

sheep. The starch, therefore, though the principal, is not the only ingredient of value.

The season for making starch is from September to April, say eight months, and the product of starch for these eight months appears to be 16 per cent. The quantity of starch not only differs in different varieties of potatoes, but also the nature of the soil, the mode of culture, as well as the season of the year. May, June, July and August appear worthless for making farina.

From Mr. Eastwood's communication we take the following extracts:

The potato is largely used in making starch, especially in France. This valuable tuber has frequently been the subject of chemical analysis. The following is an analysis of a red potato richer in starch than some other varieties, which usually contain from 5 to 8 or 9 per cent. of starchy fibre and only 9 to 15 or 18 per cent. of starch.

Starch and starchy fibre.....	30.469
Albumen, gluten, fat, gum, etc.....	.697
Phosphate of potash, silicates, soda, lime, &c.....	.815
Chloral of potassum, 176; free citric acid, 47.....	.223
Water.....	66.875

The produce of a crop of potatoes varies from 30 to 100 large bolls per acre. The price in Scotland does not vary so much—from 4s. to 6s. per boll being the extreme limits between cheap and dear prices. Taking 60 bolls as the medium produce and 5s. as the medium price, the gross return from an imperial acre is £15. A boll is 20 stones of 14 lbs to the stone. The average produce of an acre 16,800 lbs., or 280 bush. [An average three times that of the U. S. of America.]

In reply to enquiries relative to starch factories, Mr. Eastwood says of farina machinery: The best German machines are very elaborate and expensive. One to produce 30cwt of starch, say 3360 lbs., and grinding 10 tons (2240 lbs.) potatoes in twelve hours, would cost £611 10s 4d. This is the machine with sieves, grates, &c., complete, but not fixed, and without any driving power. The engine, boiler, valves, &c., would cost about £421 8s. 9d. I would think a site would be chosen where water would be available, which would be much more economical if properly gone about; and I think a much simpler machine may be constructed than the above by a Canadian or American.

How many lbs. of starch are made from a barrel of potatoes? (Bbl. weighs 180 lbs.) This depends upon the sort of potato grown. The quantity of starch (dry starch) is from 8 to 15 per cent. It is said that 60 lbs. potatoes will produce 9 lbs. starch, containing 15 per cent of moisture, which, as it is now sold, would command £16 per ton here. It can be sold here to the makers of British gum, who buy 500 tons at once. Small and middle-sized potatoes make more starch than large ones do.

Shorthorn Breeders' Association.

A large number of the prominent Shorthorn breeders of Ontario met at the Walker House, Toronto, June 5th. Their object was to form a Shorthorn Breeders' Association and take charge of the Herd Book. Mr. Dryden, M. P. P., of Brooklin, Ont., briefly addressed the meeting, pointing out the desirability of having an association composed of the breeders of Shorthorn cattle. One point strongly to be recommended for their adoption was that of a registration for Shorthorns outside of the Herd Book at present in the hands of the Agricultural and Arts Association. The book they had at present was of no value outside of Canada, and had no standing in the United States. There were even in Canada a number of breeders who did not recognize it. He thought it was now a necessity for the Shorthorn breeders to have a reliable record, and one that would be accepted in the United States. For this purpose it was necessary for the Shorthorn breeders to form an Association, and he would therefore move, seconded by Mr. Cowan, "1. That this meeting fully endorse the action taken in calling the breeders of Shorthorns together with a view of effecting an organization of the same. 2. That the object of such organization should be

the perpetuation of the Shorthorn cattle in their original purity. 3. In order to carry out the above it is advisable that the Association should superintend their registration, and that if possible the record should be published annually. 4. That in order to guard and perpetuate the purity of the blood of Shorthorn cattle, and to give the 'Herd Book' thus published a proper standing, it is desirable that the standard of entry should be fixed so as to be at least equal to that of the English or American 'Herd Books.'"

Mr. Dryden observed, before the motion was put to the meeting, that there had been long delays in getting out the Association Herd Book.

The above resolutions, after some debate, were passed. All present seemed to be of one mind concerning them. Each member recognized the fact that the present record, as conducted by the Board of Agriculture and Arts, was not meeting the requirements of the breeders or farmers, either in the way it is conducted or the standard at which it admits animals. Breeders all over the Province seem to recognize these facts.

The Secretary of the meeting, Mr. J. C. Snell, of Edmonton, Ont., read letters from several prominent gentlemen who were unable to attend, but who said they gave their hearty support to the present movement.

When the subject of fixing a standard was brought up for discussion, it was resolved that the standard for entry should be no lower than that of the English or American Herd Books, but this being a preliminary meeting, and considering the importance of the work, it was decided to choose a committee of well-known breeders to draft a constitution and by-laws, the same to be presented to the next general meeting of breeders for their approval.

It was moved by Mr. Gordon, seconded by Mr. Dryden, "That the names hereunder be a Committee to draft a constitution and by-laws for the Shorthorn Breeders' Association, and that the same be printed and circulated among Shorthorn breeders previous to the next meeting:—John Dryden, M. P. P.; Hon. H. M. Cochrane, Compton, Que.; W. Whitlaw, Guelph; J. I. Davidson, Balsam; John Clay, Brantford; John Millar, Brougham; Richard Gibson, Ilderton; James Hunter, Alma; J. C. Snell, Edmonton; J. L. Cowan, Galt; A. R. Gordon, Cooksville; W. G. Pettit, Burlington; S. White, M. P. P., Windsor." Carried.

Mr. Gordon moved, seconded by Mr. Green, "That it be an instruction to the Committee appointed this day to treat with the Agricultural and Arts Association as to giving the control of the Shorthorn Herd Book to this Association, and to report fully to the next meeting; also to prepare a standard to govern the recording of cattle in the proposed herd-book." Carried.

The general opinion of the meeting was that it would be unwise to have two herd-books. It was also resolved that five members of the Committee chosen to draft a constitution form a quorum.

Before the meeting adjourned, Mr. Whitlaw, of Guelph, said "he wished the meeting to take notice of the regulations requiring cattle-breeders to keep their stock at the Provincial and Toronto Exhibitions for nearly two weeks. He thought one week on exhibition should be considered quite sufficient. It was a heavy expense for exhibitors to remain for so many days with their stock."

Many of those present coincided with Mr. Whitlaw. The meeting then adjourned.

After the adjournment of the general meeting, the Committee appointed for the purpose of drafting a constitution and by-laws had a brief preliminary meeting. Mr. Dryden was moved to the chair and Mr. J. C. Snell appointed secretary.

After some discussion, it was decided that Messrs. Gordon, Snell and Dryden should be a sub-committee to draft the constitution and submit it to a meeting of the whole Committee to be held subject to their call, as early as possible in the present month. The Committee then adjourned.

We are very much pleased with this effort on the part of the Canadian breeders to form a Shorthorn Breeders' Association and take charge of the record. The Advocate has set forth the desirability of this step for some years. We need not tell our readers our reasons; all must be fully acquainted with them. It would have been better for the Shorthorn interest and for the country at large, if this Association had been formed years ago. Now that it is formed, it deserves the hearty co-operation of every Shorthorn breeder and farmer in the Province. All who have any interest in this variety of stock should by all means attend the next general meeting, which

will be held in Toronto as soon as the Committee have arranged suitable constitution and by-laws, notice of which will be given in due time. We were pleased with the tone of the last meeting. Those present seemed desirous of promoting the Shorthorn interest, even at a loss to themselves; all the transactions which took place were actuated by honorable principles. From what we know of those who are promoting it, we have strong hopes of the usefulness of this new society. The appointing of a recording secretary will be of the greatest importance. A strictly honorable man, who will energetically push the work, one who thoroughly understands the business allotted to him, should be secured. Mr. R. L. Denison, of Toronto, has claims on the breeders of the Province, having for the past twelve years been a faithful servant.

Prospects for Grain Growing in the Northwest.

The distance of Manitoba and the Northwest Territories from the seaboard has long retarded emigration to that country and its agricultural progress. Abundant crops of wheat could be grown, but there was no market for it, and consequently the land, inferior in fertility to none in the Old World or the New, has remained a hunting ground for Indians and half-breeds. There will now be quite a revolution in these matters. The freight of wheat from Winnipeg to Liverpool is calculated to be only 24c. per bushel, and this calculation is from high authority. The opinion of Capt. Murray, who is thoroughly acquainted with the question of transportation, says that when the railroad from Winnipeg to Fort William is completed the volume of exports will be much larger than we have any conception of, and vessels will be extensively engaged in carrying grain from that point to Montreal or Quebec, and the very fact that cheap transportation will thus be provided, will be an inducement for people to settle in the Northwest. The cost would stand thus:—Rail carriage from Winnipeg to Prince Arthur's Landing, estimated at 8c.; water carriage from Prince Arthur's Landing to Montreal, 5 cents; Montreal to Liverpool, 11c.—total, 24c. per bushel. Now wheat in Winnipeg is worth from 60c. to 70c.; the cost of shipment as above would be 24c., making the total cost of wheat 95c.

The Future of Barley.

I believe that a really temperate climate is best for the growth of barley, and there are few regions in America that can be called thoroughly temperate. I understand that some of the Western plains of the Rocky Mountains, towards the Pacific, and in the territories of Washington and Oregon, there may be districts which produce barley of very beautiful quality; and you know very well that Californian barley is highly prized in this country, although I have been informed on the best possible authority that the extract the brewer derives from it does not answer his expectations. Still the region in which this Californian barley is grown is comparatively small. Taking the vast area of the United States, I could see hardly any good samples of barley at all. This brings me to the question: What is the repeal of the malt tax going to do for us? In America, where they have a beer tax, they find there is nothing so cheap or good for the manufacture of beer as barley and hops. I believe that will be the result here; why should it not be so? If in America they have been trying all sorts of experiments—and you know what a cute and clever people they are—if there was a possibility of manufacturing a good description of beer from maize or sugar or anything else, they would do it. But they do not. They simply take barley—which, mind you, is very inferior to ours—and in the manufacture never adulterate it with sugar; and as to this question of adulteration, Mr. Gladstone said in all probability we should make beer from potatoes. I hope and believe that the same thing will follow here. There is also this extraordinary fact. They prefer the Canadian barley, which is grown in a temperate climate, to their own barley and they pay an import duty of 7½d. per bushel; whereas in a good many districts they could buy maize if that was an article from which they could extract beer at 1s. 6d. per bushel.—C. S. READ, [one of the Royal Commissioners upon Agriculture, and formerly M. P. for South Norfolk, England.]