

yearling heifers made an average of £28 17s. 6d., and his ten bulls made £38 12s. 10d. The females were good sorts, one in particular being of prize-winning character. His Lordship at the same time dispersed his Galloway herd. Thirty-five head of these made £14 14s. each. This is only a little better than the average made at the Fairfield Ayrshire dispersion, when 132 head of all ages made an average of £13 8s. 8d. Sixty-eight cows, good, big, fancy animals, healthy, and the kind which fill the pail, made £15 8d., a first-rate price, and fourteen three-year-old queys sold well at an average of £14 8s. 4d. Fifteen two-year-old queys made £12 13s. 9d., and twenty yearling heifers, £9 15s. 10d. All this is excellent, and speaks volumes for the buoyancy of the cattle trade.

THE HORSE TRADE

is equally lively. At the autumn sales of colts and fillies an advance of from £4 to £5 per head is reported, and the export trade has not for long been so brisk. At Lord Londonderry's annual foal sale at Seaham Harbour there was good trade. Twenty fine foals made the splendid average of £41 14s. 1d., and ten got by the stud horse, Lord Stewart, drew £52 14s. 2d. each. At Lord Polwarth's sale, eighteen Clydesdales, of varying ages, were sold, and drew an average of £45 8d., the highest price being 97 gs., or £101 17s., paid by Mr. Kennedy for the good young mare, Border Jasmine, which was first at Glasgow when a yearling, and has since been a noted prizewinner.

The great horse event of these later days, however, has been the Scottish Stallion Show. For many years the great Scottish show of Clydesdale stallions has been held in the Glasgow cattle market in February. To it there used to gather the representatives of district societies from all quarters, and selections were made of horses to travel in their districts. About the year 1882, and increasingly since, this system has been falling into desuetude, and most societies had got into the way of engaging their horses privately during the winter. Thus it came about that the Glasgow show was shorn of much of its interest, and the last two shows did not pay the Glasgow Agricultural Society, under whose auspices these shows have been conducted. The Society has recently acquired a permanent stand on which to hold its shows, at Scotstoun, on the north side of the Clyde, about three miles west of the center of the city. It was resolved to inaugurate this new venture by holding the show there during the past week, and to join with the Stallion Show a cart-horse parade and driving competitions. These events came off in due course, and for a first attempt were entirely successful. About thirty horses were hired, instead of seven or eight as in previous years, and the selections were made of horses to travel the Glasgow district during 1900. The winners were Mr. James Kirkpatrick's Royal Carrick 10270, and Mr. Marshall's Mercutio, the latter a son of the dual Cawdor Cup champion, Hiawatha. In open competition for graded prizes, several splendid horses were shown, although they were scarcely in the same bloom as they would have been in spring. In the aged class, Royal Carrick was again first, Mr. W. S. Park's Lothian's Best 10376 was second, Mr. Wm. Park's Prince of Brunstane 9977 was third, Mr. A. Mackobbie's Canynman 10323 fourth, Mr. Marshall's Moncreiffe Marquis 9953 fifth, Mr. Kilpatrick's Cawdor Cup 10045 sixth, and Mr. Alex. Scott's Holy Friar 10569 seventh. In the three-year-old class, first prize went to what was perhaps the best horse in the show, Mr. Herbert Webster's Baron Kitchener 10499, a son of the famous Baron's Pride, Mr. James Kilpatrick being second with Royal Gartly's Heir 10361, and Mr. Marshall third with Mercutio; Mr. Alex. Scott was fourth with Prince of Cawdor, and Mr. Richard Dunn fifth with Rozelle 10638. In the younger class, rising two, the most notable thing was the defeat of the H. & A. S. first prize winner, Blacon Baron, by Mr. Wm. Dunlop's Sylvander, which was placed fourth at the Highland. On Saturday the parade of street cart horses was a great success, and it indicates the value of Clydesdale geldings to say that three of the best horses owned by Mr. James Forrest, of the City Saw Mills, were sold for 370 gs., or £388 10s., an average of £129 10s. each.

"SCOTLAND YET."

Pig Feeding on a Large Scale.

I feed roots whole to my hogs once a day, at noon, on a clean floor littered with straw. Have never tried pulping or cooking. I feed all they will eat up clean in the afternoon. Have never fed any clover hay to hogs. Am now feeding my young pigs that I have just weaned (197) corn in the ear, with a little shorts in water for drink in the morning, mangolds at noon, peas in straw at night, with a little shorts and water for drink. When my pigs get to be 3 or 4 months old I grind my grain and soak it from 12 to 24 hours; I mix in a little wheat bran or oat chop. I fed 2,300 bushels of American corn this last year with good results. I feed from 150 to 200 pigs all together in one pen. I find it is the cheapest and most satisfactory way of feeding, not quarter the work to tend them, and they do fully as well, if not better, than divided up in separate pens.

I make no difference in final fattening period. I simply try and guard against getting them too fat. My feeding pen is 30x60, and I can feed 150 in it very nicely. I have been to see some who have cooked their feed, but I have never seen any satis-

factory way of cooking food where there are as many to be fed as I feed. I am very much interested in these questions myself, and if there is a more profitable way of feeding I would like to know it. Norfolk County, Ont. S. A. FREEMAN.

[NOTE.—An illustration and description of Mr. Freeman's piggery and method of feeding appeared in the FARMER'S ADVOCATE of July 15th, 1898. He is one of the few in Canada who have made a success of feeding a large number of pigs together.—ED.]

Some Intricate Pig Questions Discussed.

DRY AND WARM WOODEN BUILDINGS PREFERRED IN WINTER—RATIONS AT VARIOUS STAGES OF GROWTH AND FATTENING.

Perhaps the man who can write most confidently regarding the proper methods of managing swine is the man who has had the least experience. As experience widens, fresh problems keep arising, and there are so many unsolved problems hovering around us the present time that one feels considerable diffidence in attempting to commit his ideas to paper. It is one thing to say that such and such methods give rapid gains, and quite another thing to say that the same methods will give a first-class quality of bacon. The cry that has gone up regarding "soft bacon," and the conflict of opinions regarding its cause, have had their effect in making thoughtful people cautious regarding their statements. If every feeder could follow his hogs through the packing-house, he would probably find that some of his pet theories received a rather rude shaking up. Some members of packing-houses have given farmers very explicit instructions as to how they should feed their hogs; but during the past summer a very successful breeder and feeder of swine sent to the packing-house a batch of hogs which had been fed according to methods approved by the firm to which he sent them, and was astonished when he received word that his hogs had been improperly fed, some of them being decidedly soft and few of them absolutely firm. This incident is related merely to show that while the packer has no doubt mastered all the intricacies of his end of the business, there are evidently a few things which he does not know regarding the apparently simple operation of feeding a pig. It is true that investigations are in progress, but investigating is necessarily slow work, and so there is still a large field to be explored. This long introduction is intended to explain why it is not possible to deal with the question of wintering pigs as fully as is desirable.

The winter housing of hogs is not an easy problem to deal with. The main difficulty is encountered in getting enough exercise for the animals. When a man has comparatively few hogs, he can master this part of the difficulty fairly well; but when the numbers are large and comprise all ages, sexes, and breeds, the real magnitude of the question is appreciated. Our buildings are not well adapted to provide exercise, and in the winter we are compelled to confine animals more closely than we would desire. We have been able to obtain very satisfactory growth, but have not yet convinced ourselves that we are producing bacon of the best quality. A piggery, above all things, should be dry and warm. We have had best satisfaction from wooden buildings, and prefer wood to anything else for the walls of the building. We have some cement floors, with planked sleeping places, which are giving very fair satisfaction; but our farrowing pens are floored with plank.

For pigs just after weaning we find nothing better than wheat middlings and skim milk. Sometimes we cannot get all the skim milk we want, and have to divide the limited supply among those most needing it. We have used ground oil cake and ground flax seed in very small quantities, steeped with the middlings; but though they are better than nothing, they do not equal milk. Of the two, probably the ground flax seed is the better, but it should not constitute more than about five per cent. of the total food. By the time the pigs are about three months old a little ground grain is usually added. We like barley for this purpose, and often add a few oats ground as finely as possible. Soon after this, a few roots are added to the ration. We have fed roots cooked and raw, and have very little preference, except that sometimes cooked roots are eaten a little more readily. We prefer sugar beets, but turnips and mangels are also good. When potatoes are fed, they are always cooked. When fed raw, the roots are pulped and mixed with the meal ration, after which the whole mass is moistened. As to quantity of roots, we have fed to growing pigs as high as fifty per cent. of the total ration; that is to say, equal quantities by weight of roots and meal mixture. This, however, is an excessive quantity, and probably the roots should not exceed twenty-five per cent. of the total weight of the ration (25 lbs. roots to 75 lbs. meal mixture). In these matters, however, the feeder must be guided by the condition and the whims of appetite of the pigs.

We have fed clover hay in limited quantities, principally to breeding sows. They are given an occasional feed of cut clover hay mixed with a little meal and steamed. It gives variety to the ration, but roots are our main dependence for bulky food.

Hogs intended for fattening usually have their supply of roots reduced when they reach about one hundred pounds live weight. Sometimes the roots are cut off altogether, but this depends upon how rapidly it is desired to force them. If the hogs are

somewhat thin, and it is desired to increase the proportion of fat, as well as secure growth, few, if any, roots are fed. For fattening, we prefer a mixture of grain. Equal parts by weight of peas, barley, and wheat middlings or shorts have given very good satisfaction. Sometimes a few oats are included. We feed three times a day, and in deciding upon quantity we are guided entirely by the condition of the hogs. They usually have their feed cleaned up in less than half an hour after feeding. Food is almost invariably given in a well-moistened condition. We have not found any decided advantage from soaking food over mixing it as required.

We aim to give the hogs as much space as possible, but up to the present the amount of exercise has not been what we would like. If we discover some method of overcoming this difficulty, we shall be pleased to report.

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Sheep for Breeding.

At the request of Secretary Coburn, of the Kansas Board of Agriculture, John A. Craig, Professor of Animal Husbandry of the Iowa Agricultural College, delivered an address before the Board's recent annual meeting on "Sheep—Good and Bad." Among other interesting things contained therein he outlines the points that should be found in animals which are to be used especially for breeding purposes, and also the condition they should be in. As Prof. Craig is a recognized authority on all matters pertaining to sheep, the following may be profitably read and considered by all identified with this industry:

The ram should show masculinity in many features. In those breeds that have horns, the latter should spring strong from the head and turn clear from the face. In all rams the face should be broad between the eyes, somewhat short, and with a Roman nose. The crest, or scrag, should be thick and rising; and the neck full. A point deserving emphasis is the depth of the chest. The body should sink deep between the fore legs, and the ribs back of the shoulder should be deep and round, making the girth large and the brisket prominent and wide—two features that are indicative of a strong constitution. A live fleece—that is, one that is springy and not dead to the touch, and especially a dense, thick covering of belly wool—is also indicative of vigor or constitution. For the same reason, in those breeds that are woolled about the head, the more complete and dense this covering is the better it is liked. The legs of the ram should be straight and strong, and short. In movement the ram should be bold and active. This is often influenced by the condition. A ram should never be so heavy in flesh as to be useless in service, as is too often the case in the showing. The flesh should be even and firm, and not gathered in masses or rolls at any part of the body. It is very apt to gather at the foreflank, leaving the back bare or raw. Excessive condition is likely to make the ram unwieldy in action, or result in broken-down pasterns, which usually render a ram useless for breeding purposes.

The ewe should be rather long in the face, with fine features. The neck should be slender and without any of the thickness noticeable in the ram. The body should be deep, round-ribbed, and specially long, so as to provide room for the growing lamb. The type of the good-milking ewe verges strongly toward that which is typical of the good dairy cow. The ewe that milks well, and consequently rears early-maturing lambs, tends toward the wedge shape, deep in the chest, large bodied, and wide across the loins and hips. The condition of the ewe should not be such as to impair her breeding qualities. Excessive fatness, as a rule, is in this way injurious. The flesh should be evenly distributed and not gathered in bunches about the tail-head, and it should be firm and not too flabby.

As a result of our consideration of the good and bad qualities of sheep, there arises the more important problem of breeding to reproduce the former and to remove the latter. I have failed to find, up to this day, where success has been obtained by in-and-in-breeding, cross-breeding, or any other form, but that there was a man behind the system who knew well the merits and demerits of the animals he was breeding. And further, knowing these, he made his selection to get the best blend. This is the basis of a method of breeding that arises from what has gone before. For want of a better term I have named it "balanced breeding," and I believe that this method has the means of developing and adding to the good qualities, and at the same time lessening and removing the demerits of our domestic animals.

To follow balanced breeding in sheep would mean the selection of rams with the leading thought of removing the weakness of the flock. When one realizes the force of balanced breeding, and acts on it in the selection of sires, it is wonderful what strides may be made toward perfection in a few years. With this sire we correct a deficiency of the fleece, and yet retain the good qualities of form; with another we add a little more bone; another deepens the flesh on the valuable parts; and so on, each marking a new advance; while closer discrimination and riper judgment keep disclosing new features to be attained in each additional effort.