

purchased when in calf with him, at a sale in England for 110 guineas. It is not often such a good investment comes the way of a breeder. Mr. Duthie also bought the highest priced heifer at Perth. She was bred by Messrs Perterkin, Dunglass, Dingwall, well known and successful breeders. She is only a yearling but was eagerly coveted, and cost Mr. Duthie 350 guineas. The Blossom tribe to which she belongs has had a remarkable succession of victories in the Argentine, where three full brothers have taken the champion honors in successive years at the Palermo Show. 340 Shorthorn bulls, at Perth, made an average of £60.19.7 each. The Aberdeen-Angus bulls were sold in the preceding week. 323 bulls of this breed made an average of £34.5.10 each. The judges and the public were arguing fairly well among the Shorthorns, but they were hopelessly at variance among the blacks. The highest price of the sale, 400 guineas or £420, was made for the Harviestoun bull Prince of Messina, which was not placed by the judges. He was bought by an Aberdeenshire tenant farmer, Mr. Penny, Skillymanno, so that the highest priced bulls of both breeds have been retained by tenant farmers for home use. The Harviestoun herd led easily at Perth for an overhead average. Mr. Kerr, its proprietor, sold five bulls at an average of £167.7.5. The best average for shorthorns was made by Lord Rosebery who had £767.11s. each for two. Mr. Moubay of Naemoor, having £369.5s. for three. The best average for a higher number was made by Lady Cathcart of Cluny Castle, with £226.12.6 for six, a first-class result. Highlanders and Galloways have both had their innings, but neither in respect of numbers nor quality nor results do they compare with the two leading breeds. Ayrshires have their turn next week at Lanark. Perth, Aberdeen and Inverness are the great centres for Shorthorns and Aberdeen-Angus, Oban for Highlanders, and Castle Douglas for Galloways.

The London horse shows are now in full swing. The Shire men have just closed their gates. Their champions this year are the two-year-old stallion, Champion's Goalkeeper, which was sold at Lord Rothschild's sale a week ago for 4100 guineas, a splendid price for a young cart horse, and the magnificent, big, chestnut mare Dunsmore Chessie, which has now been champion at least twice if not three times. Shire horse-men have been having a dispute as to the best kind of horse. Some are advocating less hair about the legs, others maintain that to breed Shires with a minimum of hair on the legs is to abandon one of the essential characteristics of the breed. Clydesdale men are not anxious that Shire men should abandon their hairy-legged favorites. So long as they breed that class of animal there are markets in which the Clydesdale will enjoy a monopoly. At the same time it is gratifying to find that among Clydesdale men there is a growing disposition to pay more attention to weight and the formation of top. Some gentlemen who have been determined adherents of the ultra-quality cult are recognizing that something more substantial is needed, and hence a marked improvement in respect of top and weight at the show here a month ago. New Zealand is going strongly in Clydesdale matters. The Clydesdale Stud Book of that Dominion, which has been recently started, is not based on soundness, but horses which have been passed as sound by the Government inspectors are distinguished in the Stud Book. There can be no doubt of the ultimate effect of this policy. Horses so marked will emphatically be preferred to those lacking the distinction, and a levelling up in soundness will ensue. Here we are having a fight on this question, but the Government Register of soundness is to win the day. Several horse owners, who have hitherto been determined opponents of the scheme, are putting some of their horses upon the Register, and there can be no doubt that, in the end, all reputable horses will bear the imprimatur of the Boards of Agriculture. The one thing which the Government must avoid is any attempt to force the pace in favor of compulsory examination and the elimination of the unsound stallion by legal enactment. There was some hint of this in a circular letter addressed to the Breed Societies by the Board of Agriculture and Fisheries, but such a course, if adopted, would not secure the end in view. It would antagonize both horse owners and breeders, and the probability is that it will not be further heard of.

In a letter addressed a month ago to the Winnipeg edition of "The Farmer's Advocate," I gave by request some account of the Scottish horse hiring system. This year hiring was brisker than ever, and odd horses are being arranged for season 1915, while several engagements have been made for 1914. The system is being largely adopted in England, and in connection with schemes for assisting small land holders to use better sires, the Board of Agriculture for Scotland insists on a model constitution. This is quite right. The constitution of some

of the older clubs and societies is extremely loose, but at their worst these organizations did an amount of good, and secured a somewhat equitable distribution of superior sires all over the country. The export trade is very brisk. About 150 head will be shipped for Canada to-day.

SCOTLAND YET.

Feeding Cows on Single Plants.

To determine what would be the specific physiological action of various rations restricted to single-plant sources, upon cows subjected to the strain of reproduction, an experiment was undertaken five years ago at the Agricultural Experiment Station, Madison, Wisconsin. This experiment has been mentioned in previous issues of this paper. Young heifers were fed chemically balanced rations from the corn, the oat and the wheat plant, and as the animals reached physiological maturity and underwent the strain of reproduction it became evident that the ration from the wheat was strikingly deficient, the wheat-fed mothers producing either dead or weak undersized calves. During the past year the experimenters have concentrated their efforts in an endeavor to determine the cause of the disastrous effects of the wheat ration. In addition to the ration prepared exclusively from the wheat plant, rations were fed consisting either of wheat, grain or of wheat straw together with parts of other plants. Cows have produced offspring on various rations as (1) wheat grain and corn stover; (2) corn grain and wheat straw; (3) corn grain and equal parts of wheat straw and alfalfa hay. Upon rations consisting of wheat grain and corn stover, normal, healthy calves were produced. As soon as wheat straw formed the sole roughage, no matter what grain was used, invariably the calves became acid and weak, undersized offspring resulted. However, upon the ration consisting of the corn grain with equal parts of wheat straw and alfalfa hay, normal calves were produced. These results tend to indicate that the deficiency of the wheat plant is not due to toxicity of any part of the plant or to any insufficiency of the proteins, but rather to the acid condition imposed on the animal caused by an insufficient supply of lime and other alkaline substances in the roughage. While this disastrous effect of the wheat straw was overcome by the addition of alfalfa hay, especially high in alkaline substances, previous work indicates that it cannot be remedied by the addition of alkaline carbonates. The work is being continued and will be watched with interest.

Spring Cattle-Feeding.

How many feeders have noticed that it seems more difficult to keep up the condition of the cattle during the warm days of spring than in mid-winter? This often seems to be the case. After several months on dry feed their appetites seem to require something fresh to satisfy them. The young grass springing in the fields gives off a very appetizing aroma, and if the cattle are out in the barnyard they will be noticed at times with their noses elevated sniffing this delicious and refreshing odor as it is wafted to them on the balmy breezes. The more opportunities they have to enjoy the smell of the growing grass the more restless they become and the less they relish the dry feed, and if they ever once get out of the yard and get a taste of the tender springing grass the trouble of maintaining their appetites for hay, wilted roots, and even silage is greatly aggravated. There is very little feeding value in very young grass, it being composed largely of moisture, but it has the taste which the cattle crave. There are good reasons why cattle should not be allowed to roam over the fields, or around the fences as soon as the snow is off.

Cattle must be well fed in spring, for it is important that they go to pasture in good condition. All animals fail in flesh, or at least do not make any appreciable gains when first put on the tender grass. Especially is this so when the grass is young, or has made very rapid growth. It then acts as a laxative, and often when eaten to excess, as it very often is, produces more or less severe purgation. This coupled with its comparatively low food content, causes the cattle to remain practically at a standstill as far as gains are concerned. It is more or less of a trying time on them and they should be in good condition to withstand it to best advantage.

Spring feeding cannot be much different from winter feeding. All stable feeding is to a greater or lesser extent the same. It is dry feeding, and very often, especially in seasons of scarcity, when the winter has exhausted the greater por-

tion of the feed, rations are cut down in spring, rather than being by careful mixing increased. If there is at any time when the cattle demand variety it is at this season. They must have it in order to maintain their appetites and satisfy the desire for a change, which comes with spring. The best of the season's feed should be saved for spring use, and it is usually advisable to feed a little more grain at this season than in the winter. Hay can often be cut to advantage and straw as well. Roots should be pulped, and cattle may often be encouraged to eat the cut feed, silage, pulped roots and chopped grain, all mixed together, more readily than when each is fed separately, and also to consume more of them. Feeders must study closely the likes and dislikes of each animal at this season, and must cater to them even more carefully than in colder weather. The sluggishness which we all feel as the days rapidly warm up is also felt by the cattle. Their torpid systems require as much stimulating as possible. They need spring medicine, which is in their case pasture grass, but this is not available for some time, consequently stable feeding must be regulated, to as nearly as possible take its place until grass is plentiful. Avoid too much heating food, and keep the cattle's appetites good if possible.

Last fall a quantity of sugar-beet tops was placed mixed with corn in a silo at the Wisconsin Experiment Station. Though the silage had a slightly stronger odor than ordinary corn silage it was not offensive, the cows seemed to relish it and did as well on it as on the regular corn silage. Chemical analysis showed that this silage had practically the same composition as clear corn silage. The beet tops were left in small piles in the fields after removing the crop and were ensiled with corn fodder taken from the shock, water being added to give it the proper moisture content.

THE FARM.

Thickness of Seeding Oats.

One of the most interesting topics taken up at the recent Canadian Seed Growers' Convention in Ottawa, was the influence of thickness of seeding upon stooling, early maturing and yield of oats. Prof. C. A. Zavitz, of the Ontario Agricultural College, presented the preliminary report on an experiment now being conducted to throw some light on this question. During four consecutive years four varieties of oats, including Joannette, a heavy stooler, Tartar King, a light stooler, Banner and Regenerated Abundance, medium stoolers, were sown 1, 2, 3, 4, 6, 8 and 12 inches apart each way. The average results of the four varieties for the four years are very suggestive, although the work is not nearly completed. The plants one inch apart, representing about 12½ bushels per acre, did not stool at all, and those two inches apart but very little. At four inches apart the plants averaged two heads, and at twelve inches a little over eleven heads. The time required for maturing ranged from 90 to 100 days, in direct relation to thickness of seeding. The highest yield, 41.73 bushels per acre, was obtained from the plots with plants three inches apart. Four inches apart yielded 38.99 bushels; six inches, 37.42 bushels; two inches, 34.95 bushels; eight inches, 31.77 bushels; one inch, 30.60 bushels, and twelve inches, 21.93. Contrary to common representations, the Regenerated Abundance is found to be quite a free stooler, about the same as Banner in this respect. The advantages claimed by some for light-stooling sorts thickly seeded have not been substantiated by the test, and the general conclusion seems to be that a variety that stools freely can adapt itself to circumstances better than a light-stooling one.

L. H. Newman, secretary of the Association, presented the results of a co-operative experiment conducted by members of the Association to determine the relative merits of Banner oats sown at 2 bushels per acre, and Regenerated Abundance oats sown at 2 bushels and 4 bushels per acre. The results showed that, with one exception, Banner stooled more heavily, averaging 3.9 heads per plant, while with Abundance the average was 2.75 when seeded at 2 bushels per acre, and 2.13 at 4 bushels. The general vigor of growth was better with Banner and better with Abundance seeded at 2 bushels than at 4 bushels. In Saskatchewan Banner was six days later maturing, but there was no difference in the 2 and 4 bushels seeding of Abundance. In Ontario and the Maritime Provinces the heavier seeding induced earlier maturity. Banner out-yielded Abundance sown at the rate of 4 bushels per acre, while Abundance at 2 bushels per acre out-yielded the 4 bushels seeding by one-half bushel per acre.