

winter season. In the selection of the feeds to be fed, an effort was made to use such as are not looked upon as cash crops of the farm but more in the nature of by-products of low commercial value. Also to study the effect of these various rations upon the general thrift of the cows, in order to determine to what extent such feeds may be used, observations were made of birth weight and gains of offspring calved during the progress of the test. The corn plant in some form was used as the basal part of the rations fed.

In this connection it might be stated that the author's interpretation of maintaining a pregnant cow is to have her gain sufficiently to account for the growth of the foetus, which at birth weighs fifty to ninety pounds.

The cows used for the experiment were thirty Aberdeen Angus grades, obtained from one or two crosses of A-A blood on a Shorthorn grade foundation.

Silage (corn), shock corn, corn stover, clover hay and oat straw were the feeds used. As a result of the experiment the following conclusions were arrived at:

CONCLUSIONS.

1. It is assumed that the maintenance ration of a pregnant breeding cow should be regarded as the ration necessary to permit of sufficient gain in weight to account for the weight of the foetus.

2. Breeding cows of the beef type may be wintered without grain provided they are given all the corn stover and oat straw they will consume during the early part and supplemented with a small amount of clover hay during the latter part of the season. While the cows in lot 3 used in this test were so fed, and while they weighed 57.53 pounds more per head at the end than at the beginning of the test, this method is not recommended because the cows so fed lacked thrift at the end of the test.

3. The corn plant fed either in form of shock corn or silage supplemented with a limited amount of clover hay proved satisfactory rations for wintering beef breeding cows.

4. Although the rations fed the cows receiving silage were smaller than those given the ones receiving shock corn, the gains were larger.

5. Before calving the general condition of the cows in lots 1 and 2, the lots receiving silage and shock corn respectively, was about the same; however, those cows in lot 1 which gave birth to calves during the experiment showed more thrift than did those of lot 2 under like conditions.

6. The amounts of feed consumed in terms of the acreages involved in producing these feeds were as follows: Lot 1 (silage fed), 9528 acre; lot 2 (shock corn), 1,0388 acres; lot 3 (corn stover) 1,1402 acres.

7. A comparison of the three rations in terms of relative efficiency of the acreages involved by taking into consideration the money value of the grain grown on the acreages involved but not fed the cows is as follows: Lot 1, (silage), .3428 acre; lot 2, (shock corn), .3475; lot 3, (corn stover), .2046.

8. Figuring corn at 35 cents a bushel, clover hay \$8.00, shock corn \$5.59, corn stover \$2.25 and oat straw \$1.50 per ton, it cost 4.9 cents a day per head, or \$1.47 a month or \$6.873 for 140 days to maintain lot 1 (silage fed); \$.046 a day or \$1.390 a month or \$6.504 for 140 days to maintain lot 2 (shock corn fed); \$.031 a day or

\$9.37 a month, or \$4.374 for 140 days to maintain lot 3 (corn stover fed).

9. It cost 37 cents more to winter a cow fed silage for 140 days than it did one fed shock corn. However the cows fed silage, lot 1, gained 150.10 pounds while those in lot 2 gained but 106.19.

10. In this test it took approximately twice as much feed to maintain a cow when suckling a calf as it did during her pregnancy.

11. The average daily cost of keeping the cows that calved in lot 1 was 7.56 cents while the average in lot 2 was 6.84 cents. Before calving the average daily cost of keeping a cow in these lots was 5.8 cents and 5.5 cents, respectively.

12. The data with reference to the relative efficiency of rations fed lots 1 and 2 for the maintenance of cows and gains on calves after calving, are not based on a sufficient number of animals to eliminate individuality, hence should not be regarded as conclusive.

13. The cows in lot 1, (silage-fed) ate less oat straw than did either of the other two lots which may be accounted for by the fact that they were eating the whole of the corn plant. That is to say there was practically no waste.

14. Corn plant fed in the form of silage is more palatable than if fed in the form of shock corn, which may be the cause of its being more efficient for the maintenance of beef breeding cows.

15. The amount of feed required for maintenance is apparently less than that given in the German standards.

16. The experimental data presented will materially aid in a study of the practicability of raising calves and producing our own feeding cattle in the corn belt.—(Adapted from Bull. III., Ill. Stat.)

Champion of England and the Shorthorn.

Many a breeder of Shorthorns, old and young, in a small or large way has noted in their pedigrees the name of the greatest stock bull Scotland has ever known, to wit, the great roan bull Champion of England.

He was calved on the 29th of November, 1859, and was the son of Lancaster Comet (11663), out of Virtue, by Plantagenet (11906); and his retention as a stock bull marks a distinct epoch, not only in the history of the Sittyton herd, but in the history of Shorthorn cattle.

This remarkable animal, the foundation stone of the Scotch Shorthorn, has been described by one, than whom no man living is better qualified to speak regarding him, who says: "As to Champion of England, unlike his sire, he had a nice horn, and a very good, wide, open, honest head and face; he was specially well developed in the forequarters, the space behind the shoulders the fore-rib, standing out beyond the shoulder; he had a straight back, very strong, well-covered loins, and specially deep wide thighs, with a very deep body and very short legs. He was square, and filled the eye well; but his covering of natural flesh and his abundant coat of hair were perhaps his strongest points." From the very first Amos Cruickshank had had before him a clearly-defined object, and for more than twenty years he had been strenuously endeavoring to find a sure way where by that object might be attained. Despite the large measure of his success, he was far from satisfied. For he had never been able to secure

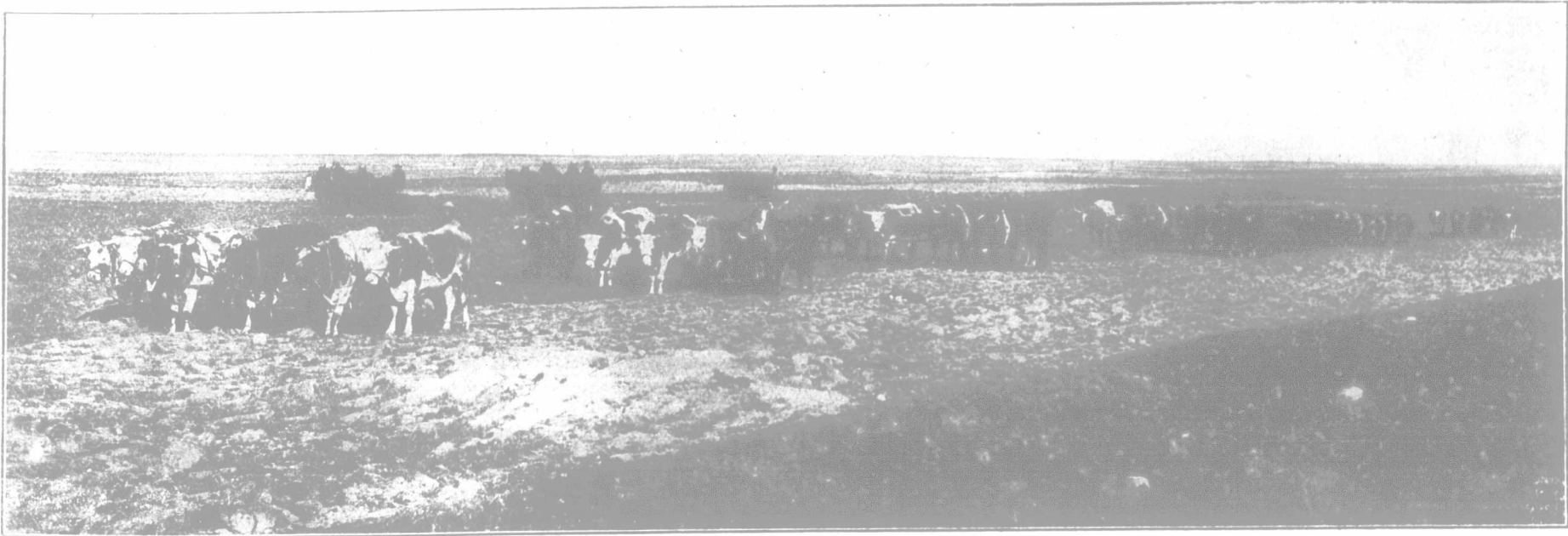
uniformity of results. He had scored many undoubtedly great successes, but still real advancement was intermittent, and the very successes savored of the haphazard. He had secured and he had bred many animals of outstanding merit, but he had not been able to fix a type, and to fix a type was the great ideal to which he had steadfastly devoted the efforts of all these years. He knew exactly what was the type he wanted to produce, and believed it possible so to master the art of breeding that uniformity of results could be secured. In Champion of England he early recognized the promise of a nearer approach to his ideal than he had yet secured, and almost from his birth he was set aside to be kept as a stock bull. With his customary Scotch caution, however, Mr. Cruickshank, began by using the young bull sparingly and with discrimination, and did not depart far from his previous methods, till results proved the wisdom of the move he had made. Champion of England's calves soon furnished unquestionable proof. They were all thick, fleshy, hairy, good-thriving animals, and from the first season were in great demand among the farmers in the district whose aim was to produce beef, and Mr. Cruickshank therefore decided that he was not to be subjected to the strain of showyard treatment, but to be solely devoted to the improving of the herd. He was used for ten years in succession, ten of the most important years in the herds' existence, for from 1860 to 1873 it was at its largest. At that time it numbered over 300 head, the greatest number of bull calves in one year being 84."

Throwing Light on Beef Production.

At the winter meetings of the live stock associations, the question of beef production has been brought up, and the subject has, with one or two exceptions been passed with little if any discussions. Agriculturist Grisdale has from time to time given the results of his experiments at the C. E. F. Ottawa, and has arrived at several conclusions, which permitted him to make general statements bearing more or less on the beef making industry on Western farms.

At the present time it appears to us, that beef making, pure and simple by Western farmers will not one year with another prove profitable, bearing in mind that the farmer is to breed his own feeders. In other words the average farmer, or even the man who has gone further than that towards agricultural perfection, must, if desirous of engaging in the business of beef raising do so with the dual purpose type of cows. By so doing the eggs are not all in one basket, and as a consequence if beef falls in price, the returns from the dairy end of the industry and from the natural complement of swine raising and pork production will turn a probable deficit and loss into a surplus and profit. As bearing on this subject Prof. Mumford of the Illinois Experiment Station when discussing the cost of raising a 450 pound calf, states in part as follows:—

"It is not our purpose in this paper to discuss the cost of range bred calves but rather to discuss what are commonly spoken of as native calves. Nor is it our purpose at this time to attempt to show the cost of rearing skim milk calves, but to confine this discussion to the cost of raising calves where cows of pronounced beef



AN IDEAL POWER ON THE BREAKING PLOW.

Thirty-five oxen at work on J. E. Miller's farm, Lumsden, Sask. Two acres broken each round by each team. Nine hundred and sixty acres broken this season.