

able enlargement of the superficial groups of lymphatic glands (supra-mammary excluded), and only some six or seven cows were in such poor condition as to be open on that ground to suspicion of tuberculosis. About fifty cows were the subjects of inflammation of the udder, or gave evidence of having suffered from that some time previously. In the majority of these cases, the history and the physical characters of the inflamed gland were regarded as sufficient to indicate that the disease was not tuberculosis. The small proportion of cases discovered in this inspection cannot, however, be accepted as evidence that these cows were healthy; but having regard to the 20 per cent. of tuberculosis found (as above mentioned) in the Edinburgh dairies when the extensive slaughter for pleuro-pneumonia was made, it merely testifies to the inefficiency of clinical examination in discovering tuberculosis in its early stages.

Although not absolutely certain, tuberculin presents the most successful method of diagnosing tuberculosis in its early stages in cattle. Some what varying opinions as to its value are expressed by continental experimenters. Professor M'Fadyen obtained permission to try its effects on seventy-five animals, chiefly cows, most of them having been condemned for slaughter in 1891-92 on account of having been in contact with pleuro-pneumonia. Only in three or four of these animals, it is stated, could any known physical, clinical, or bacteriological examination have detected tuberculosis. The temperature was taken morning and evening, and on the subsequent day, when doses of .25 to .33 centimeters of tuberculin were injected, and the animals were killed next day, or shortly thereafter, and the carcasses carefully examined. Taking a rise of temperature from the normal to 103° or over as evidence of tuberculosis, the tuberculin gave a right indication in fifty-one, and a wrong in twenty-four cases. The Professor thus states his conclusions:—"I have no hesitation in saying that, taking full account of its imperfections, tuberculin is the most valuable means of diagnosis in tuberculosis that we possess. The discovery of tubercle bacilli is, of course, the only means of arriving at a positively certain diagnosis; but that means, for reasons already set forth, has an exceedingly restricted sphere of application in veterinary practice. Without tuberculin, even the sharpest and most experienced practitioner is powerless to detect tuberculosis in its early stages; with it he will find it possible to detect the majority of cases, even when the lesions are very slight. It is probable that by using the tuberculin test twice, with an interval of some days between the injections, the proportion of errors in diagnosis would be very small.

"Intimately connected with the diagnosis of tuberculosis is the danger of infection through ordinary milk, concerning which the Journal presents a contribution by Veterinary Surgeon St. Friis, Copenhagen. He states that it is firmly established that the milk of cows affected with udder tuberculosis must in all cases be considered infectious, since it always contains tubercle bacilli. It has further been found that not only is the milk infectious in the tuberculous quarter of an udder, but also the milk from the apparently healthy quarters of a cow affected with mammary tuberculosis may contain tubercle bacilli. Lastly, it has been certainly proved by a number of cases that the milk of cows suffering from a more or less advanced tuberculosis may be infectious, but to a much smaller degree."

"In order to determine whether the ordinary milk of Copenhagen was affected with tubercle, samples were bought several times a week from retail dealers. Five to ten centimeters from forty-six samples, yielded from forty-four herds, comprising ten to eighty cows, were inoculated into the peritoneum of eighty-four rabbits and four guinea pigs. Before reaching the Professor's laboratory, some samples had been contaminated with septic bacteria from the hands of the milkers or imperfectly cleansed vessels, and fatal septicaemia killed thirty-seven of the rabbits and the four guinea pigs in two to four days. Such milk might not have been injurious when swallowed, but septic bacteria are not a very safe addition to the food, especially of infants. The forty-seven surviving rabbits were killed in forty-two to fifty-four days, and six of them inoculated with four of the samples of milk showed characteristic tuberculosis lesions. The four herds which yielded the impugned milk were forthwith examined, and in all were found one or more animals exhibiting unmistakable tuberculosis. The worst cases, moreover, were discovered in those herds which had furnished the milk producing in the rabbits the most extensive lesions and the most numerous tubercle bacilli. St. Friis urges that this inoculation of rabbits, which for such experiments he prefers to guinea pigs, should be adopted by owners or sanitary authorities, as a means of testing the freedom of milk from tuberculous infection. By sub-dividing the herd into lots of three or four, and testing the mixed milk, the process would be simplified, for such dilution does not seriously impair the action of the bacilli. The milk of any suspected subject would be inoculated separately. In the event of the disease being thus detected, affected animals should be summarily got rid of, the premises cleansed and disinfected, the herd at intervals of ten to fourteen days professionally examined, and the rabbit inoculation test repeated."

Mr. W. S. Hawkshaw's Shropshires.

One of our staff visited the flock of Mr. W. S. Hawkshaw, Glanworth, Ont., and was shown an exceedingly fine flock of Shropshires, consisting of one hundred and twenty yearling ewes, all of which are in lamb. Fifty were sired in England, the remainder are in lamb by the imported stock now on the farm, which is a sheep of excellent quality both in carcass and fleece. The entire flock, both rams and ewes, are imported, selected in person by Mr. Hawkshaw from the best English flocks, the majority being descended from the flocks of Bowen Jones, T. S. Minton, Wm. Mansell, Wm. Thomas, and Mr. Harding. The fifty ewes which were served in England are in lamb to a sheep bred by Mr. J. Bowen Jones. He is closely related to the ram which Mr. Thomas paid Mr. Jones \$1,000 for, and is of equal quality, both of fleece and form, but is not as large. The ewes, all yearlings, are a splendid lot, their average weight being over 150 lbs., not at all in high condition. Their constitution and form are excellent, and they are well covered with fleece of good quality. They are very even throughout, no poor ones among them. They are due to lamb in March, which will insure an excellent development of young stock for the summer and autumn trade. There are no grade sheep on the farm; in fact all are imported Shropshires of superior quality.

Mr. Hawkshaw's sales last year were very heavy. All his ewe lambs are sold, and he is only wintering three ram lambs. During the last three years he has imported nearly three hundred sheep, and has made it a rule never to buy a poor one. The latest importation, which was made last autumn, consists of one hundred and fifty, all ewes but one, not a single cull among them.

Mr. Hawkshaw is a capital judge and a good buyer. We know he is an honorable, capable man, and bespeak for him liberal patronage, for we know he will deal fairly with all who buy from him.

Studs, Herds and Flocks.

MR. CHAS. CALDER'S SHORTHORNS.

In this issue Mr. Chas. Calder, Brooklin, Ont., advertises Shorthorn bulls for sale, also Shropshires of both sexes. Mr. Calder's herd of Shorthorns was founded about twenty-five years ago by the purchase from Mr. John Miller, Brougham, Ont., of a heifer; from this animal has descended a large, useful herd. The bulls used ever since this purchase, and for many years before, have been pure Shorthorns of good families; individually, each has been of the strong, vigorous, thick-fleshed type. For the last twelve or fifteen years imported Cruickshank bulls have been used. From 1885 until 1892 Victor Royal =2750= was principally used. This bull was bred by E. Cruickshank, Lethenty, Aberdeen, Scotland; he was a tremendously large, thick-fleshed, rugged bull of the Victoria family. He is the sire of a lot of useful cows and heifers now in the herd. The stock bull at present was bought from Mr. A. Johnston, and is of extra quality. Taken as a whole the herd is a useful one; the animals have never been highly fed. The bulls offered are six in number, varying in age from ten to sixteen months; three of them are excellent quality, large, thick-fleshed and vigorous. Mr. Calder also owns a fine flock of Shropshires; each animal in the flock is either imported or bred directly from imported stock.

INGLESIDE SHORTHORNS.

Mr. D. D. Wilson, of Seaforth, whose farm is within one mile of his town office, has recently dipped quite deeply into importing and breeding Shorthorns.

Many of our readers will remember the two excellent bulls, bred by Mr. Duthie, Collynie, which were included in the importation Mr. Wilson made two years ago, and which succeeded in carrying second and third in an exceedingly strong ring of yearlings at Toronto in 1892. Doubtless the success of his first instalment has encouraged him to make the still more extensive importation in 1893.

Ingleside Farm, the seat of Mr. Wilson's breeding operations, as before intimated, is close to Seaforth. The soil is naturally productive. The draining and good cultivation, and extensive cattle feeding, have made this one of the most productive farms to be seen anywhere. While too many farmers are lamenting upon the shortage of last season's crops and scarcity of feeding material, Ingleside has enough and to spare. Turnips had yielded bountifully, the roots were both large and of good quality. This crop, we were informed, yielded over 800 bushels to the acre, while the ensilage was one of the best samples we have yet seen. The corn crop had been extremely heavy, and the quantity of ears to be seen in the ensilage showed that it had eared well, and the crop was well matured. The sort sown was Essex Dent (Acclimated Dent, as it is known in some localities). Mr. Wilson appears to be highly impressed with the good qualities of this sort, both as regards weight of fodder and the quantity of ears it produces, and to judge by that we saw he is right, for we have only once seen as good a sample. Mr. Wilson's foreman was of the opinion that, if anything, the corn was too mature when cut, as there were traces of mould in one or two places, which he attributed to its not heating quickly enough after putting in the silo. This silage had been cut quite short, and such a mass of succulent rich feeding stuff we have seldom seen; in the cut ears there was only the slightest trace of acidity, while the fragrant aroma

was sufficiently appetizing to tempt the palates of the newly imported Shorthorns, which showed their appreciation, Oliver Twist like, by asking for more.

With such a quantity and choice of feed, cattle feeding is being pushed, and the available space in the extensive buildings is taxed to the utmost to find room for all occupants, for beside the Shorthorn herd there are steers purchased, steers that have been bred on the farm before the Shorthorns were introduced, and steers, the get of the two excellent bulls before mentioned; and here an object lesson is pictured in early maturity, as Mr. Wilson had already sold one of the steer calves shown at Guelph for \$50, which is more than any of the two-year-old steers in his barn are worth to-day.

But we must hasten to speak of the Shorthorns, and here Prime Minister deserves first mention, for he is not only a choicely bred bull, but his winnings during the last two show seasons testify to his individual merit. His dam is of the noted Upper Mill Lady family, which has furnished so many prize-winners for Ontario in past years. While the three top crosses contain the names of the most richly bred bulls, Prime Minister is sired by the Crocus Sittyton-bred bull Chesterfield, dam by the great bull Field Marshal, that has done so much to popularize Aberdeenshire Shorthorns in England, the third cross being Heir of Englishman, that made the name for the Upper Mill herd.

Prime Minister is a capital red with good coat of hair, he is a bull of wonderful substance and scale, carries an immense quantity of natural flesh, and is remarkably smoothly finished in his hind quarters, with well filled twist. And better than all, he has already proven himself a successful sire; his calves from all kinds of cows show great feeding adaptability. His stable companion, Defiance, was sired by the noted bull Gravesend, his dam being by Vermont, two of the best Sittyton breeding bulls of late years. Defiance was a successful show bull in his yearling form, but an accident which happened while unloading him during the show campaign disabled him for a time and threw him back. He has now recovered, and is as active and serviceable as ever; his calves are an excellent lot. Among these is a roan bull of thirteen months, from imported Early Bud, a cow of Mr. Wilson's first importation, sired by the Sittyton-bred bull Strongbow; this cow is particularly rich in Sittyton blood, and is one of the Kinnellar Rosebuds. Of the two reds, a bull calf by Defiance, out of Diamond 18th, of the Sittyton Lovely family, is very promising. He is a thick, smooth youngster, that some breeder will do well to place at the head of his herd. Yet another, and a right good one, is a red bull sired by Prime Minister, from Diamond 17th, also of the Sittyton Lovely family. This is a bull calf that, unless something goes far astray, should be heard from at future shows.

The recent importation includes six heifers and two bulls: four heifers, calved in 1892, from the Upper Mill herd, the two best belonging to Mr. Marr's celebrated Missie family; these are a red and a roan, and are very promising. The other two, although hardly as highly finished, are of that thick, fleshy type, uniting substance and quality, that has made the Aberdeenshire Shorthorns so popular among feeders. It looks just now as if Mr. Wilson is in luck, for all four of these heifers are in calf to Mr. Duthie's yearling bull Pride of the Morning, that was champion at Aberdeen show last summer. A beautiful pair of heifer calves are Spicy 14th and Rose of Antrim 4th, both bred by Mr. Duthie. The former belongs to the Sylph tribe, of which Sittyton has bred a goodly number, while the latter is superbly bred, her top crosses running through a string of the most noted Sittyton bulls, such as would satisfy the most ardent seeker after Cruickshank blood.

One of the newly imported bulls is Royal Sailor, bred by W. S. Marr; he was sired by the Sittyton bull Sea King, running through a list of the most illustrious sires used at Upper Mill. Royal Sailor is a grand young bull, he possesses wonderful substance and is very smoothly finished, and looks as though he would make a bull of immense scale; such ribs, loin and quarters are seldom seen.

Rantin Robin, calved November, 1892, was bred by Mr. Duthie. He belongs to the Mary Ann of Lancaster sort, that has furnished so many good ones. The four top crosses are Roan Robin, Field Marshal, Achilles, Revenue, all of the best and most noted bulls bred and used at Sittyton. Rantin Robin is a bull of great length and depth, wonderfully smooth, level quarters, uniting substance, quality and high finish in the most prominent degree, but our readers must wait until they see him, as he is difficult to describe. We hope to give a fuller description of several of the individuals in this herd later on, and those who may find it convenient to pay Ingleside a visit, we promise them a rich treat.

A Profitable Crop.

Mr. John McMillan, Weston, Ont., sold George Keith, Esq., Toronto, \$1,365 worth of Alsike clover seed, and retained seven bushels for his own use, making a total value of \$1,420 from a crop of thirty-two acres. The total export from Toronto this season up to date has been about twelve thousand bags, an average of about \$30.00 per bag, making a total of about \$360,000. Mr. Keith's sales have been principally in Great Britain and Germany.