

require the secretary of each agricultural society to publish in the local papers the name and class of each licensed stallion in his district.

I might add that the signs are propitious. The fact that the Hon. Mr. Duff was so courteous to the horsemen at Guelph, and that John Bright, Live Stock Commissioner, was heard to intimate that a substantial grant would be forthcoming from the Dominion Government, for the purchase of Canadian-bred stallions for use in the Dominion, are good omens, and much practical interest on the part of those at the head of the Departments of Agriculture will do much to overcome the unrest among farmers' sons, and induce them to remain on the farm. We further believe that these men are altogether too big to permit the expenditure of these public funds in any sectional or partisan way, but we would remind them that, at least in this respect, we walk by sight, not by faith, and by their fruits we shall know them. I hope to hear from others on this very important question.

Middlesex Co., Ont.

S. R. McVITTY.

Horsemen will read with interest the ideas of several stallion owners and horsebreeders in this issue. None, so far, seem to think the Act as now constituted to be of any particular benefit to horsemen. There are some good points in most of the letters, and from the experience of stallion owners a reasonably effective Act should be evolved during the next session of the Provincial Legislature.

LIVE STOCK.

Cur English Correspondence.

REARING CALVES FROM TUBERCULOUS COWS.

The Royal Agricultural Society of England has issued a report of the experiments carried out at Woburn for the purpose of demonstrating that by means of isolation it is possible to rear healthy stock from tuberculous parents. Arrangements were made with several owners to allow their calves to be submitted to the tuberculin test, and to place at the disposal of the committee any selected as being suitable until after they had calved. As soon as possible after the test had been carried out the selected reacting cows were sent to the Society's Experimental Farm at Woburn and kept there until they had calved and cleansed, after which they were returned to their owners. The only real difficulty in the demonstration arose from the risk that the calves might become infected after birth, and the problem was to prevent the access of tubercle bacilli to them. In nature these bacilli come from one source, viz., animals or human beings affected with tuberculosis, and as regards the bacilli which cause the disease in cattle, the human source may, for all practical purposes, be left out of account. The arrangements had, therefore, to aim at making it impossible for tubercle bacilli to reach the calves, either directly or indirectly, from tuberculous animals, and especially from animals of their own species. The most immediate risk obviously was that the calf might become infected from its mother. To guard against this, each cow at the time of calving, was tied up, and as soon as the calf was born, it was carried into a building, that had not previously been used for cattle and rubbed dry. As soon as possible thereafter it was removed by cart to the calf-rearing premises, a mile distant. Further, the man in charge of the calves was kept entirely for this work, and had no contact with the other cattle.

As the calf houses here had been to a large extent reconstructed, provided with a new floor, cleansed, disinfected, and whitewashed, it was permissible to assume that there was little or no risk that the calves could become infected by bacilli remaining over from the previous tenancy. The milk on which the calves were fed was obtained from a farm in the neighborhood, and before used it was raised to a temperature of not less than 190 degrees by immersing the vessels containing the milk in water which was kept boiling in the copper. Assurance was thus obtained that any bacilli which might have been brought from the cows at the neighboring farm had been killed. When the milk diet was stopped, the calves were kept on two fields which were reserved exclusively for their use, and they were never allowed to come in contact with other animals with the exception of the bull which was put with them to serve the heifers in September, 1912. This bull had passed the tuberculin test before he was brought to the place, and after arrival, he was again tested, with the same result. Inasmuch as no evidence of tuberculosis was found in any of the animals after they were slaughtered, these experiments may be held to have demonstrated "that by means of isolation it is possible to use healthy stock from tuberculous parents." It is true that this involves the assumption that a distinct reaction to tuberculin may in

practice be accepted as proof that the reacting animals are tuberculous, for the cows which gave birth to the calves were not submitted to post-mortem examination.

G. T. BURROWS.

Feeding Pregnant Ewes.

A United States bulletin recently issued gives some good practical advice on feeding breeding ewes during the period of gestation. The author believes that turnips, rutabagas, and swedes are the most desirable roots for breeding ewes, mangels and sugar beets being undesirable before lambing. Frozen roots should not be fed, as it is claimed that they will cause abortion. Frozen or acid silage should never be fed to ewes or any other class of sheep. Silage of good quality, however, is very desirable. Too large a supply of succulence should not be given ewes before lambing, or weak, unhealthy lambs may be the result.

Oats and bran are as good concentrates as can be secured. Corn alone is too fattening. Whether or not the ewes require grain throughout the entire winter, and the amount they will need, depends largely upon their condition and the kind of roughage and succulence fed. Where abundant green forage is available throughout the year, practically no grain is fed before lambing. But under average conditions succulent forage of this nature is unavailable, and a little grain should be fed, beginning several weeks before lambing, to stimulate the milk flow. An average ewe's daily ration during pregnancy would be about as follows: Two to three pounds of hay, two pounds of roots and silage, and one-half to one pound of grain. Usually one-half pound grain is enough before lambing if the ewes enter their winter quarters in good condition.



Some Hardy Stock.

Turning the ewes out after they have eaten their morning feed for water and for a light feed of corn fodder or some similar feed is a good plan when the weather is not too severe. This gives them plenty of exercise and allows the troughs and racks to be readily cleaned out. Clovers, etc., are the most desirable roughage, and the evening feed placed in them. Alfalfa, Succulence in the form of silage or roots is essential for the best results, as experiments have shown that ewes receiving such feeds produce stronger lambs and have a larger milk flow. Thousands of breeding ewes have died in this country of "blind staggers" brought on by feeding timothy hay without succulence. This particular kind of hay causes constipation and is very undesirable for sheep.

Dr. D. L. McCrae, pastor Hamilton Road Presbyterian Church, London, writes: The Christmas Number of "The Farmer's Advocate and Home Magazine" is a work of art that reflects the highest credit on the editors and publishers. As an old newspaper man I am greatly delighted both with the letterpress and illustrations. The paper is, in every way, worthy of its constituency in variety of appeal and in quality. The article on the Bible in relation to agriculture, which you have given the first place, is unique, and well deserves its place. I have read nothing finer on the subject. It should be put in permanent form and circulated in tens of thousands all over Canada by the Social Service organizations that are dealing with the rural problem.

The Real Pig Profits.

Editor "The Farmer's Advocate":

In your issue of Dec. 18th there appears a letter entitled "Pigs that Paid" that reminds me very much of some of the immigration literature, all quite true, but exceedingly misleading nevertheless. In these days of high cost of living, when the harassed consumer is searching the earth for a scapegoat on which to saddle his woes, it does not seem wise to let a statement of this kind pass without pointing out some of its most glaring mistakes. Judging from the concluding paragraph, we may suppose that Mr. Campbell believes that he made a profit of \$11.68 per head, so we cannot blame our city cousins if, when they read the account, they immediately conclude that the farmer is getting a good deal more than he is entitled to, and that he is at least on the high road to wealth. But the writer has entirely forgotten to state where or how he obtained these 15 pigs in the first place. If he—I was going to say stole them, but will say—had them given to him, then he might perhaps claim a good deal of the amount he has figured as profit, but the most of us have either to buy or raise our pigs, before we begin to feed them. In this district they would have cost anywhere from \$4 to \$4.50 per head, but say \$4.25, that makes \$63.75 for the pigs at six weeks old, before the feeding period started at all. The other alternative, raising them himself would of course, have reduced their first cost, but I contend that any profit that is made on the raising period of a pig's life should rightly be credited to the sow. It is not business to run one department at a loss, or even at cost, in order to show an abnormal profit in some other. It is probable that \$2 to \$2.50 per head is about the cost of raising young pigs, but outside of this there is interest or value of sows, and some provision for risks; occasionally a sow dies, or loses the whole litter. Then there is rent of buildings, etc., not much perhaps, but buildings have to be kept in repair, and there is nothing harder on them than brood sows; so that altogether I do not think that \$4.25 will leave any more than a fairly legitimate profit on the rest of raising a pig to six weeks old.

We will assume that these pigs weighed 25 pounds per head at six weeks, or 375 pounds for the lot. When sold, 13 weighed approximately 2,800 pounds, and two that died at 100 pounds each, would amount to 3,000 pounds, less 375, leaves 2,625 pounds net gain during the feeding period. It has been pretty conclusively proved that it takes 4½ pounds of mixed grain or its equivalent to make one pound of pork. Mr. Campbell accounts for 8,288 pounds (I take 1,900 pounds of shorts, as that is the amount accounted for, though statement says 2,900 pounds—a misprint), leaving 3,524 pounds to be accounted for in some other way. Undoubtedly pasture would be the cheapest way of furnishing this additional feed, but skim milk, or buttermilk, or whey, may any of them have played a part. The account says pigs "ran out," so probably they had considerable pasture; this should have been valued, as should any dairy by-product, if any were fed. Had the 3,524 pounds been fed as grain it would have added some \$35 to the cost; added to \$63.75 makes \$98.75, which deducted from \$151.95 leaves a net profit of \$53.20, or just over \$4 per head. This is only supposing, of course, that all grain had to be fed, and shows what the pigs might have cost had no green feed or other substitute for grain been available. The actual profits were probably somewhere between \$4 and \$6.80 per head. The latter figure if no value whatever is put on the pasture or other supplementary feed that the pigs received, and deducting only the first cost of the litters. I am sorry that we farmers are not as far on the road to wealth as this account would imply, but there is no use in blinding ourselves to the real facts. Mr. Campbell comes out well anyway.

ALFRED HUTCHINSON.

Wellington Co., Ont.