

ing, its wonderful evenness was a beautiful sight, and attracted many visitors. Sixty-one bushels of salable wheat per acre, from a field of eight acres, is another Notts record. A 20-acre field on Mr. Passmore's farm, in Sussex, has yielded 60 bushels to the acre. F. DEWHIRST.

Wisconsin Fights Tuberculosis.

An educational campaign against bovine tuberculosis has been conducted in Wisconsin for the last three years, by means of addresses, printed bulletins, and post-mortem demonstrations. The demonstrations have proved most convincing, and thousands of farmers have been led to apply the tuberculin test to their herds, after observing its accuracy, as shown by animals killed at the demonstrations. At points in the State where such demonstrations have been held, the demand for tuberculin testing has been greatest.

The tuberculin test has been applied under the direction of the Agricultural Experiment Station, the State Veterinarian representing the State Live-stock Sanitary Board, and by co-operative organizations of farmers in certain localities. Since tuberculin testing was begun, in 1892, a total of 72,638 animals have been tested, 46,121 by the Experiment Station, and 26,517 by the State Veterinarian. The increase in number of tests made has been most rapid during the last two years, as in 1908 the Experiment Station made 27,202 tests, and the State Veterinarian 13,791—a total of 40,993. The State has paid to owners two-thirds the appraised value of reacting animals and has received in return whatever was received for the carcasses of these animals passed by Federal inspectors.

The extent of infection is indicated by the tests that have been made, although they do not represent average conditions, since the more-seriously-infected herds were naturally tested first. There has been a decline in the per cent. of animals reacting, from 1.7 in 1906, to 5.6 in 1908. The serious phase of the situation is the comparatively large number of herds infected. In 1906, about 48 per cent., or almost half of the herds, were infected; while, in 1908, about 24 per cent., or less than one-fourth, contained the disease. In 1906, about 12 per cent. of the animals were infected, and in 1908, less than four per cent. This indicates that the disease is present in a great many herds, although it has not spread in each herd to any great extent. The evidence collected shows that the most common mode of herd infection is through the purchase of infected animals. Of 363 herds found infected in 1908, 263, or over 72 per cent., were infected through purchase.

It is much more prevalent in the southern part of the State. In the southern third, over 43 per cent. of the herds are infected, while less than 18 per cent. in the northern two-thirds of the State have the disease. In the south, over ten per cent. of the animals are infected, while in the north only about three per cent. are infected.

Immediate action is needed to stop the further spread of the disease. Bovine tuberculosis has just begun to get a foothold in the new northern sections, and steps must be taken at once if it is to be kept out. A law requiring a clean bill of health to go with each sale is badly needed, as well as a law requiring the pasteurization of factory by-products. No district where the production of breeding animals is important can afford to neglect to take up this matter at once. By testing the herd and removing the infected animals at once, and then buying only tested animals, the herds can be kept free from the disease. —(State Experiment Station bulletin, by Russell and Hoffmann.)

Danes Buying Canadian Bran.

An order was placed with a Winnipeg milling company recently for 4,000 sacks of bran, to be shipped to Bremen for trans-shipment to Denmark. The bran was purchased at the Winnipeg wholesale price of \$20 per ton, and will be sold to dairymen in the interior of Denmark for feeding to dairy cows. It would appear as though the Danish farmer would have to pay a pretty stiff price for his cow feed, but he must be able to make profit turning Canadian bran into Danish butter, and selling the butter in Britain in competition with the Canadian product.

China sits quite a figure in the hide trade of the world. Her exports to the United States and Great Britain of cow hides and buffalo hides in 1908, according to report of Canadian Trade Commissioner J. B. Jackson, Shanghai, was 31,871-720 pounds, for which she received \$1,118,997 in gold. There were also 5,915,448 undressed goat skins exported, for which was paid \$1,843,948 in gold.

THE FARM.

Land and Crops.

In a long-settled country, people are, of necessity, less prodigal of the soil and its resources than in a country where land is still abundant. Its powers and possibilities of production become more and more an important economic factor as the numbers of the citizens increase. Not only do business interests demand intelligent management of the soil, but, indeed, the well-being and comfort of all the people depends in a very large measure upon its productivity. It furnishes their livelihood, and is the fundamental source, not only of their prosperity, but of their existence itself. We may think that through importation a nation may supply its needs, and through manufacturing reach its way to wealth. Not so; the well-to-do classes for a time may afford to purchase where they will, but the working people, who form a large proportion of a country's population, come nearer to nature in their dependence upon mother earth, and upon the well-being of these is built the success of the interests which give direction to the commerce, trade and progress of the country. Of such is my faith in agriculture, and for such reason may we not have faith in the development of our own land? And does it not remain a fact that all efforts that lead to the improvement of conditions in the country, whether through industrial training, or through increasing the productivity of the farm, or through education, serve but to assure and make more stable its future success?

With these thoughts in mind, I want to write briefly of soil and crop management in England. The intensive methods followed there have been forced upon the people by a crowded population. I found them interesting and suggestive, and they may serve to illustrate the lines along which a country proceeds in its development. It may be said that the farms are worked under three main divisions: grass land, corn land, and root land (the word corn is used in its English sense, and is meant to include our ordinary grains, as wheat, barley and oats). The grass land may or may not be held under cultivation. At least a large part of it is under permanent meadow, which may have been laid down to grass for twenty, thirty, or even a hundred years. The management of this land is a subject of distinct interest and of special study amongst the farmers, since pastures are of much importance in the returns they make in meat and milk, and grazing lands are an indispensable feature of English agriculture. It must not be thought that the poorer soil alone is given up to pasture. Of course, this is frequently the case, but much of the very best land in the country is laid down to grass. A moist, temperate climate, together with an abundant rainfall, and a deep, rich, warm soil, form ideal conditions for growth, and if meadows receive even ordinary attention, they continue fresh and green throughout the season. Cattle and sheep remain on the land much longer than in our country, and many of them are not housed at all in our sense of the term, so that pastures are in requisition practically all the time, and it will be seen, therefore, how much dependence is placed on them to supply forage for the stock.

I may repeat that those pasture lands receive a good deal of attention from the farmers. Some

of the permanent meadows are frequently used to grow a crop of hay. In the spring they are first pastured for two or three weeks. When the animals are taken off, a chain-harrow may be run over the fields to stir the surface a little and break up the lumps of manure. It is then left for hay. Such land will often average about two tons per acre. After the crop is cut, an aftermath grows very quickly, and cattle and sheep are given the run of the fields later on. Besides the droppings of the stock, these lands are frequently dressed with artificial manures. One farmer, who had been very successful with his grass land, gave me the following mixture as one that had suited his purpose: He used equal parts of bone meal, superphosphate and kainite, and manured at the rate of four hundred pounds per acre of the mixture. The bone meal cost him £6, and the super and kainite £2 12s. each per ton. An occasional such dressing, or one of basic slag alone, I learned, rejuvenated old meadows and made them produce profitably. Further, under careful management, although heavily stocked, they are not allowed to be eaten down too closely. To put it in a word, there is as much careful management in the care of the grass lands as in any other phase of the farm operations, and in passing I should say that much of the success of the British stock-breeder and feeder lies in the quality and abundance of his pasture.

The grasses grown differ somewhat from those we use in Canada. On the farm I mentioned, timothy and rye grass were grown together, sown at the rate of 20 pounds timothy, and one-half bushel rye grass, per acre. But this, of course, was for meadow, and not for permanent pasture. Red clover and Italian rye grass are also grown much together; sometimes all three are mixed, but these grasses are only depended upon when the land is to be broken up again in three or four years. In permanent pastures, a large number of the grasses and clovers are usually grown. Red, alsike and white clovers are used to about a fifth of the mixture, rye grass (perennial or Italian) and timothy to about another fifth, and orchard grass, meadow fescue and meadow foxtail form the remaining three-fifths. I believe that orchard grass and meadow foxtail are thought quite a good deal of in England, for they appeared to be distributed rather widely.

Rotations are not lived up to very closely, but there seems to be a sort of three-crop rotation—hoed crop follows meadow, and the corn crop follows roots. Wheat, however, may be sown between meadow and roots, as in the Rothamstead rotation, where we have clover and beans, then wheat, then swedes, and then barley. Meadow land interferes with any definite rotation. It seemed to be the rule not to break up sod when it was yielding a really good and satisfactory return. However, one could not but observe that judgment was used in alternating the crops, and in the introduction of hoed and leguminous crops. Of such there are, besides the common clovers, sainfoin, lucerne (grown much in the south of England), peas, beans, and vetches. Excepting peas and beans, these are chiefly used as forage crops, and fed off on the land. I hope to have more to say of them in another article.

The land is plowed out of meadow usually in late winter or early spring. The ground is harrowed until the surface is fine, and the attempt is made to have a firm seed-bed. In parts of the country they have a particular instrument for this



Shorthorns on Pasture.