

STOCK.

Our Scottish Letter.

At present, considerable interest is being taken here in educational matters. We have not got the length of Professor Robertson's idea of training head, hand and heart, but in purpose we are getting on. Two years ago, Parliament passed an Educational Bill for England, and has got the Government into a bit of a mess by so doing. But there is a good deal of the bulldog in the present Government, and it holds on to office with commendable tenacity. A bill has now been introduced to increase and extend education in Scotland, and so far its leading provisions have been received with remarkable unanimity. Somehow Scotsmen understand education, and there is a traditional ambition in the Scots race to be educated. This, doubtless, renders the task of statesmen easier than it is in England. Agricultural education chiefly concerns us here. For many years it was hard to get anyone to listen seriously when you discoursed on the outstanding merits of technical education in agriculture. Now times have changed. Everybody is a zealot in the cause. Glasgow Agricultural College was first got under way, the Edinburgh and East of Scotland followed, and at present the authorities in the north are busy organizing the Northern College. This will not be quite a simple task. The geographical difficulties are considerable, and it is possible that some novel steps will require to be taken in order to make the work of the college in the far northern counties all that it ought to be. The cheering fact is that such colleges will soon be in full working order all over Scotland. One difficulty which most of the colleges have to contend with is the absence of sufficient experimental ground. This is a difficulty which does not trouble you. With the illimitable prairie to draw upon, you can never be in want of land. Here it is dear, because scarce. You can't get outside the four seas, and that fact explains much in the economical situation in Great Britain.

The fiscal racket is meanwhile stilled. Whatever be the ultimate issue, there can be little doubt that the proposals of Mr. Chamberlain are, meanwhile, rather bold, and if adopted would lead to the disintegration of some trades. Farmers are becoming rather jealous of the results, and more of them are beginning to question whether Mr. Chamberlain's policy would do much for them. All the same, Mr. Chamberlain has appointed a commission to enquire into the whole question, and that commission is now hard at work. There is an agricultural sub-commission, on which two notable Scotsmen have been asked to act, viz.: Mr. J. M. Fraser, of Invermay, the well-known head of the great firm of Macdonald, Fraser & Co., Ltd., and Mr. James Biggar, the noted breeder and judge of Galloway cattle. What this commission is to do we cannot tell, but it will require to take very active steps if it means to carry the country. I believe the question should first have been approached by way of enquiry and not in the bold, uncompromising fashion identified with Mr. Chamberlain's scheme. On the other hand, it is urged, and there is a deal of truth in the point, that the question would never have made any impression if Mr. Chamberlain had not fairly carried the country by storm. The general feeling now is that the great industrial centers are not at all so enamored of the idea as they were at first. I expect it will be a long time before Mr. Chamberlain's proposals become law.

Ayrshires are in favor in Canada, and well they may be. They pay more rent in Scotland than any other breed. They have suffered a good deal in the hands of fancy stockmen, but they are now more universally in favor than they have been for very many years. Mr. Alexander Y. Allan, Croftjane, Thornhill, is not unknown to many Canadians as a successful breeder of Ayrshires. He has relinquished the holding of Croftjane, and recently his herd of Ayrshires was dispersed. He sold sixty-two head by public auction at an average price of £12 11s. 11d. each. The cows in this lot numbered 21, and these made an average of £15 6s. each. These figures indicate good enough business. Mr. Allan's herd was strong in commercial qualities. Its butter-fat standard was high, and at all times it could be depended on to produce either calves or milk to please the most fastidious. Another herd of much the same character is also in the market, and will soon be dispersed. It is that of Mr. John Steel, High Newton, Darvel, who, like so many other Ayrshire farmers, is seeking a home in Essex.

Most of the Scots farmers who went south have done uncommonly well. They have their own difficulties to contend with, but I question if even the least fortunate amongst them would come back to Scotland. Between scarcity of land, high rents, and an uncertain climate, agriculture is not an attractive pursuit in this country, hence the large number of young, able-bodied men who are leaving for the West. Canada is getting a large share of these emigrants, and I expect the C. P. R. will be taxed to the utmost in taking them to their destination.

An agitation has been commenced against the partiality displayed by the Irish Department of Agriculture in its selection of cattle breeds. It is alleged that only Shorthorns are really accepted and anore by the officials of the Board, and that other breeds, but in particular Aberdeen-Angus and Galloways, are systematically boycotted or ignored. That the majority of the average Irish farmers will prefer a Short-

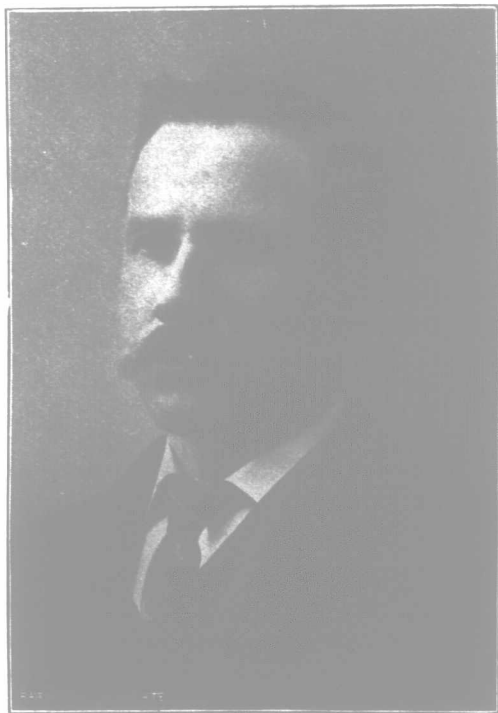
horn bull can hardly be denied, but it is one thing for breeders themselves to put in a claim for a bull of a particular breed, and an altogether different thing for a public department to put its imprimatur on one breed and ignore the rest. The sensible arrangement is for the Department to give the Irish farmer the best kind of bull wanted by him, no matter what be the breed to which it belongs. Undoubtedly, black polled calves in all markets sell better as "stockers" than any other sort. This is quite explicable, and even to the end of the chapter the black poiled crosses, in most cases, feed best. The point is that no salaried official of the Government should have the power to boycott any recognized known breed. The choice of breed should in every case be left to the breeders in a given locality. They know what they want, and no board administering public money has the right to say to which breed the bull wanted is to belong.

"SCOTLAND YET."

Inbreeding—Line Breeding.

A reader has asked us to explain the difference between inbreeding and line breeding, and the significance of each system.

Inbreeding, as the word implies, is the blending of consanguineous lines in the practice of breeding as opposed to the practice of mating unrelated animals. When inbreeding is persistently followed, it is commonly called in-and-inbreeding. The object of the practice is to secure and retain a fixity of type by eliminating from the parents all possible differences of character, color, etc., to insure by concentration of blood a greater degree of prepotency in the offspring, and to develop to a greater extent any peculiarity of form, function, or other characteristic. The value of inbreeding in the improvement of stock is easily realized by all, but many avoid it through fear of its results, for it is just as potent in fixing undesirable char-



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acteristics as in fixing the valuable ones. Some breeders also believe that degeneration naturally follows or is the result of inbreeding. Tests have demonstrated that continued close in-and-inbreeding first shows its injurious effects in impaired reproductive functions, and next in a decrease of mental power, so we may conclude that as long as these are not affected there is no injury from the practice, provided there has been exercised proper care in selection. But these remarks apply to in-and-inbreeding rather than to inbreeding, the first step in the more intensive practice, and which of itself when practiced but once cannot be said to initiate injurious consequences in the lower animals.

Line breeding, to put it simply, is just a modified form of in-and-inbreeding, or breeding within a few closely-related stock or families. It is followed for the same reason as inbreeding, but those who practice it try to avoid the physical decay supposed to be attendant upon more incestuous mating. An illustration of the practice would be to select a pair of animals and then to intermate their progeny, which after the third generation, if it were sufficiently numerous, could be bred without incestuous mating, but when bred would constitute line breeding. Some breeders have taken their own herds as a starting point, and considered all the offspring of any herd line-bred stock. Others would broaden the practice to include all stock that traced to a certain parentage, no matter how distant.

Improved Molasses Cattle Food.

By Frank T. Shutt, M. A., Chemist, Dominion Experimental Farms.

This newly introduced feeding stuff is made by the Dresden Sugar Company, Limited, Dresden, Ontario, and constitutes what may be termed a by-product in the manufacture of sugar from the sugar beet. It is prepared from two residues in the process—the exhausted beet pulp and the waste molasses. These, by the aid of heat and suitable machinery, are dried and mixed so that a dry, palatable fodder results.

As placed upon the market, it has the appearance of dry pulp chips or flakes, quite loose and without any of that stickiness generally noticeable in feeding stuffs containing molasses. We have analyzed in all during the past two months, five samples of this feed, and find that in certain particulars, e. g., sugar content, it is not characterized by uniformity of composition. This we believe to be due largely to the difficulty in keeping the proportion of molasses to the pulp constant during the drying and mixing, and it is quite possible that improvement in the process of manufacture may in the future overcome this drawback. The data of a sample taken after thoroughly mixing twenty bags (2,000 lbs.), and which we may consider, therefore, as fairly representative of the food, are as follows:

ANALYSIS.	
Moisture	4.36
Crude protein	8.28
Fat (ether extract)	.74
Carbohydrates	64.61
Fibre	16.36
Ash	5.65
100.00	
Aqueous extract dried at 212°F.	22.17
Ash in aqueous extract	1.31
Cane sugar	13.51
Glucose (reducing sugar)	2.05
Non-albuminoid nitrogenous substance.....	.84
Albuminoids	7.44

The element of chief value is undoubtedly the sugar, which in the animal economy acts as a source of energy and heat, and also contributes largely towards the formation of fat. Its ready solubility and the ease and rapidity with which it is digested and assimilated, place sugar before all other carbohydrates—starch, gum, etc.—for these purposes. Apart from their direct food value, the use of these molasses feeds appears to act beneficially in increasing the appetite, stimulating the digestion and keeping the animal in a thrifty condition.

As regards the flesh-forming constituents (protein), this feed is not sufficiently rich to supply all the animal's needs in milk or flesh production. It can, therefore, only be employed economically as a part of the ration and when used in conjunction with such foods as possess a comparatively high protein content. The exact position of such sugar foods in the classification of feeding stuffs cannot as yet be given. It will probably be found that these foods constitute a class by themselves, and are not strictly comparable either, on the one hand, with coarse fodders (roughage)—chiefly by reason of their high sugar content—or, on the other hand, with the concentrated milling products, principally by reason of their low protein content. Their comparative feeding value will undoubtedly depend largely on the foods associated with them in the ration and the proportions in which they are employed. This we know, however, that such foods as the one under discussion must be largely digestible; that though dry in the form as sold, they readily become succulent, and hence are of particular value when roots and ensilage are scarce; that they are palatable and wholesome, and that their sugar constitutes an element possessing very important functions in the maintenance and the fattening of the animals.

All Modern Conveniences.

We are well pleased with the weekly editions of the "Advocate." It certainly is an ideal farmer's paper. We are much interested in your articles on free rural mail delivery and farmers' telephone.

A daily stage passes our gate. We have a box at the road, and pay the mailman to carry our mail and groceries. We find a daily mail a great benefit. For instance, the newspaper comes in on the 11 a. m. train, and is dropped in our box by 1 p. m. The paper gives us the quotations for hogs, and how the market price will stand the following week. Wednesday is delivery day with us, and if market price is likely to drop we can take ours out that same afternoon. We now take daily papers, and find we use the mail oftener when it is so convenient.

We are also connected with a farmers' telephone line, which extends over twenty miles of country. We can connect with the Bell Co., order supplies sent up, or have a chat with our friends. G. A. HOGG.
Oxford Co., Ont.