeding value through souring as that of the shallow pan does.

To secure the best results from the deep setting method it is best to set the milk as quickly as possible after it has been strained. Prof. Henry found by careful experiments that by letting the milk stand for less than half an hour there was a loss of from four to more than five per cent. of the butter made. The temperature of the water in which the cans are set should approach as nearly to 40° Fahr. as possible. The above mentioned experimenter found that when the quantity of ice is small and the weather warm so that the water runs up to 45° Fahr., the loss of butter may run from 2.7 to 5.3 per cent. Setting at 50° Fahr. as compared with 45° Fahr., he found to show a loss of from 3.8 to 10 per cent., and 55° shows that the range of loss is from 15.6 to 30 per cent. over that set at 45°. A very imperfect creaming results when a milk can is set in a tank of standing water without ice. It should be running or ice should be used to get the best returns.

CENTRIFUGAL SEPARATORS.

Among the improved dairy utensils of the last few years the separators richly deserve to be classed. All the different styles, the Laval, Danish, etc., all perform their work through the action of the difference in the specific gravity of the cream and the skim milk. The milk is introduced into a steel bowl which revolves in the large machines run by steam power at about 7000 revolutions per minute, which causes the heavier portions of the milk to be thrown to the outside and the lighter or the cream to gather in the centre, when it only requires the force of the in-coming milk to cause the cream to pass out one tube and the skim milk out of another. The largest ones, with a skimming capacity of from 500 to 1500 lbs. per hour, are only of use in factories and very large dairies. Small ones,

however, that may be run by hand or horse power are made to meet the wants of small dairies. Some of these have a speed of 6,500 revolutions per minute, which it is claimed will skim from 250 to 300 lbs. per hour. When the milking herd numbers about fifteen good dairy cows, there is no doubt that a separator may be used with profit. From 5 to 15 per cent. more butter will usually be obtained from its use, owing to the more complete separation of cream.

At the Munster Dairy School, by way of experiment, milk was set in pans for about thirty-six hours and skimmed and the remaining skim milk passed through a separator. The results showed an average return during three months of 2 7/8 lbs. of butter from every one hundred quarts of such milk. Prof. Long, a careful dairy writer, estimates the profit from more thorough separation to be, in the case of a dairy supported by ten dairy cows, in the neighborhood of \$300 per year. This would soon pay for the machine, the price running from about \$150 for the small hand ones to \$400 or \$500 for the larger. The advantages of the separator may be briefly summed up as follows: Quickness and thoroughness of separation, removal of dirt, etc., from cream and milk, and saving of space. The skim being warm and sweet, it is in best condition for feeding calves or pigs, and what is of importance, there is a great saving of time and utensils. They are easily cleaned, and are now made so strong that no danger from any breakage is likely to occur.

Poultry.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

Seasonable Notes.

BY W. B. COCKBURN, GREENHOUSE FARM, ABERFOYLE, ONT.

Ducks, after they are six or eight weeks old, should have as much liberty as possible, more especially the old birds, as they are not partial to confinement like chickens. Try and keep them separate from the hens, for if they are in the same run or house they become quarrelsome.

When the chickens are afflicted with diarrhoea one of the best remedies is boiled milk thickened with cornmeal while boiling. Let it remain until nearly cold, but should be fed while warm. Add some red pepper. If possible feed part soft feed; sometimes the hens will reject whole grain, and when this is the case the only remedy is a variety of food.

Keep weeding out all but the most promising chicks. Don't on any account keep birds which have nothing but beauty to recommend them, unless you are keeping them for ornamental purposes only. Be sure and have the hens that are bringing out a brood, free from vermin. We have known parties to lose a clutch of ducklings in a few days by this neglect. Don't get discouraged over a few mishaps, but set out with a will to overcome these misfortunes and remedy them. Small beginnings are great endings with all things, so certainly it must be with this. Remember, bought wit is the best of wit.

Guinea hens keep away hawks. They are noisy birds, worse than any other farm fowl, yet they give warning to other fowls.

Gapes.

Of all the ills that chickens are subject to this is perhaps the most serious. The symptoms of the attack are well known to the most of our readers. The gaping is caused by a small worm lodging in the windpipe, and unless soon removed, suffocation as a rule follows.

Accounting for the worms getting there gives rise to

many opinions, some averring that they come from the hen, basing this on the fact that chickens hatched by incubators are very seldom if ever attacked. Others hold that they are derivable from the flies, bugs, etc., that the chickens eat, as these may contain the eggs of other insects which spring into life when the stomach is reached, and then work their way up the windpipe.

A correspondent in our English namesake gives his views and methods of treatment in the following:

Many chickens affected with gapes will get better without any gape cure, and I believe those cured by most of the advertised remedies were chickens which would not have died of the disease. After years of trying to cure I have come to the conclusion that some remedies are useless. I have tried to touch the gape worms with both turpentine and patent gape cure, which gave very little relief, and never in any case cured, and if touching them with turpentine fails, I don't think anything will succeed. Why turpentine fails is plain. The worms when dead are almost as large as when alive, if not altogether as large, and if the chick cannot cough them up it does not matter whether they are dead or not. Then there are always gape worm eggs in the windpipe which turpentine does not seem to affect, for they hatch out in due course.

It may be asked how can the worms be touched by turpentine? Very easily, a feather stripped almost to the end and dipped in turpentine can be pressed down, but better still, a fine stalk of grass with a tube in the centre can be filled and put down, which will convey a sufficient quantity to kill them, but it seems to have no effect. I may state my own method which I discovered some years ago, and which I never knew to fail to effect a perfect cure inside of ten minutes. Take two, strong, straight hairs plucked from a horse's tail, or two fine pieces of trout gut about eight inches long, draw a knot over one end firmly, clip off the end closely below the knot. Take the chick in your left hand, open its mouth and insert the knotted end into the windpipe which will be seen at the lower end of the tongue opening and closing as the bird breathes, push them down, free from any twist, as far as they will go, when they stop, twist them between the front finger and thumb and draw them out. In the case of strong chickens I use gut, and never have to insert it more than four times in the windpipe until I get up all the worms. Sometimes I get up a dozen the first trial, and generally six or eight are secured after three or four efforts. When these are got rid of, the chick is put under the hen and left quiet till feeding time, when it will be found as thrifty and well as if there were no such disease as gapes. When it attacks young chickens I prefer horse hairs, as the gut is rather large and strong. A neighbor last year brought a brood of nine chickens to me to show her how to cure them. I extracted all the worms in fifteen minutes, and though they were very ill, some hardly able to eat, and dropping wings, every one of them ate greedily when they went home—about twenty minutes afterwards—and when they next came out to be fed showed no signs of either gapes or weakness arising therefrom. This is a remedy so simple and so certain that I strongly recommend it to every one who is troubled with this scourge. For years I hatched three or four times as many chickens as I required on account of deaths from gapes. Every chicken would take it when three or four days out of doors, and out of a full brood of thirteen I seldom reared more than four. Since I discovered this remedy I never lose a bird at all from it, and there is not the slightest danger in it. The bulk of two hairs is so slight that they give little trouble in the windpipe by way of stopping the passage. In fact, one gape worm would do more harm than the hairs; then the remedy is so quick that it is all over in a minute, so that the bird suffers no abuse.

The Chemistry of the Egg Shell.

The shell proper of an egg is made up mostly of earthy materials. The proportions vary according to the food of the bird, but go to 97% is carbonate of lime. The remainder is composed of from two to five per cent. of animal matter, and from one to five per cent. of phosphate of lime and magnesia.

Vauquelin shut up a hen for ten days, and fed her exclusively upon oats, of which she consumed 7,474

grains in weight. During this time four eggs were laid, the shells of which weighed 409 grains; of this amount 276 grains were carbonate of lime, 17½ grains of phosphate of lime and 10 grains of gluten. But there is only a little carbonate of lime in oats, and whence could this 409 grains of the rocky material have been derived? The answer to the question opens up some of the most curious and wonderful facts connected with animal chemistry. The body of a bird, like that of a man, is but a piece of chemical apparatus, made capable of transforming hard and fixed substances into others of a very unlike nature. In oats there is contained phosphate of lime, with an abundance of silica, and the stomach and assimilating organs of the bird are made capable of decomposing the lime salt forming with the silica a silicate of lime. This new body is itself made to undergo decomposition, and the base is combined with the carbonic acid forming carbonate of lime. The carbonic acid is probably derived from the atmosphere, or more directly perhaps from the blood. These chemical changes among hard inorganic bodies are certainly wonderful when we reflect that they are brought about in the delicate organs of a comparatively feeble bird, under the influence of animal heat and the vital forces.—*Popular Science.*

The Apiary.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

Care about Winter Stores and Other Matters.

BY R. F. HOLTERMANN, ROMNEY, ONT.

July brings us to the days when we expect our surplus, and before the last days have come many of us have passed the season when we can expect surplus to any extent. Those who have a large number of colonies are more apt to study just at what time a honey flow may be expected. I say may be expected, because we may not have it; and yet on the other hand, if there is no linden in a locality, or no clover, or no buckwheat, we are quite safe to intimate no flow need be expected from such a source. There is no surer way than that winter losses are often occasioned by bad summer management, and to winter successfully, preparation for winter must commence in summer. During the past winter the greater part of the loss of bees has been occasioned through want of stores; and this is true to a certain extent every winter. What then shall the remedy be? Drawing attention to a system of management which shall avoid the danger referred to. Another cause of winter loss is stores of inferior quality gathered late, the bees having taken from them the best stores, and the inferior being left to the bees. Again, the feeding of colonies with sugar syrup causes loss through robbing. Now all this can generally be avoided by having a few extra combs, say two to each colony. Allow the bees to fill these well, drawing out the combs so as to contain more honey than usual. When these combs are well filled, take them out of the hive and put them into a warm, dry place ready for use when preparing your bees for winter. Some you may find require no honey, others more than two; you can put them where required, and if not required, you can extract them. If you cannot get the extra combs, leave the sealed combs in the hive in the upper story, or put them as dummies in the outer sides of the brood chamber, but not before the honey has been capped in the combs you are about to place there.

DUMMIES.

As some may not understand what is meant by the term dummies, I will briefly explain what I understand by the term. They are boards, or any substance of the size of frames, placed in the brood-chamber to contract it and prevent the queen rearing

brood extensively at a time when young bees would be too late to take part in gathering a honey flow. The dummies are generally made of wood, but a comb of capped honey makes the very best dummy, as the bees prefer passing over the latter sooner than over the boards. I say, capped honey, because if not capped, the bees are very liable to carry the honey above, making room for the brood below, thus defeating one of the objects of having the comb.

FERTILE WORKERS.

Very recently a leading bee journal was picked up in which a beginner asks why there is more than one egg in a cell. The reply given is, that probably the queen's capacity for egg-lay is greater than the capacity of the workers to care for the brood, hence the queen deposits more than one egg in a cell. I have probably noticed more than fifty times colonies upon combs, the cells of which had more than one egg in a cell, and forty-five times out of fifty found that no queen at all existed, but that the queen had been lost and the bees had not succeeded in raising a young queen, and some of the workers had become fertile, and these will nearly always lay in the method described. It is needless to say such an egg will produce only drones, and the colony soon dwindles away. A young queen will sometimes lay more than one egg in a cell, but she soon gives up that plan. Therefore, if you notice cells with more than one egg in them, be on your guard.

ANTS ABOUT HIVES.

These little insects often become a terrible pest about an apiary. They will locate themselves above the quilt of a colony, where the warmth from the bees below will help to hatch their eggs, and they can get an abundant supply of sweets whenever desired. As most of us will object to this kind of farming, although in the distant future it may become a profitable undertaking, the insects will be considered a nuisance. Shake them off the quilt and scatter them, and they, like the honey bee, appear to have no difficulty in finding their location; and any one may well be puzzled to tell what to do.

I just lift up the quilt by its four corners, carry the ants upon the quilt quickly to a fire, and shake eggs, queen ants, drone ants, soldier ants and worker ants, into the fire. This done three or four times thins the ants in an apiary out pretty well.

A. E. Manum, in *Gleanings*, recommends setting the hive upon tar paper. This, no doubt, would prove effectual, but as the bees are very sensitive, probably as sensitive to odor as the ants, the bees might be more inclined to swarm away from the hive and be irritated by the smell. Again, in times of robbing, it might prevent the ready detection of robber bees. However, the tar paper idea may prove valuable in other ways, keeping ants out of sugar barrels and such like; but remember, I have never tried it, although I have found it very effectual in keeping mice out of clamps by lining the clamp with tar-paper. They do not care about gnawing through the material.

BEE POISON.

The *American Bee Journal*, in its issue of June 8th, asks a question in reference to the poison from the sting of bees upon the human system. The majority feel confident that the effect of the poison is only temporary, and a few are under the impression that some peculiarities of the system may leave bad results upon the system, and in very rare instances even death. It would appear from observation that this is correct. A healthy system does not appear to suffer for any time from the sting of a bee.

Horticultural.

FOR currant worms hellebore is perhaps the most effectual remedy. This is a powder made of the roots of the white hellebore (*veratrum album*). It is poisonous, and produces death both by coming in contact with the worms and by being eaten. It may be easily applied wet by stirring it in water in the proportion of one ounce to three or four gallons.

THE cabbage-worm at this season is usually in the midst of its revels. Pyrethrum is a sure and efficient agent in lessening their depredations. Persian insect powder, which consists largely of pyrethrum and Hammond's "slung shot" are also effective remedies. The pyrethrum powder should be mixed with flour in the proportion of about one to five. If old, the powder is apt to lose its strength, and hence should in such a case be applied in a narrower proportion. It produces its effect by coming in contact with the worm and not by the latter eating it, so that the endeavor should be to sprinkle it on the worm directly.

Utilize Waste Places by Planting Trees.

While many grasp the fact that tree planting is worthy of all possible encouragement, they loudly demur at the giving up of good land to the raising of a crop that it takes many years to mature and harvest. Though we feel that there is a field for profit even by giving up arable land to the culture of this crop under good management, yet for the present we urge nothing more than the planting of worthy trees in waste places or odd corners. We cannot picture in our minds a being so bereft of patriotic fervor or so unbenevolent as not to feel that in this way he could repay the liberality of past generations to some extent by increasing the happiness of those yet to come. There are a number of out of the way places that may be utilized and made to nurture, not only valuable, but beautiful trees. Those places may be enumerated as hills, ravines, morasses and odd corners.

Hills.—How often we see a sun-burnt and wind-dried hill covered with sparse vegetation that would not repay the labor of breaking it up annually, and hence has been seeded down to grass but does not give a respectable bite to a hungry sheep. How much more profitable, and what an improvement it would produce on the landscape, if on such places a clump of suitable trees would compassionately hide this hideous scar on nature's face. As to the advantages of such a policy, we urge that it would greatly enhance the value of the land if planted to valuable timber, and that it would act as a reservoir after the trees attained a growth to cover the ground with their shade, and also contribute to the fertility and moisture-holding power of the soil by the covering of humus or decayed vegetable matter that it would annually surrender. The snows would not melt and rush with great power down the declivity, but would be gradually melted and diffused through the soil to freshen the thirsty crops. Decayed vegetable matter is one of the greatest absorbents of water that we have, and hence its beneficial action in gradually dealing it out. It would serve to scatter the force of biting blasts of fall and winter, and temper and cool the withering winds of midsummer, truly acting, as it has been put, as nature's fly wheel.

The varieties that may be commended for such altitudes would include the broad and stout-limbed butternut, the black oak, with its deep green, glistening foliage, and the many other varieties of oak; the hard maple with its autumnal tints and economic

worth, the tough-fibred hickory, the light and sombre birches, the stout beeches, and a few others that are known to thrive on such places. The best plan would be to grow these varieties in the nursery for a few years, or if preferable, secure them from a nurseryman, and after giving as good a cultivation of the permanent situation as possible, set them out when about five feet high.

Ravines.—These disfigurements may be easily hid and turned to profitable account by judicious planting. Though there is no doubt but that trees, by holding the moisture, would tend to produce land slides, yet if deep-rooted varieties are used, this may be surmounted. The cedar may be grown in good form for fence posts or rails under such conditions, if the soil is at all damp. The broad-leaved basswood, the wood of which is of great value for carriage-makers, would flourish. The hard maple would also grow in such places, while the smaller mountain maple and the Juneberry would be in their best conditions. The hazel-nut would here flourish, and also the hemlock that has such a high value at present with us, for not only its wood for railroad ties and building lumber, but its bark for tanning purposes; and further, it possesses more beauty than prejudiced eyes usually see in it. The ironwood or hornbeam, though perhaps at its best on the higher plane, would grow to good advantage, and there are few woods of tougher grain than it.

Morasses.—Such places as these frequently observable along the banks of rivers or small creeks that the floods of spring overflow, or such as are beyond bringing into cultivation, could be turned to good advantage. The places unplanted are but hot-houses for the production of malarial fevers, diphtheria, and many diseases due to germs; but planted, the trees act as pumping mediums between the soggy ground and the atmosphere, keeping the moisture moving up through their trunks and out at their leaves, and not allowing it to remain stagnant and produce disease. Some of our prettiest, if not most valuable trees, will flourish with such surroundings. One of the most beautiful trees we have and also one of the most worth for the various wood-using industries, is the American elm, and also its larger and stouter-growing relative, the rock elm, and its other relation, the slippery or red elm. The larch, so valuable for railroad ties and building purposes, will here grow rapidly, as also the spruces. The willow perhaps surpasses them all in rapidity of growth, and it is especially valuable for holding up embankments that are liable to wash with the rains. The soft maple, one of the most beautiful and healthy-growing trees that are native with us, prefers moist low ground, and would here make a strong growth, as would also our black and white ash.

To hide old buildings or even new ones with effect, the evergreens, the spruces and balsams, find supporters. The Norway spruce is perhaps the best wind-break and screen that we can grow, though our own white variety is but little behind it, the fault of the latter being the early death of the bottom branches. The balsams are more brittle, as they come to good size and are very apt to succumb to a wind storm just as their services begin to be of value.

Bagging Grapes.

This scheme, though it has many advocates, has never come into general practice, and as the slight increase of price that might be obtained would not in most cases justify the necessary expenditure of labor. Those varieties that sell at high prices it would pay to cover with bags; but certain it is that at ten cents per

pound it would not repay the trouble. For those that grow for their own use and desire to produce the best, it is a practice that commends itself. It will protect the bunch from injuries by attacks of insects or birds, and will also preserve the bloom that heightens the beauty of their appearance. The bunches would be longer in ripening, but it is claimed they will be fully protected against the early and late autumn frosts. It is to some extent a preventive of the rot, while some state that it has a tendency to improve the flavor and enlarge the berry. Some varieties, however, are said to lose their color, as, for instance, the Brighton grows lighter, the Delaware becomes deeper, and the Niagara is believed to improve in color and flavor. The bags (two pound ones, as a rule, are large enough to cover one bunch) are put over the bunch as soon as formed; it is then wrapped around the cane and pinned, the upper corners of the bag being cut to permit of this. They are left undisturbed until the bunch is thoroughly ripened.

The Demand for Varieties.

In horticulture there is a morbid desire for varieties that is growing stronger each season. The nurserymen are forced in many cases to meet this, and hence they are not as careful in the description of varieties and do not pry into their qualities as closely as the sober judgment of their patrons should demand. They are not to blame in the majority of cases, as many gardeners and fruit-growers would not patronize them, nor would they be thought enterprising if they did not annually illustrate their catalogues with many new wonders which are more or less highly colored and glowingly described. While it is well to be continually on the outlook for new advances in this as well as in all other departments, but a little conservatism would balance matters better as they now stand. In many cases it would be "Better to bear the ills we have than fly to those we know not of." Strawberries placed on the market at two or three dollars a dozen should cause the purchaser to ponder well whether the old variety, well-cared for and cultivated, would not do for a few years yet. The number that have raised the old standard sorts of all varieties successfully are not yet too plentiful, and it would be but advisable to investigate some before the old and tried kinds are discarded. By all means advance, but let it be steadily.

Ants Causing Apple Trees to Die.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Would you kindly inform me through the JOURNAL in regard to the following: Several of my apple trees have died before they have come to maturity. The bark gets black and apparently rough and scaly, and almost stops growing. They get loose in the ground, and when I examined the ground around them, I found that it was almost alive with ants. I would like to know, is the ants working in the ground the cause of the trouble?—and also a remedy.

J. P. S.

Pleasant Valley, Ont.

The trouble with your trees is in all likelihood owing to the ants, provided that they have been properly planted, manured, and well cared for in other respects. Pouring very hot water freely into the nest will prove destructive to them, or a few teaspoonfuls of coal oil applied in a like manner will, it is claimed, will give equally good results. Carbolic acid and corrosive sublimate are credited with being very poisonous to ants, and might be used in a weak solution (say 2 per cent.) for this purpose.—Ed

"I find the JOURNAL an excellent medium to reach intending purchasers."—J. E. Brethour, Oak Lodge, Burford, Ont.

Summer Meeting of the Fruit Growers' Association.

This association meets at Seaford on Wednesday and Thursday, the 3rd and 4th of July. The programme is an excellent one, and should not fail to bring together an enthusiastic gathering of fruit growers and others interested in the laudable work of advancing this important division of our Canadian agriculture. The topics for discussion so far are as follows:

Grapes for Home Use; Methods of Culture, etc.—Mr. M. Pettit, Winona.

Judging Fruit at Fairs—Mr. Thomas Beall, Lindsay.

Flower and Fruit Gardening as an Occupation for Ladies—John George Post, Elgin.

The Best Method of Culling, Packing, and Grading Apples for Market—Mr. A. McD. Allan, president of the Association.

Insects Affecting the Strawberry—Prof. Fletcher—Experimental Farm, Ottawa.

My Experience with Strawberry Culture for Market Purposes—G. C. Gaston, Craighurst.

Strawberry Culture for Amateurs—John Colville, Aultsville.

Best Three Varieties of Strawberries (a) for the Home Garden, (b) for the Market Garden—John Little, Granton.

Gooseberries, their Culture and Propagation—P. E. Burke, Ottawa.

Other papers and addresses are expected, so that a rare intellectual treat awaits those attending. By applying to the secretary, Mr. L. Wolverton, of Grimsby, Ont., certificates for return at reduced rates will be gladly sent to all who apply. Make a point to be present.

Two Varieties of Rape.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—Will you please examine this sample of seed, also these plants, and let me know what they are, as I sowed a field to rape as I supposed, but parties that have seen it say it is not rape, but mustard. The seed was bought through a seed dealer in the town of Aylmer.

G. & B. DEO.

Evergreen Stock Farm, New Sarum, Ont.

The seed sent us proves to be that of bird rape, and not of the English variety used as a fodder. It possesses no value as fodder, though Mr. Bruce, seed merchant of this city, tells us it is used extensively by bee keepers for honey purposes. Mustard seed would be far more biting in taste. The seed of the regular fodder variety is about twice the size of that of the bird rape. There is no difficulty in getting rid of it as it is as easily killed as the common variety.—ED.

Strawberries.

BY J. HOYES PANTON, M.A., PROFESSOR OF NATURAL HISTORY AT THE ONT. AGRICULTURAL COLLEGE.

Having had strawberries planted among some of our grape vines for three years, until the vines became thoroughly established, I have thought it expedient to give our experience in the form of a Bulletin, which may be of service to those who read it.

Few berries are more luscious than the strawberry, and few plants can be more successfully cultivated, and yet how many farm homes there are in which this fruit is seldom eaten.

It is hoped the time is not far distant when the fruit and vegetable garden will form an important feature in the vicinity of the farm house, and that on the farmer's table will be seen the fruits of each summer month, when strawberries, raspberries, etc., will be found at home, and not require to be sought after in distant "berry patches." A little taste and comparatively little time and care will supply these attractive treats to those who desire them.

CONDITIONS SURROUNDING THE PLANTS.

Location: Latitude north, 43.38°; height above sea level, 1,100 feet; above Lake Ontario, 858 feet.

Exposure: South-west.

Soil: Clay loam.

Meteorological: Mean annual temperature, 42.2°, 1880-1886; mean summer temperature 57.1°, winter, 27.3°; highest temperature (1881) 98°, lowest (1884), 35°; average number of days' rain fell per year, 72; rainfall, including snow, 24.7 inches; prevailing winds, south-west, 43 per cent.; north-west, 31 per cent.

MANAGEMENT.

The plants are placed in rows three feet apart, and the plants one foot apart in the row. Arranged in this way the cultivation can be largely done with the hoe. They were allowed to occupy the ground for three years, when they were removed to another place. The ground was well manured before planting, and another application made the second year. In winter they were protected by scattering some peastraw over them.

First year—The runners were kept well back, so as to get strong single plants.

Second year—The same course was followed as far as possible.

Third year—The plants were allowed to grow freely, and the runners untouched.

Thorough cultivation and keeping the ground free from weeds were observed.

VARIETIES.

Wilson's Albany, 10 rows; Crescent Seedling, 20 rows; Early Canada, 4 rows; Arnold's Pride, 1 row; Captain Jack, 10 rows; Alpha, 2 rows; Nicanor, 2 rows; Maggie's, 2 rows; Cumberland Triumph, 4 rows; Monarch of the West, 4 rows.

RESULTS.

Wilson's Albany has done excellently, and may be ranked first. It yields well and is a very suitable variety for shipping.

Crescent Seedling ripened sooner than Wilson, and has been quite productive, but there is a tendency among the berries to be imperfect, owing to incomplete fertilization of the flowers, but this is overcome by having a variety rich in pollen planted near, or among the rows. We overcame the difficulty by planting the Wilson side by side. Crescent Seedling seems to bear more pistillate flowers than staminate. The foliage of the Crescent being somewhat sparse, does not assist in keeping the berry so clean as the varieties that grow more leaves.

Early Canada ripens soon, but is liable to be caught by frost, and on the whole has done poorly with us.

Arnold's Pride is a clean, good-sized, nice berry, but has not been very prolific.

Monarch of the West proved to be a very large berry, but only gave a fair yield. Captain Jack was somewhat late, but very prolific, and a good berry.

Alpha has been a slim bearer, but it has a delightful flavor.

Nicanor gave only a fair crop and ordinary berry. Maggie's was rather small in berry, and as comparatively poor a bearer.

Cumberland Triumph is a large and irregularly shaped berry, with only a fair yield. It is a variety more for the amateur than one desiring to raise berries for market.

CONCLUSIONS.

1. Strawberries will do well in a locality such as ours, if the soil is rich, friable and well drained.

2. Ground for strawberries should have a good supply of plant food, be easily worked, and should certainly be well drained, kept clean of weeds, and well cultivated.

3. We are inclined to favor growing in rows where large quantities are to be grown, and to renew the plants every two years.

4. In well drained, sheltered and good soil, planting out in September is advisable, so as to enable the plant to get thoroughly established. A fair crop next season may be expected; but if such conditions are absent, then plant in spring, and only a medium crop may be looked for.

5. Strawberries may be grown in almost any climate if care be taken. Where the climate is severe, protect the plants by scattering over them peastraw, or some other light covering. Avoid heavy substances such as manure; some place boughs with good results.

6. The following is a list which embraces varieties that are likely to succeed well: Wilson, Crescent, Seedling, Daniel Boone, Manchester, Sharpless, Alpha, Prince of Berries, Bidwell and Jewell. Cres-

cent Seedling and Manchester, being poor in pollen, require such as Wilson among them. Sharpless is large, delicious, but somewhat late. Bidwell is a good family berry, sweeter and larger than the popular varieties, Wilson and Crescent.—*Bulletin.*

The Home.

The Canadian Song Sparrow.

BY J. D. EDGAR, M. P.

From "Songs of the Great Dominion"—London, 1889.

"Every resident of the northern and eastern counties of the Dominion has heard the note of the song sparrow in all the woods and fields through the early days of spring. While his voice is familiar to the ear, very few can boast of having seen him, so carefully does he conceal himself from view. He dwells long upon his first and second notes, and, in metrical phrase, he forms a distinct 'spondee.' He then rattles off at least three 'dactyls' in quick succession. In different localities different words are supplied to his music. Early settlers heard him echoing their despair with 'Hard times in Canada, Canada, Canada.' Others maintain that he is searching for traces of a dark crime, and unceasingly demands to know 'Who killed Kennedy, Kennedy, Kennedy?' The thrifty farmer detects the words of warning—'Come now, sow the wheat, sow the wheat, sow the wheat.' The writer has distinctly recognised in the little song the melancholy sentiments indicated in these lines."—[Note by the Author.]

From the leafy maple ridges,
From the thickets of the cedar,
From the alders by the river,
From the bending willow branches,
From the hollows and the hillsides,
Through the lone Canadian forest,
Comes the melancholy music,
Oft-repeated, never changing—
"All—is—vanity—vanity—vanity."

Where the farmer ploughs his furrow,
Sowing seed with hope of harvest,
In the orchard, white with blossom,
In the early fields of clover,
Comes the little brown-clad singer,
Flitting in and out of bushes,
Hiding well behind the fences,
Piping forth his song of sadness,
"Poor—hu—manity—manity—manity."

Selfishness.

Selfishness, unlike others of the baser qualities that cling to fallen men, has no redeeming side. Look at it when you will, it appears hideous, and no matter from which side you view it, it has the same repellant ugliness. It is the fruitful soil in which the roots of many sins grow deep and wide, as covetousness and avarice. It is a vast hotbed of vile weeds, where no flower of beauty can get a footing, the rankness of which but increases as the successive seasons roll on. It chokes everything that is generous and noble in the minds of men, and where not curbed with a strong hand, it soon produces that stamp of character which we can only view as the essence of hateful.

The mariners of the dark centuries drew wierd-like pictures of the terrors that were to be faced in the western deep. They held that at last the course of the voyageur was stayed by a great sea giant emerging from the waves, who, brandishing an immense club, prohibited all further progress. Selfishness is that great sea-monster meeting travelers on the land. He places before them an impassable barrier in the line of development and experience in all that is noble and true. It is one of the basest of the metals that enter into the human alloy. It steals the heart to the woes and wants of another. It makes the centre sun of the universe to be that little, insignificant pivot called self, which in its relation to all other material things is the very central point of a revolving sphere, the only point in which there is no progressive motion at all.

Like an artful hypocrite, selfishness worms itself

into our good graces unawares. It may be without our knowing it, it chips away at the fountains of all that is good and noble within us, till these become shattered and dry. Like the fell disease consumption, it wastes the mainsprings of generous action till they become a thing of the past. And yet its possessor is wholly unconscious of the leprosy that has smitten him, and is fast turning him into an object of abhorrence in the sight of God and man.

Show me a man without one grain of selfishness and I will show you an angel in the flesh—a moving spirit that lives and has for the sole object of its being—*doing good*, the mainspring of that perfect life lived here by the son of the living God.

Selfishness may be defined as a regard to our own interest solely. Now from this definition it is clear that the selfish man cannot come up to the standard of the golden rule. The medium through which he looks upon the things of others is discolored by the past action of selfishness on his nerve of vision, and if he looks at these at all, he must view them in a false light. It looks not upon the things of others with a view to help them on to holiness and happiness, but, like the leech, its voracious appetite is seeking of their substance; and, like the grave, the insatiable devourer never has enough.

How truly desolate the domain of that heart where selfishness reigns supreme! It may be compared to a desert—one wide, desolate waste of sand or rock, where the deceitful mirage of coming good forever mocks the vision of the one inhabitant who journeys on solitary and alone, towards the joyless region of deeper shades than those which cloud the shadow of death, for the heart that is truly given up to selfishness is condemned to wander alone, alone, alone, without any of the blessings of companionship arising from association with kindred spirits.

Selfishness never fed the hungry, but has taken the orphan's piece of bread; it never clothed the naked, but it has taken away the widow's garment. It never brought balm to the wounds of the sick, but it has robbed them of their substance by taking advantage of their necessities; nor has it even soothed a dying pillow, but on the contrary it has torn the same away with a greedy clutch before the last breath was gone.

For nearly sixty centuries the great giant has gone up and down the continents, one foot upon the wants of the human race, and the other upon the woes, pilfering of their substance. And yet this monster of the land as readily as ever receives the homage of every passing generation.

Banish him from this world, and a shout of relief would ascend from the living that would echo through the spheres of the upward land of the far away, and arrest the attention of all the inhabitants of heaven. Old earth herself would almost cease to groan, and the tabernacle of God would indeed dwell among men.

Destroy selfishness and you arrest the disobedience of children to those who gave them being. You stay the murderer's hand, you cut down the tree of lust, you banish theft from the world, you make it impossible for men to lie, and you bury covetousness in the grave of the past.

A selfish man cannot be happy, for happiness has its mainspring in doing the will of God, and that includes the duty of seeking to promote the happiness of others. This is indeed the short cut to happiness, though it is a by-way that many have never known. Through a divine lane that never fails to operate, we cannot do good to our neighbor without getting good in return; and the measure of that good is just pro-

portioned to our effort in conjunction with the unselfishness of our motives.

How utterly contemptible to spend life with all the possibilities of good within its reach that may be made to tower trees of beauty through all the ages—in gathering only what will prove of but doubtful advantage to us here; nay, what is certain to prove baneful, to say nothing of its ill effects in reference to the beyond! thousands of millions of our fellow-beings have claims upon us. Let us discharge these and there will be but little time left to trouble about self.

A grander gathering is yet in store for earth than it has ever witnessed. A day is coming when "the Son of man shall come in his glory, and all the holy angels with Him, and he shall sit on the throne of His glory; and before Him shall be gathered all nations; and He shall separate them one from another as a shepherd divideth his sheep from the goats; and He shall set the sheep on His right hand but the goats on the left. Then shall the King say unto them on His right hand, Come, ye blessed of my Father, inherit the kingdom prepared for you from the foundation of the world: For I was an hungered, and ye gave me meat; I was thirsty, and ye gave me drink; I was a stranger, and ye took me in; naked, and ye clothed me; I was sick and ye visited me; I was in prison and ye came unto me." There shall not be a selfish man in all that company, but of those on the left there will be the deformities of selfishness in every individual, and to their endless dismay, they shall on the other go away into abodes of everlasting glory, where they can never come.

At a certain mournful supper-table in the history of the past, thirteen men sat at meat. It was the last meal they should ever all take on earth together, and when it was more than hinted that one of them that very night would play the traitor, they said in a successive chorus, "Is it I?" Reader, that is the very question that we would have you ask when you read this paper. Whose garments are stained, are thine? If you find even one of these, try at once to wash away every trace of it, after having steeped it in the dye of Calvary. Strive mightily to be saved from one of the greatest curses that can come upon us here, that of becoming a selfish individual.

FOR THE CANADIAN LIVE-STOCK AND FARM JOURNAL.

A Children's Story.

June, month of roses, has again returned. The poet Bryant wished to die in June, and he got his wish. It was he who wrote, "The woods were God's first temples," and "in the dark'ning woods amid the cool and silence he knelt down, and offered to the Mightiest solemn thanks and supplication."

While you, dear children, with bare feet and broken hat rim and school-bag, start your morning's walk, or roam the woods for flowers, or drive home the cows, while you look on the sparkling waters and the varied greens on the trees, or listen to the sad, sweet song of the pine, let me tell you a story of June under another aspect. It was in this month of the year 1879, among the free grant lands of Ontario, that two men started from their homes to journey by canoe down the dangerous Magnetawan river, to go to Byng Inlet. Unused to canoeing they had some fears, and their progress was slow but safe, until about an hour before sunset. But they are approaching the Burnt Rapids and have gone too near before making their portage. They see their danger. They are close by a rock which they try to gain. One stops paddling and leaps for the rock, but the paddle stopping, twists the canoe round suddenly, and it has gone on and is

now dashing down the rapids, foaming, angry, deafening in their wild rush as their victim passes over. He has been thrown out but still clings to the canoe, and unable to do more, he holds on and circles round and round in the eddy below. The man above is safe on the rock, jumps to shore and makes his way down the wooded bank, to find, if he can, his companion. On the opposite side, not six feet from the shore, he sees him whirling round. A death whirl it must be. He cannot help him. Not ten minutes before he had lent his companion his knife, and nothing else has he, no axe, no raft, not even accustomed to the country, for he is a stranger. Who shall tell the thoughts of that man, who, as he whirls in the abyss, soon to claim its victim, knows his seconds are numbered? The sun is sinking now lower and lower. Black flies in myriads and mosquitoes only add horror to the scene, making death to both almost certain. The rocks around are black with them, and as night comes on, they grow worse. The drowning man sends across the foaming waters messages of love for wife and children, who dream not of his position; he prays, too, as a Christian only can pray in the death hour, come where or how it will, and even sings a song of triumph.

The sun is going, going. Now its parting gleams light with lurid glare the dark pines and hemlocks, and the fresher green of the spring dressed forest, as they bow their stately heads to the evening breeze. It is on the river now, and the water takes the sunset hue, and the angry rapids pour down their waters as before. The man still sings or prays. The sun is gone now and the twilight deepens into intense darkness with the unbroken woods around. It is a lonely shore where that stranger stands to hear the last of his companion. The howling of wolves he may hear, bear or beaver, fox, wild-cat or otter he may see, but a man he knows not where to find.

At last all is quiet on the river and all is over there. Trackless wilds are about him. He survives the night and day, and another night and day are ahead of him. He is swollen and bleeding from the ravages of the insect tribe around him, till unrecognizable and without rest or food. Some shantymen going "on the drive" are making their way down the river, pick him up, and he returns home. Some days later two neighbors come back to the spot, find the body, and bury it in a lonely grave by the river shore.

There are lessons we may draw from this story. The rock of safety, the danger of going too near the rapids, and the likeness of life and this river. I give you three.

1. Let the foundation on which we stand or to which we jump be sure, firm for time or eternity.

2. Life has its rapids. Let us begin to lose our self-command and we go fast and faster, until a final plunge comes and we are over, to whirl, it may be, in a narrow circle, when God gave us talents to fill a greater one.

3. The river begins in a little streamlet away up on some hillside and flows down through the meadows, gladdening, brightening everything as it goes. Birds and flowers, foliage and freshness seem to follow its course. In time it may carry wealth and commerce on its bosom. It may, too, be rocky and dangerous, inspiring pain and terror, flowing on at times peacefully, then rocks, seen and unseen, causing unrest, ruination, death. Which, my dears, is yours to be? Choose now. You have the making or the marring in yourselves.

FOREST LEAVES.

TRUTH requires candor, impartiality, honesty, research and industry; not so a falsehood.—F. Cooper.

For the CANADIAN LIVE-STOCK AND FARM JOURNAL.

Essay on Agriculture.

Agriculture! What is it? Is it a slavish work from year to year, with nothing as a recompense for the amount of labor expended? The ignorant may think so, but the intelligent, well-educated man knows better. There may be farmers even, in our own country, who hardly know the meaning of the word Agriculture, but I hope that such are few.

The word Agriculture is derived from the Latin, and means tillage of the soil and husbandry. The man who can raise the largest crop at the smallest expense and least injury to the soil, is a farmer indeed. The agriculturist's work may be considered of far more importance than any other work that is followed by man, for it may be said that it is the farmer's hand that keeps every one living, and we read that it was the first work given by God to man. Farming is looked upon as the noblest employment of man, for it was followed by the great and good of the holy lands; and we are given to understand, by the Bible, that Job and others of the holy men had herds and flocks. So also had the holy men of other countries, and even some of the most prominent men of our own day, in Europe and America, take great interest in agriculture, and are found very often at the head of shows, and sometimes competing at them.

The Government, which is also interested in farming, supports agricultural colleges for the purpose of training the youth of our country. Any man can educate himself on farming and everything the soil requires by reading agricultural papers and magazines, which are very plentiful now, and the time thus expended is never wasted.

No man can expect to be a scientific and intelligent farmer, or to be a farmer at all, unless he understands the nature and requirements of the soil he cultivates, and the fertilizers needful for that soil. If he is well acquainted with these, he may not be so apt to make mistakes, and thereby avoid many losses, and enable him to use his money to the best advantage. Some farmers may think it wasteful to expend money in fertilizers, and keep on from year to year, taking out of the soil, and never restoring to it, the needful manure.

The pure animal manure is the best for all soils; next comes the bone fertilizer. It is best adapted to wheat, corn and hay. The manure ought to receive more attention than anything else on or around the farm. The next thing in importance is the stock. The thrifty farmer always has warm, comfortable stables for his stock. The warmest are those built under barns. These will keep frost out nearly all winter. Many shiftless farmers think the north side of the fence corner warm enough for their animals, but the thrifty man always has warm stables for his stock.

The farmer's stock should be the best. It pays better to keep pure-bred stock, as it does not take any more to feed them, and they bring much better prices. The stock on a farm generally consists of cattle, horses, sheep, pigs and poultry. Of the uses and merits of these animals, time and space will not allow me to give a full description, or any more than a few lines.

Food ought to receive due care, for this is the most important factor in rearing stock. When an animal's food is neglected it will never grow to be much. Sufficient food must be had if a man wants to make stock-raising profitable, especially in a Canadian climate.

Pigs should receive proper attention, which they do not very often get. When a pig is kept shut up in a

hot, stuffy, stinking pen all summer, and fed on mouldy food, its meat cannot be pure. It would be very little trouble and expense to fence them off a small lot in the clover field, and the meat would be a great deal purer and more wholesome.

As I said before, to be successful, the farmer must understand the nature of the soil he cultivates. There are about three kinds of soil—peaty, or swamp soil, clay soil, and sandy loam. Good clay soil is good for wheat, oats and clover, and is especially adapted for meadows and pastures. Barley and Indian corn grow best on sandy soil, which is also suitable for rye, buckwheat, and other green crops. Loamy soil is neither clay nor sand, but between the two. Swamp soil is not much cultivated, as it does not raise very good crops, because of the amount of organic matter contained.

How to raise good crops is very important. This is not a very difficult matter; simply by obtaining soils suitable for the crop a man wishes to cultivate, and by caring for it just as he would care for one of his animals. If the farmer was to crop the soil continually, he would soon have it so exhausted, that it would hardly be fit to raise any kind of crop; so, then, it is important that manure should be applied, and also a rotation of crops should not be forgotten, as it is a necessary factor in the preservation of the soil.

After all that has been written and said about agriculture, there is one very important fact that should not be lost sight of, that is drainage, and as long as it is neglected, the soil will not be so productive. It must be admitted that drainage does not receive as much attention as it might in this country. Drainage is the process of carrying away the surplus water from the soil. This is done by means of drains, covered or uncovered. The amount of drainage carried on in Great Britain, France and Holland is enormous. Soil that is thoroughly drained produces a finer grain, as well as a greater quantity of roots. It yields also finer and much superior grasses, and carries consequently more and heavier cattle. For all uses that a farmer wants land, drained land is much superior to undrained. When drained, cold, subterranean surplus water, that retards vegetation, is removed, air and heat enter, and facilitate the growth of all plants; crops ripen better, and mature faster, and in certain seasons, crops that would not ripen at all, are fully developed. Another thing is that when soil is drained, the seed can be sown earlier, especially in rainy seasons, when the undrained soil is cold and wet, and chiefly in swampy places. Undrained lands require a great deal of water-furrowing, consequently a great area of land is left unsown. I will conclude my essay by adding a few notes about the general appearance of the farm. You can nearly always tell a thrifty man by the look of his place. Where the farmer is shiftless, his gates are always hanging on one hinge; his buildings are poor; his fences are all down; he has no fruit trees, nor any shade trees, and everything about his place is as inconvenient as possible. On the other hand, when you meet with a thrifty man, his place is tidy; he has good buildings, and good orchards, and generally shade trees around the buildings, and especially around his pastures, to protect his animals from the hot sun.

MAM HAGGERTY.

[It will, beyond question, surprise our readers to know that the above essay was written by a maiden of but twelve years. It contains enough solid information, and sober thought, and is written in such language as to make it well worthy of one who has seen many more years come and go. We are glad to know that the writer won a prize with it, an honor which it undoubtedly richly deserved.—Ed.]

Jottings.

Fall Seed Wheat.—Mr. John Ambleside, Port Perry P. O., Ont., places an advertisement in this issue, offering fall seed wheat of the Red Michigan variety, for which he claims many good qualities. He has grown it for a number of years, and the good results he obtained, warrants him in offering it to his fellow farmers. See the advertisement.

Hay Loaders.—Editor Canadian Live Stock and Farm Journal: Will you kindly send me the address of firms manufacturing hay loaders? I wish to get a loader for this season.—Yours respectfully, A. B. McLean, Vorkton, Assa., N. W. T. Messrs. M. Wilson & Co., of Hamilton, Ont. manufacture a loader that may be recommended. See their advertisement now running in our columns.—Ed.

Shorthorns Shipped to South America from Canada.—We learn from Messrs. Green Bros., of The Glen, Innerkip, that they recently made a sale of a number of their Shorthorns for shipment to Buenos Ayres, South America. This being the first from Canadian herds, we hope it is but the insertion of the thin edge of the wedge that may open up a trade of good dimensions. Their well-known stock bull, Eclipse, a four-year-old cow, Daphne, sired by Earl of Mar, and out of Duchess of Springbow; a red heifer calf, Camellia; and an excellent four-year-old bull, Premier, of their own breeding, and owned by Mr. Robert Scott, Blandford, comprised the shipment.

Dates Claimed for Fall Exhibitions.—To prevent the clashing of dates as far as possible, as well as for the benefit of our exhibition associations, and information of our readers, we would kindly ask the secretaries of all our exhibition associations and agricultural societies, to send us dates of their exhibitions, and we shall willingly give them free space as below:

Name.	Date.	To be held at	Secretary.
North Lanark Exhibition.	Sept. 24th to 26th	Almonte	Wm. P. McEwen
Toronto Industrial and Agl. Exposition.	Sept. 9th to 21st	Toronto	H. J. Hill.
Great Central Fair.	Sept. 23d to 27th	Hamilton	C. R. Smith.

Death of a Famous Sittyton Bull.—Intelligence received the other day from Kansas, U.S.A., states that the famous Sittyton-bred bull, Baron Victor, has had to be sent to the butcher by his owner, Col. W. A. Harris, owing to an accident he recently came by. Baron Victor, which was calved in 1880, was exported in 1882 by Mr. James I. Davison, Balsam, Ontario, and after being successfully used in his herd for some time, passed into Col. Harris's herd at the long price of £200. But the expenditure was amply justified by the results. His get were uniformly low-legged and thrifty to a degree rarely equalled, and so great was their reputation, that it is said the Scotch Shorthorns owe more of their popularity in the west to the impression this bull made than to almost any other cause. Baron Victor was got by Barmton 17763, out of Victoria 58th, by Pride of Isles 35072.—*North British Agriculturist.*

Illustrated Live Stock, Sports and Pastimes.—Three of our contemporaries across the sea, *The Live-Stock Journal*, *Agricultural Gazette*, and *Barley's Magazine*, united their forces in the producing of a summer number, bearing the above title. It contains contributions from the pens of the leading writers of England, and sketches and coloured illustrations from the pencils and brushes of her foremost artists. Two excellent colored illustrations, one an effective reproduction of Walter Hunt's fine painting, "To the Rescue," and the other a series of incidents in the hunting field, are also included. There are also a number of other illustrations in black and white, comprising sketches of Wilbeck and St. Simon, the Royal Farm at Windsor, etc. Wm. Housman, Prof. Wrightson, Jas. Byrhe, Mr. Burdette Coutts, Earls Cathcart and Harrington, and many other well-known writers on live-stock matters, all materially to heighten the interest of its pages. Messrs. Vinton & Co., of London, the issuers of these periodicals, are its publishers.

Ontario Pump Company.—It must be a source of much encouragement to the above company to feel that their efforts to produce superior implements have not only been appreciated by Canadian farmers, as evidenced by an ever increasing trade, but foreigners have also acknowledged the superiority of the workmanship of the implements turned out by this firm. Just recently a large shipment was made to Bucarest, Roumania, and some time ago they sent a windmill, the third one ordered, to Siam, which is, we understand, the largest shipment ever made over the C. P. R. from Ontario. One of these

Halladay Windmills was also shipped to Germany but a short while ago, and but last week they sent an expert to erect eleven 16 foot geared windmills, on the "Kaye Farm," in the North-West Territories. They also manufacture feed grinders, haying implements, and all kinds of pumps, which have all received almost as hearty a welcome as their windmills. Our readers will do well to consider their new advertisement which appears with this number and if seeking anything in their department should at once write them for particulars.

Chatham Wagons.—These are manufactured by the Chatham Manufacturing Co. As a criterion of the demand for them at present, we may say that they sold during the last year, over two thousand of them, and that there are something over eight thousand of these wagons in actual use all over the continent. The satisfaction they have given augurs well for a trade of vast proportions. They have met with ready sale in all the provinces, as many as 750 going to the North-West last year. The main feature of excellence in these wagons is the patent climax truss rod, which gives the wagon greater capacity than any wooden axles could stand, and this, coupled with great ease in running, has been the secret of their great success. See their advertisement in this number.

Scalding and Soaking Butter Tubs.—Is it necessary to scald or soak a new white ash butter tub before putting the butter in? If so, please state which is the better, soaking or scalding.—READER, Wilfred, Ont. Both are absolutely necessary for the keeping of the butter for any length of time. The scalding should be done first to remove any dust or dirt that may have found its way into the tub. Hot water should first be used, and then it should be rinsed out with cold and set to soak filled with water and a few handfuls of salt added. This will not only prevent the butter from absorbing the flavor of the wood, but will also keep the butter better, for being thoroughly soaked, it will not absorb any of the brine or moisture of the butter, and will also more effectually keep the air from coming in contact with it.

Toronto Industrial Fair.—This fair is to be held the coming fall, from Sept. 9th to 21st. The work of preparation is being pushed rapidly forward, and everything that enterprise and ability can do is being done to make this the most successful and largest exhibition yet held. The Industrial fair has a reputation not alone confined to Canada, and we are assured that under its present efficient management, the coming exhibition will add a brighter lustre to its past record. The prize list to hand strongly bears out in this, as it is very neatly gotten up, and shows that every inducement is being held out for exhibitors to make a good showing. By dropping a post card to the Manager, Mr. H. J. Hill, Toronto, it will be gladly sent to any address. For the accommodation of the large exhibit expected, many new buildings that shall meet as far as possible the wants of the exhibitors are being erected.

Our Cattle Trade.—That earnest friend and patron of our cattle interest, Ald. Frankland, of Toronto, in a recent letter to the *Globe* of June 25th, written from Liverpool, gives some good advice to our Canadian feeders. We are one with him in this, and always have been so, believing that the question of early maturity of our stores is a powerful means to reduce the cost of production. He shows that the Americans have adopted the idea, and the result is that their trade, though they only get \$3.85 to \$4.25 per hundred, and we \$4.50 to \$5.00 per hundred, is paying better than ours. He says that the fact has been demonstrated so plainly in many parts of America, that they can build up a two-year-old steer to weigh 1360 lbs. live-weight, and when slaughtered produces 734 pounds of beef, the very weight sought after in every part of Great Britain, and not only in preference to larger carcasses, but sells at a slight advance. He noticed that in the Liverpool open markets, that the first-class purveyors, selecting 30 or 40 carcasses, generally marked well-developed carcasses of flesh that weighed from 690 to 740 pounds. This matter we have before emphasized, but Ald. Frankland has given it a new impetus, and we hope it will be well looked into by our stockmen.

A Fraudulent Agent.—We are asked by the publishers of *The Horseman* of Chicago, to warn our readers against doing any business with them through one J. W. Healey, who is falsely representing himself as their agent, and collecting money on subscriptions, etc. *The Horseman* will gladly make complaint against and prosecute him as soon as he can be found, and any one knowing of his whereabouts will oblige them by sending his address to their office. That others of their friends who have not been victimized by this man may be on their guard against him, his description is given herewith: Between fifty and fifty-five years of age; he is about five feet six inches tall and looks like a man who would weigh 140 pounds, but really is heavier; gray eyes, dark brown hair well tinged

with gray; moustache and whiskers of the same description, the latter worn short and close cut, in the form of side-burns. His hair is thin and he is bald on the top of his head. His complexion is sallow and features rather pinched. He was born in Quebec, can speak French, and for fifteen years was a commercial traveller for ready made clothing houses in Ham. ilton and Toronto. Almost every hotel man in Canada knows him. If any of our friends meet this man, they will confer a favor by telegraphing to *The Horseman* at once at that paper's expense.

Report of the Fruit Growers' Association.

The late report of this Association is a publication of over one hundred and sixty pages, containing an abundance of horticultural information from the best authorities in Canada, if not in America. This volume contains many original papers that will pay every farmer in our Dominion to thoroughly peruse and think over, for with advancing years this industry will surely attain to an important position in our commonwealth if our conditions are interpreted rightly. This association has been hurrying on the improving of our fruit growing interests with commendable zeal, and the fruition of their toil is becoming apparent in many a garden, orchard and farm. The society has done well to leave some memento of their appreciation for the industry and enterprise of its president, Mr. A. McD. Allan, of Goderich, in the form of a frontispiece to the present volume. This gentleman has been strongly identified with this interest for years past, and has worked nobly to uplift one of the representative divisions of Canadian agriculture. No farmer should slight this branch of our husbandry, but all should show their appreciation of the work that is being done by at once becoming enrolled on its list of members. It would be impossible to review this report owing to the abundance of matter it contains, but we shall from time to time make draughts on its pages.

Clydesdale Exportation.—The exporting season of 1889 has begun in good earnest, upwards of forty head of pedigreed horses having left the Clyde for the United States and Canada during the past few days. The total number exported since 1st January is quite equal to the number exported during the corresponding period of the previous year. Half-a-dozen of those exported lately go to Winnipeg, and are the property of Messrs. J. & A. McHattie, Aberdeen. Mr. Jos. Vance, Hamburg, Ontario, purchased four well-bred horses from Mr. C. Lawson, Mains of Cults, which left the Clyde on Friday. Eight animals of approved breeding and good quality were shipped by Mr. Gilmour to Toronto at the same time. A first-class selection of eight well-bred horses was made by Tolbert W. Evans, Yelverton, Ont., from the studs of Mr. Walter Park, Hatton, and Mr. Arthur Lang, Garmeyland, Paisley. Amongst these were two capital colts purchased from Mr. Lang, one of which was third at Barrhead, fifth at Maryhill, and fifth at Paisley, and both of which are well colored, highly bred animals, calculated to improve the native stock of Canada. Amongst those purchased from Mr. Park were several promising animals, got by Sir Hildebrand, 4024, which was first at the Royal in 1886, and Jordanshaw, 3343 the Kinross premium horse of this season. An outstanding filly in this lot was Paisley Gem, a beautiful yearling, which gained first prize in the Derby at Paisley last Thursday. This filly was bred by Mr. Love, Margaret's Mill, Kilmalcolm, and got by Jordanshaw, out of the mare Miss Lawrence, which in 1884 stood second to Edith Plantagenet at Glasgow summer show. The shipment made by Mr. Evans last year was one of the best that left Scotland, and the farmers of Canada have appreciated the service rendered by the importation of a better class of animals. Several of them were winners at the shows in autumn, and all of them have been sold to good advantage.—*North British Agriculturist.*

Stock Notes.

Parties forwarding stock notes for publication will please condense as much as possible. If written separate from other matter, it will save much labor in the office. No stock notes can be inserted that do not reach the office by the 23d of the month preceding the issue for which they are intended.

Horses.

A pure bred Clydesdale stallion is offered for sale by Messrs. Rathbun & Baikie, Deseronto, Ont. See their advt. appearing in this number.

Mr. James Henderson, of Belton P. O., Ont., informs us that his two pure bred Clydesdales, Lord Ullin, a 4-year-old by Darnley, and Day Wallace, also 4 years, have done good work this season, and are in excellent health.

Shorthorns.

Mr. J. E. Brethour, of Oak Lodge, Burford, Ont., who breeds Shorthorns and Berkshire pigs extensively, makes a change in his card in the Breeders' Directory.

Mr. John Dryden, of Brooklin, well known as a breeder of Shorthorns, Clydesdales and Shropshire sheep, makes a change in his advertisement with this number. He offers some choice rams and lambs. See advt.

Mr. George Ballachee, jr., of Brantford, Ont., places an advertisement with us, offering for sale a number of bull calves, Shropshire rams and Berkshire boars and sows. Intending purchasers should not fail to see this advertisement.

Mr. D. K. High, of Jordan P. O., Ont., writes us: "I am sorry to report the death of my yearling Shorthorn heifer which I have purchased from Arthur Johnston, Greenwood P. O., Ont., Nonpareil Duchess = 15065=, got by Duke of Lavendar imp. = 1243 = (57135), dam Nonpareil 36th imp."

Mr. McHugh, proprietor of Kendallville herd, Cresco, Iowa, reports the following averages obtained at his recent annual sale: 35 females averaged \$116.30; 11 bulls averaged \$120; 46 animals aver ge \$117.15. The chief purchasers were farmers who were starting as breeders. The Cruikshank bull, Double Gloster, at present stands at the head of the herd. He elicited many compliments from the onlookers when he was led into the ring, just before the sale, with a number of his get.

Messrs. Green Bros., The Glen, Innerkip, report the following sales of Shorthorns: A roan yearling bull, sired to Mr. Robt. Scott, Blandford, and a red yearling bull, sired to Mr. Joseph Hill, Paris. Also the following consignment to an American purchaser for shipment to Buenos Ayres, South America: their top stock bull, Eclipse; a four-year-old cow, Daphne, sire Earl of Mar, dam, Duchess of Springbrook, and a red heifer calf, Camellia. Included in this shipment was a very nice four-year-old bull, Premier, bred by Messrs. Green, and owned by Mr. Robert Scott, Blandford. This is, we believe, the first shipment of Shorthorns to South America from Canada.

J. E. Brethour, Oak Lodge, Burford, Ont., writes: "I beg to report the sale of the following Shorthorns and Berkshires: Chas. H. Robertson, Paris, 1 bull and 2 year heifer; Messrs. Green Bros., The Glen, Innerkip, 1 bull; Lewis Hand, Burford, cow and 2 year heifer; H. G. Roy, Mt. Vernon, 2 cows; W. G. Cavan, Alden, New York State, 3 sows; J. G. Bechtell, Burford, 1 sow; Wm. Penn King, Oak Wood, 1 boar; C. R. Decker, Chesterfield, 1 boar; W. F. Mallory, Burford, 1 sow; John Husband, Bronte, 2 boars; V. R. Adams, Dayton, 1 boar; T. & J. McKenzie, Scotch Block, 1 boar and sow; W. C. Burn, Princeton, 1 sow; Messrs. Green Bros., Innerkip, 1 sow; Hugh C. Hammer, New Durham, 1 boar; Jas. Dowsell, Gleneshe, 1 boar; Lewis Bond, Burford, 1 sow; J. R. Martin, Cayuga, 1 sow; Wm. Thirlwall, Kentville, N. S., 1 sow and boar; Dugald Campbell, St. Thomas, 1 boar; C. Edgar Whidden, Antigonish, N. S., 1 boar; W. G. Cavan, Alden, New York State, 1 imported boar, 7 breeding sows, and 8 boars, 3 or 8 months old; James Playfair, Sturgeon Bay, 1 boar; Jas. Gibbs, Brookdale, 1 sow; Chas. Young, Brookdale, 1 sow and boar; Ed. Gage, Hamilton, 1 sow. The demand for Berkshires, possessing good bone and size, has been very active this season. I have yet about thirty boars and sows of different ages which I will sell at farmers' prices to make room for a fresh importation that I am expecting in June. I find the *JOURNAL* an excellent medium to reach intending purchasers."

Holsteins.

Messrs. J. & W. Sangster, Ormstown, Que., breeders and importers of Holsteins, place their card in our breeders' directory.

Mr. John Leys, M.P.P. of Toronto, Ont., reports the sale of eight head of Holsteins, seven cows and a bull, to Mr. C. E. Geddes, Pincher Creek, N. W. T. They are credited with being an extra fine lot and will no doubt do much to widen and extend the field of this useful breed.

Messrs. J. E. Page & Son write us as follows: "The value of our grand bull Clothilde and's Artis is being appreciated. We have sold our bull calves at good prices. Sales this spring and summer number 21 animals. The milk and butter records of Clothilde and's Artis' dam and grand dam is without an equal—namely, an average annual milk record of 24,811½ lbs. at an average age of five years, and 26 lbs. 12 ozs. of butter in 7 days. His heifer calves are wonderfully developed, among which is Carlina, dam, Carlotta, H. H. B. 1266. A. R. 164, butter record, 22 lbs. 12½ ozs. of butter in 7 days, and 91 lbs. 2¼ ozs. in 30 days, 18½ lbs. of milk being required to make a pound of butter. She is one of the most noted breeders living. Five of her calves sold for \$1000 each. Our herd contains Carlotta's Netherland, a son of Carlotta and Netherland Prince, and is the handsomest and best developed yearling bull we ever saw."

Mr. R. S. Stephenson, of Ancaster, Ont., who has a fine herd of Holsteins, writes us: "Johanna Tensen, one of our cows, has milked 77 lbs. of milk in one day on grass alone, and without any previous preparation. Her daughter, Catharine Tensen, now three-years-old, gave 66 lbs. in a day. These records are not anything very unusual for Holsteins, but it shows what they are capable of doing in the hands of ordinary farmers. Our young bull, Netherland Rosmar, is developing into a very fine animal, and is pronounced by every one who has seen him, as being a magnificent bull, and from his excellent breeding he must leave the impress of his stock in the herds of the farmers who use him. Our old stock bull we have been obliged to fatten. He weighed a short time ago 2600 lbs., and is still gaining. When we first began feeding him he gained for one month nearly four lbs. per day."

Messrs. A. C. Hallman, New Dundee, Ont., write us: "Since our last report we made the following sales: A very choice yearling heifer, sired by our famous Aeggie bull, to Isaac Hallman, Lestowell, Ont. Mr. Hallman purchased a thoroughbred bull several years ago from us, and was so well pleased with the improvement, that it encouraged him to invest in a thoroughbred female, adding another proof where Holsteins have once gained a foot-hold, they are bound to stay. A bull calf to Jacob Wagler, Wellesley. Mr. Wagler is a dairy farmer, and has considerable experience with grades, and is so well pleased that he still intends to further improve his herd. Owing to the very

large demand in 1888, we were entirely sold out in bulls, yearlings and calves, so that we had nothing to carry over for this year's trade, which accounts for not reporting more sales. We imported one and sold it a long time since, and if we had twenty more we could have easily disposed of them. We have a finer lot of bull calves than ever—rich in breeding and very symmetrical. Our herd now numbers over 40 head, which gives great room for choice, as all our stock is carefully selected and bears inspection. Our young herd bull, Netherland Statesman Cornelius, developed wonderfully fine in a dairy sense. For fine points he is hard to equal, being very richly bred for milk and butter, he cannot help showing these qualities, which he does, to a remarkable degree of perfection. Having Netherland Prince for his grandsire (the great butter bull), Lady Fay for his granddam (first prize cow, New York Dairy Show), and Aggie Cornelia 2d, for his dam, places him in the proud ranks of the most noted families of Holstein-Friesians. Their great performances have so often been reported that we shall not go into further details about them."

Herefords.

Mr. Jas. F. Lawrence, of Fish Creek, Calgary, shipped from Oshawa, on the 29th inst., 47 head of cattle, 33 of which are pure bred Herefords, purchased principally from the noted herds of R. J. Mackie and L. G. Drew, of Oshawa. Mr. Lawrence was here two years ago and purchased Herefords, Shorthorns and grades of both, and says he can do much better with the Herefords and their grades, which carry their flesh well through the winter on the range, while the others get very thin. Mr. Lawrence has purchased a herd that will be likely to take a first place in the North-West, as the herds from which he has selected do in Ontario. Sir Oliver Moreton 19013, by Moreton 1437, purchased from Mr. Mackie, will stand at the head of the herd. He was imported, and as a calf and yearling won first prizes at all the leading fairs of the Dominion. He is a very blocky animal with a grand head, and is a first-class stock getter. The females are a fine lot, comprising some of the best breeding cows of Messrs Mackie and Drew's herds, and will, without doubt, make a good record where they have gone. This is the largest shipment of Herefords that has been made for some time, and we wish Mr. Lawrence the success his enterprise merits.—*Ontario Reformer.*

Guernseys.

Mr. E. R. Brow, of Charlottetown, P. E. Island, writes us modestly referring to his own herd: "Away down by the sea, in the beautiful little garden of the Gulf, is a small herd, consisting of seven head of pure, registered Guernseys, some members of which have a milk record of 41 lbs. of rich milk per day in mid-winter. I am aware that the merits and virtues of the Guernseys are not placed before the public as fully as their claims deserve, but still before many years, I hope to see choice herds of this most excellent breed of cattle in every Province, from the Atlantic to the Pacific." Mr. Brow wrote us over a nom de plume, but we think we are not breaking faith in doing as we have done. We re-echo the wish and hope we may treat our readers to more frequent notes from their patrons.

Ayrshires.

Wm. Stewart, jr., of Menin P. O., Ont., writes: "My stock of Ayrshire cattle are doing splendid. Have some very choice heifer and bull calves from the prize-winning bull General Middleton 1762, winner of 2d prize at Provincial Exhibition, Kingston last fall; also 9 firsts at other county and township fairs. This bull has also headed the herd that gained the silver medal for two years in succession at the Bay of Quinte Exhibition, Beilleville, Ont. He also won diploma for best bull of any age."

Sheep and Pigs.

Messrs R. J. Gurnett, of Ancaster, Ont., again place their card with us. See Breeders' Directory.

Mr. Wm. Davies & Son, of Kinocroft Farm, Markham, appear in our directory of this issue, as breeders of improved large Yorkshire swine and Guernsey cattle. They also offer for sale 3 choice Guernsey bull calves. See advertisement.

Amongst the many Canadian breeders who are taking in the English shows this summer is Mr. J. C. Snell, who purposes bringing out a selection of young Berkshire boars and sows and Cotswold rams to supply the increasing demand for good things in these lines. Mr. Snell expects to return about July 20th.

Messrs. Davies and Son, of Kine Croft Farm, Markham, who are breeding Yorkshire pigs and Guernseys, write us: "We have had a very active demand for Yorkshire pigs; could have sold many more. Unfortunately a boar and sow bought in England reached Liverpool too late for the ship, and being late in fall, could not be got out. We received safe and sound, two weeks ago, five sows and a boar of the improved large Yorkshire breed, from the celebrated herd of Sanders Spencer. If we know any thing about them, they are hard to beat."

C. T. Garbutt, Claremont, Ont., writes to say that his Berkshires are still doing fine. "During the last month since I advertised in Breeders' Directory, I have made the following sales, as follows: 1 breeding sow and boar to Thos. Salter, Greenbank; 2 sows to John Adams, Scugog Island; 1 sow and boar to William Garbutt, Holland Centre; 1 boar to Sidney Coxworth, Whitevale, Ont.; 1 boar to John M. Squires, Mannalla, Ont.; 1 sow to Thos. Burnham, Sandford; 1 pair to agent of C.P.R. Station, Claremont; and 1 sow and boar to J. F. Garbutt, Long Bay, Manitoulin. A few choice pigs still on hand. Young pigs booked for July litter out of imported sow."

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For sale, registered pedigrees. Agent for Dana's Sheep and Cattle Labels. INO. DUNKIN, Brucefield, Ont. mar-1

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6 weeks old, \$5 each. Bred from imported stock. Eligible to register. Order at once F. J. RAMSEY, Moultondale Stock Farm, Dunnville, Ont. my-1

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One dark brown, 13.3 hands, 700 lbs., from T. B. mare and half Arab stallion. One light brown, 13 hands, 600 lbs., from a 4 minute trotting Exmoor pony mare, and a 14 1/2 hands, Phil Sheridan stallion, 2:40. Both very kind and nicely broken to saddle. Address,

JAMES MOODIE, Eschool Grove Stock Farm,
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Shorthorn Bulls

1 bull, aged 5 years; 1 bull, aged 19 months; 1 bull, aged 14 months; 1 bull, aged 12 months. All of Dom. S. H. H. B. registry, except the bull aged 19 mos., which is eligible to N. S. H. B.

A. C. BELL,
Troutbrook Farm, New Glasgow, N. S.

CHOICE LOT OF

BERKSHIRE SOWS AND BOARS

sired by Imported and Canadian-bred boars, and from choice registered sows. Will be sold cheap (considering quality) to make room for fresh importation. Will be shipped to order and guaranteed to be as described

J. E. BRETHOUR,
July-1 Burford, Ont.

—FOR SALE—

A few choice BULL CALVES, SHROPSHIRE RAMS and BERKSHIRE BOARS and SOWS. Grand Bow Park bull Baron Knightly 8th at head of herd.
July-4 GEO. BALLACHEY, JR., Brantford, Ont.

IMPORTED STOCK.

Our Mr. J. C. Snell, who is now in England making selections of

**BERKSHIRE PIGS AND
COTSWOLD SHEEP**

from the leading flocks and herds in Britain, will return about 20th July, and hopes to bring out a good selection of young Boars and Rams, besides a few females, which we will be pleased to show to our patrons on their arrival.

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One Clydesdale Stallion

Registered in the Clydesdale Stud Book of Canada; rising four years old. Perfectly sound and gentle. Sure foal getter. For pedigree and particulars apply to

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EVERY young man and young woman in the Dominion who contemplates taking a commercial course in the Fall is requested to send to the St. Catharines Business College for the new Catalogue, which will be sent free to any address.

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Lying between Canada Southern Railway, and Grand Trunk Air Line, Cayuga Stations.

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A-1 Shorthorns,

Baron Constance 10th heads the herd.
Leicester and Cotswold Sheep, Berkshire Pigs,

THOROUGHBRED AND HEAVY HORSES OF ALL KINDS
Young Bulls a specialty. Supply always on hand. Come and See.

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75 HEAD OF THE WORLD-RENOUNDED

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Winners of the Silver Medals and Diploma Sweepstake Prizes at Toronto, 1885; Quebec, 1887, and Kingston, 1888, scoring the highest number of points (117.28) ever made by any breed in a public test.

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Has now seventy descendants that have tested 14 to 16 lbs. of butter in seven days. His best daughter, Lady Fawn of St. Anne's, with her wonderful record of 16 lbs. 12 1/2 ozs. of butter in seven days; 64 lbs. 8 ozs. in twenty eight days, and 40 lbs. milk per day - all when fifteen years old - is in this herd.

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Do you want a pure St. Lambert Bull to head your herd? Bulls having from 21% to 31% per cent. Victor Hugo, and 18% to 37 1/2 per cent. Stoke Pogis 3rd, combined with as high as 40% per cent. of Mary Anne of St. Lambert's blood, for sale from \$500 to \$750. We don't keep bulls to sell for less than \$100, nor will it pay you to buy a poor one. A bull is half the herd; therefore, buy a good one.

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July-2 St. Anne de Bellevue, P. Q., Can.

Agricultural and Arts Association.

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Will be held in the

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From September 9th to 14th, 1889.

Entries for Live Stock will be closed Aug. 24th. Schedules for entries and prize lists can be obtained from the Secretaries of Agricultural Societies, or by application to

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3 CHOICE BRED BULL CALVES, about 4, 5 and 6 months old. A capital opportunity for butter makers to grade up their herd.

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Grown 50 miles north-east of Toronto.

The 6 years ago I procured some pure Red Michigan Fall Wheat (a rounded, hard variety, and have sown it ever since, with best results, it having proved hardy, vigorous and profitable. I have 20 acres of it now looking grand.

I think this wheat for a change of seed should be an excellent one for Western Ontario, where so much fall wheat is grown. I expect to have it ready for distribution early in August.

PRICE, \$1.25 PER BUSHEL.

Well cleaned and screened, and delivered at station.
Good Bags, 25 cents each.

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Feb., 1889. 12 1/2

Queens



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Virgin,	\$0.40 each.	\$1.00 per 3.	\$1.75 per 6.
Unested,	1.00 "	2.75 "	5.00 "
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Further prices on application. Address.

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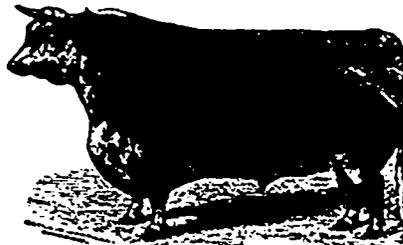
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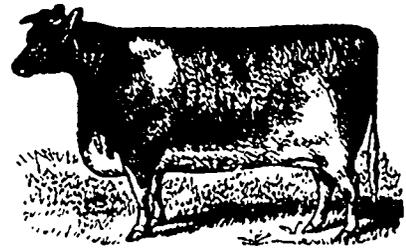
Heifers and bulls for sale, mostly sired by imported Duke of Harehote 68th, 65797.

Also a number of fine Hereford grade heifers and young bulls.

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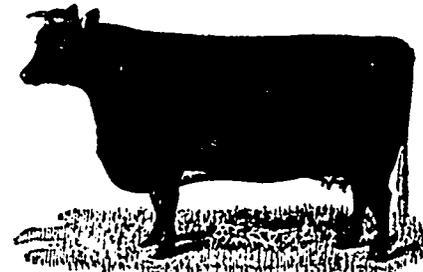
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Peterborough is on the C. P. R. and G. T. R. Six trains daily. Write or wire me when to meet you. Will be pleased to show the stock, whether you purchase or not.

a-3

JOSEPH REDMOND.

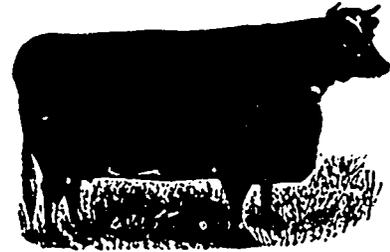
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Have a grand lot of bull calves sired by our imp. Cruickshank bull Vermillion (50587), and a very choice lot of heifers, now in calf to Vermillion; also shearing rams and ram lambs from imp. sire and dams. Prices moderate. Terms easy.

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Have at all times a number of both sexes for sale. Catalogue of young bulls recently issued.

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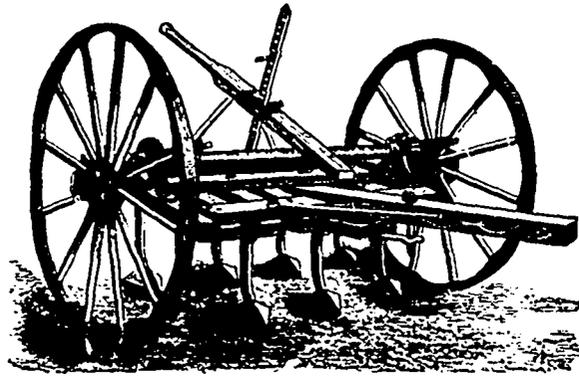


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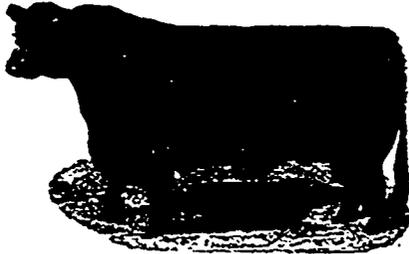
I HAVE still on hand and for sale an excellent lot of imported Bulls, Heifers and young Cows, besides an exceedingly good lot of home-bred Heifers and Bulls—all by imported sires and mostly from imported dams.

I can supply intending exhibitors with first-class show animals of either sex and of various ages, from calves upwards.

I have also a good lot of imported CLYDESDALE STALLIONS and MARKS for sale.

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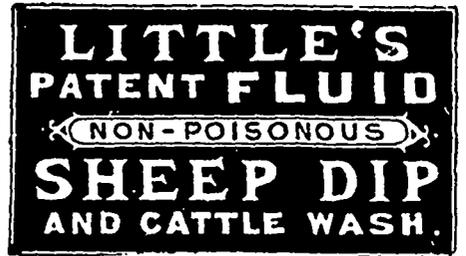


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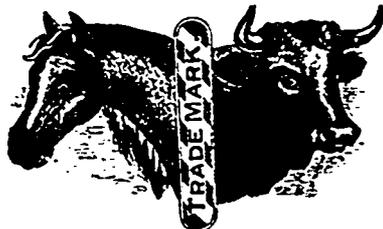
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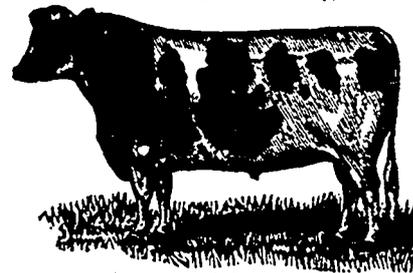
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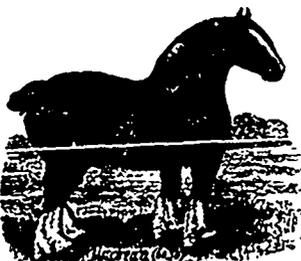
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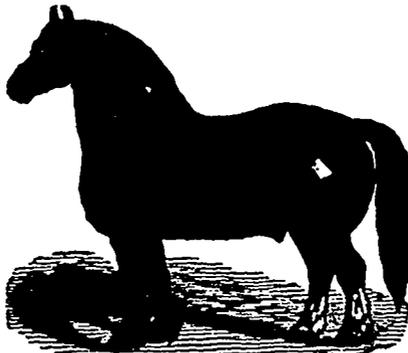
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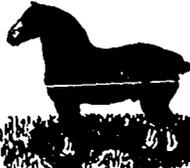
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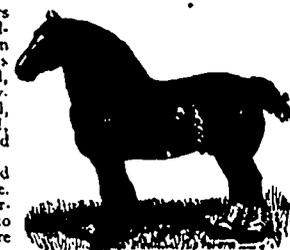
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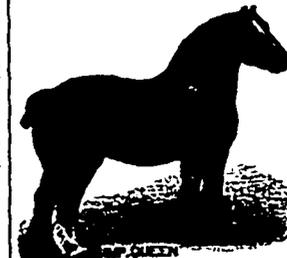
consisting of 1st, 2nd and 3rd prize winners at Provincial Exhibition, at Kingston, 1888, as well as winners at big shows in Scotland. Every stallion but one prize winners at leading shows both in Canada and Scotland, and from such noted sires as Lord Erskine, Cairnbrogie Kier, Good Hope (by Darnley), Crown Jewel and others.

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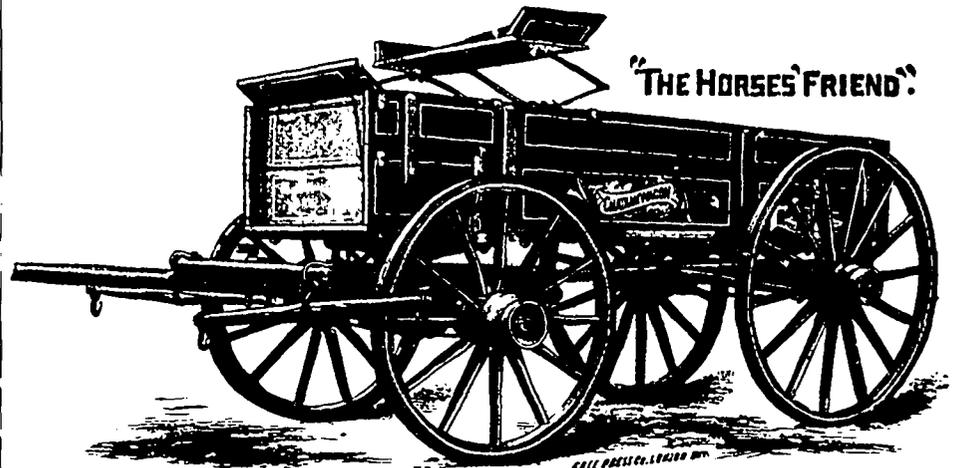
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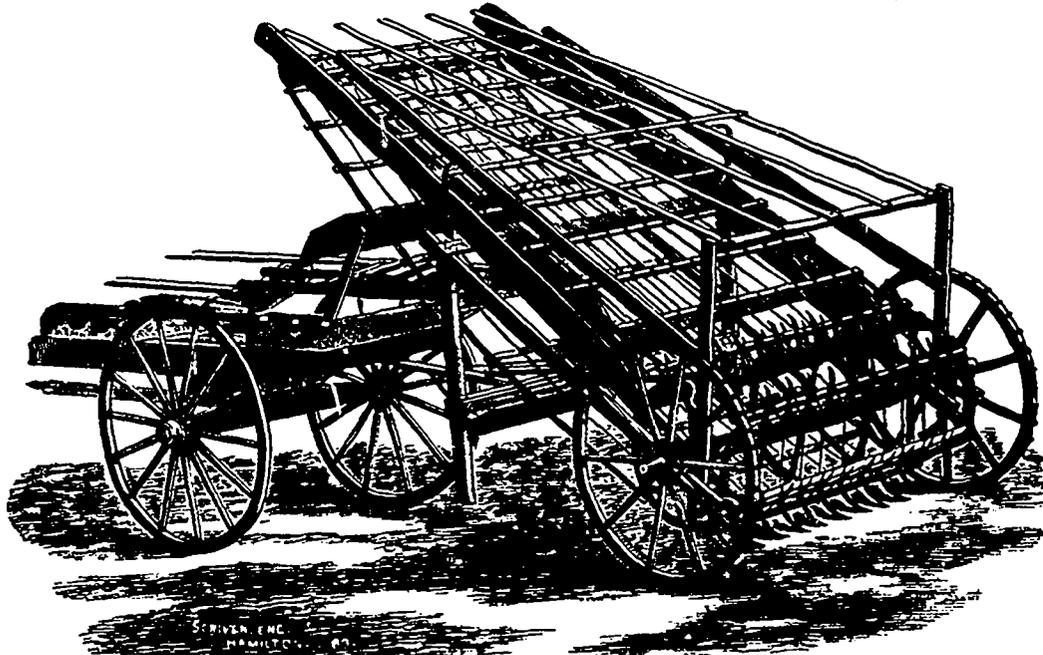
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- A. & J. BELL**, Athelstone P. O., P. Q., importers and breeders of recorded Clydesdale horses, Ayrshire cattle, Cotswold sheep and Berkshire pigs. Stock for sale. 77
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- WM. CRAWFORD**, Upper Springs Farm, Malvern, Ont., breeder of registered Clyde horses, pure pedigreed Ayrshire cattle and Cotswold sheep. 73
- GEO. E. DYER & SON**, Highland Farm, Sutton, Que., breeders of Clydesdale horses and Berkshire pigs. Stock always on hand for sale. 68

- THOS. GOOD**, Richmond P. O., Ont., importer and breeder of Registered Clydesdale Horses, Shorthorn cattle, Cotswold and Southdown Sheep. Stock for sale. 76
- JOHN L. HOWARD**, Sutton West, Ont., breeder of registered Clydesdales and pure Shorthorn cattle. 7
- W. H. HUTCHINSON**, Napanee, Ont., importer of registered Shire, Cleveland Bay and Yorkshire Coach horses. Stock for sale.

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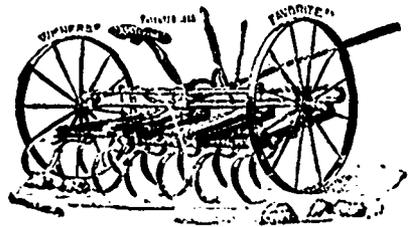
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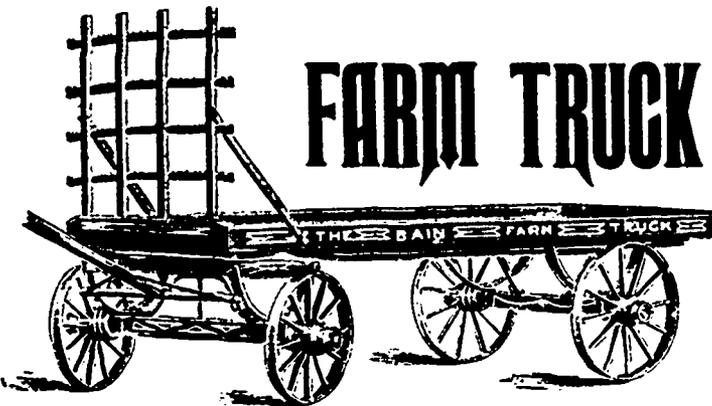
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