

tremendous number of big horses to supply this new demand, and the worst of it is the breeders are not raising enough of them."

Castration.

Opinions differ considerably as to the most desirable age at which to castrate colts. A large percentage of colts are operated upon at one year old, while others are kept entire until two or even three years of age, with the idea of getting greater development of crest and a more masculine appearance, especially of head and neck. Allowing a colt to remain entire until well developed certainly has this tendency, and when this characteristic is desired it can be obtained in this way, but to many horsemen this appearance is objectionable, the idea being that a gelding should resemble a mare in general characteristics. I agree with the latter opinion, and consider a gelding and a mare should hitch well together, and, if mated in other particulars, there should be no marked difference in general physiognomy, such as is noticed if the gelding has remained entire until he has acquired the masculine appearance noted. We notice in the modern showing that many of the competitors, and in many cases prizewinners, in the heavy-harness classes are "stags." Trotting-bred horses that have been kept for breeding purposes until adulthood, and not being fast enough for the purposes for which they were bred, and having good action, are castrated, docked, manes pulled, shod, and driven to produce action rather than speed. Some of these fellows make high-class heavy-harness horses, and in my opinion, the principal objection to them is their masculine appearance. When a pair of them are hitched together this probably does not strike a person so forcibly, but if one be hitched with a mare or ordinary gelding, the contrast is striking, and they cannot be said to be a team. The older a colt or horse is when castrated, the greater the risk, and, to a limited extent, the greater his value, hence the greater the loss should results be untoward or fatal. Castration is a more serious operation than is generally considered. It cannot be performed without severing important organs, and the most skillful operation, performed under the most favorable circumstances, is liable to be followed by untoward results. Colts appear to be more liable to unfavorable results than the young of other classes of stock, but this is largely due to the fact that the young of cattle, sheep and swine are usually castrated at a few days, or at most, a few weeks old, when, as stated, the danger is less. In my opinion, the better time to castrate colts, provided, of course, the animal is strong and healthy and there is no abnormality, as hernia or the absence of one or both testicles in the scrotum, is from ten days to three weeks of age. At this age no special means need be taken to prevent hemorrhage, any more than in a calf; the foal is sucking the dam and usually on grass, and the operation has practically no effect on his general health. Of course, I don't mean to say that even at this age the operation is not attended with some risk, but that the risk is much less, and if it should prove fatal, the loss is much less than if the animal were one or two years old, or older. The average farmer castrates his own calves, pigs and lambs, and meets with few losses, but if he allowed them to reach the age of one, two or three years before castration, and exercised the same carelessness that he usually does, he would find his losses would be much greater. By carelessness, I mean a total disregard to antiseptic measures. As a rule, the operation is performed with a knife carried in the pocket and used for general purposes, sharpened, no doubt, just before the operation, but no means taken to disinfect it or the hands or scrotum. Neither the hands nor instruments are even washed; the operation is performed, and nature allowed perfect liberty to act without assistance or interference. The percentage of losses, even under these conditions, in quite young animals, is quite small, but if the same carelessness were observed in animals of greater age it would be different. Certain general rules should be observed in the castration of any animal, especially colts. Moderate weather, when there are not flies, say from about the middle of May to the first of July, is the better time; or, if we wish to operate in the fall, we should select October or the first half of November. The animal to be operated upon should be in good health, and especial care should be taken to not operate upon one suffering from any respiratory disease, as strangles or influenza, nor upon one out of a stable in which such diseases exist, as while the colt may not show any symptoms, the germs may be in the constitution, and he will develop the disease after the operation, and it is noticed that in such cases he will usually give trouble. I consider it wise for the man who has no special knowledge of or skill in the operation, to employ a veterinarian to operate, but, if he decides to operate himself, or allow an unprofessional man, who travels the country for the purpose, to operate, he should see that certain precautions are observed. The instruments to be used should be used for no

other purpose, and they and the hands of the operator should be thoroughly disinfected with a good disinfectant. Probably none better than a four- or five-per-cent. solution of carbolic acid. A five-per-cent. solution of phenyle or Zenoleum does very well. The animal to be operated on should be cast and firmly secured. Some operate with the patient standing, but I do not approve of that, unless there is some special reason why he should not be thrown. The operator has not as good an opportunity to observe antiseptic measures. As an acrobatic feat, this mode of operation may be said to be a success, but as a surgical operation it does not meet with the approval of many. If a sucking colt, no ropes are needed; a couple of assistants can hold him; but, if a year old, or older, he must be secured with ropes. The hands of the operator, must now be disinfected, and the scrotum well washed with the solution. A testicle is grasped between the thumb and finger and pressed tightly against the scrotum, and a free incision made (care should be taken to make a large incision) and the testicle pops out. If a foal, the cord can be severed with a scraping motion of the knife, and there will be no danger of bleeding. In this case, cut the non-vascular portion of the cord, and scrape the remainder. If a yearling, or over, the cord should be severed with an emasculator or ecraseur; or, if clamps are to be used, the non-vascular portion of the cord is first severed, and the clamps, having been disinfected, are applied to the remainder, and the cord cut off. The other testicle is removed in the same way. If the openings have not been made large enough, they can be enlarged now, a little of the antiseptic poured into each wound, and the colt allowed to rise. If clamps have been used, he should be kept quiet in a clean stall (it is important that the stable be clean and well ventilated) for about twenty-four hours, and then the clamps removed. If the instruments named have been used, he may be allowed to run at grass, but should not be left out at night or in cold or wet weather for about ten days after the operation. The scrotum should be examined the day after the operation, and if the lips of the wounds have become united by a drying of a little blood or serum, the finger should be disinfected with the solution, the adhesions broken down, and any clotted blood that may be present removed from the scrotum.

In my article on "Diarrhoea in Foals" in your issue of May 4th, page 660, a mistake appears. It will be noticed that the 7th and 8th lines from the bottom of the column are a repetition. The sentence should read, "The foal should be given one to three drams, according to size, of tincture of opium (laudanum) in a little of the dam's milk, etc." "WHIP."

STOCK.

Our Scottish Letter.

This must be a miscellaneous composition. The great Ayrshire shows have recently been held, and in connection therewith quite a number of noteworthy points call for attention. Breeders here are naturally interested in the good prices made at the Lachine Rapids sale of Mr. Ogilvie's Ayrshires. The foundation was obtained here, and the stock was recruited from time to time to excellent purpose by purchases from this side. Mr. Hunter, the manager, knew his business well, and carefully selected the kind of Ayrshires for milk first, and shapes afterwards.

This year the milk classes at our great west country shows have been well filled, and at Ayrshire was a lengthened fight between two grand dairy cows, owned by Mr. T. C. Lindsay, Aitkenbrae, Monkton, and one of the once fashionable small-teated kind, owned by Mr. Wm. Howie, Burnhouses. For once judges had the courage to oppose the once popular idea, and Mr. Lindsay's grand dairy sorts were preferred. The best of these, Snowdrift, is a great specimen. She was third in the Ayr Derby a year ago, and was then considered one of the finest dairy types. She was champion at Kilmarnock a fortnight ago, and her victory, repeating this performance at Ayr, was generally commended. Mr. Lindsay is breeding from a bull named White Prince, a son, if we mistake not, of the great prize cow, White Rose of Burnhouses, which hardly ever was beaten. The Kilmarnock Derby for three-year-old queys was won by Mr. James McAlister, Meikle Kilmory, Bute, with Brownie, which also stood well forward in the Ayr Derby this week. The Ayr Derby was one of the best seen for a long time, and the judges set their teeth, and judged not according to fancy, but in accordance with the demands of utility. Mr. Alexander Cross, of Knockdon, was first, with a very fine dairy specimen, having a stylish body, as well as vessels and teats of the true dairy stamp and character. Mr. Robert McAlister, Mid-Ascog, Bute, was second in the Derby, with a good kind of dairy cow, and Messrs. A. & W. Kerr, Old Grainney, were third, with the Castle Douglas winner. All through the Derby class a disposition was manifested by the judges in favor of dairy properties as opposed to fancy points. Mr. James Howie, Hillhouse, Kilmarnock, as usual cleared everything before him in the yield stock and bull classes. He shows very stylish specimens, and the reputation of the Ayrshire having style of body as well as excellence of vessel and teats

is very safe in his hands. He knows how to bring out such stock, and this is one-half the battle.

Great interest is being taken at present among cheesemakers in an experiment carried out by Mr. Robb, of the West of Scotland, on the temperature at which the rennet should be put into the milk. Hitherto makers have been going on the principle that the temperature should be high rather than low, but Mr. Robb's results seem to declare in favor of the lower temperature. This has been challenged by Mr. Andrew Clement, the well-known produce importer, who warns farmers against being misled by Mr. Robb's results. It is understood here that Canadian makers favor the lower rather than the higher temperature. Another experiment has been conducted by Mr. Robb, dealing with the effect of butter-fat as a determining factor in the quantity of milk to be used in cheesemaking. The results here are very striking, and point to the necessity for a high standard of butter-fat in cheese dairies, as well as in sweet milk or butter dairies. Mr. Robb promises to be an invaluable addition to the staff of our college here. His experiments are useful, and so far as conducted to date, they teach solid lessons. Milk records are now more thought of than they used to be in Scotland. The Highland Society has for two seasons conducted testing work in numerous dairies in the West and South-west of Scotland. The results are remarkable enough, and show the necessity for weeding out in many byres where profitless cows are being kept. Buyers from Canada and Sweden, and visits to Denmark, have all had their value in teaching Scots farmers the utility of milk records, but by far the most influential educative agency has been the experience of farmers in court, under the new milk standard regulations. The recording of a few convictions against men who have sold milk under the standard has shown the necessity for keeping cows with records of quality, as well as quantity. There is a great amount of "canna" be fashed" with Scottish farmers, but a few turns in the police courts modify the contempt entertained for such things as milk records.

Clydesdales are having plenty recognition in these days, and prices have been fairly remunerative. At the Kilmarnock show there was a strong exhibition, and the younger classes of stock were remarkably well filled. The family prize for the five best yearlings was won by Messrs. A. & W. Montgomery's Everlasting, a son of Baron's Pride, which won first prize at the H. & A. S. show three years in succession. He has made an excellent start as a breeding horse, and his own merits are being reproduced in his progeny. The male championship at Kilmarnock went to Messrs. A. & W. Montgomery's big three-year-old horse, Silver Crest, by Acme, and at Ayr the same owners took the championship with Baron Fyvie, a two-year-old colt, by Baron's Pride, which gained first prizes this year at Castle Douglas, Kilmarnock and Ayr. At Ayr they showed a very good yearling colt, by Baron's Pride, not out before. He is somewhat like what Everlasting was at the same age. The female champion at Kilmarnock was Mr. Robert Forrest's three-year-old mare, Jean, by Baron's Pride. She gained the same honors a year ago. At both Kilmarnock and Ayr a beautiful yearling filly, by Hiawatha, and owned by Sir John Stirling Maxwell, Bart., M.P., was put first. This filly is named Menowah, and, curiously enough, Sir John won similar honors in the previous year with another of the same sire, and named Minnehaha. Menowah is a beauty, with an extra good hind leg. The female champion at Ayr was Mr. Wm. Park's brood mare, Rosadora, which stood reserve at Kilmarnock.

Hackney and driving horses are now being bred to great perfection in Scotland. The exhibition in these classes at Kilmarnock and Ayr was very fine, and this week two very important sales have been held. At Gowanbank, Darvel, Ayrshire, on Thursday, Mr. Alex. Morton sold 37 ponies and horses, at an average of £71 3s. 5d. The highest prices were made for the ponies, 23 of which made an average of £72 each. The highest price paid was 370 gs. for a four-year-old chestnut mare standing 14.2, and got, like all the other high-priced ones at the sale, by the stud horse, Ruby 1342. Ruby Flancee was bought by a London buyer, and certainly she is an amazing goer, while at the same time her shapes are perfect. Another pony by the same sire, and named Rubetta 13.3, and five years old, made 200 gs. to another buyer from Surrey. The demand throughout was steady and brisk. Since Christmas Mr. Morton has sold ten Ruby cobs at an average of £241 apiece. None of these was over 15 h. Ruby is now over 20 years of age, and hard as steel, with courage and vim. He has marvellous hack action, and his colors are perfect.

Satisfactory as were the results at the Gowanbank sale, those at the Thornhorne, Carlisle, sale on the following day eclipsed it altogether. Mr. William Scott, the proprietor, is the fortunate owner of the very fine harness breeding horse, Mathias 6473, a son of the London champion mare, Ophelia 1301, and out-of-sight the most successful sire of richly-colored high-class harness horses in Great Britain to-day. At the sale yesterday 13 of his progeny made the splendid average of £119 10s. each. His daughter, Bryony, one of the most lovely specimens ever bred, made 585 gs. His son, Thornhorne Performer, made 280 gs. Another son, full brother to the last, made 150 gs. Afterglow, full sister to Bryony, made 114 gs. The champion horse at Kilmarnock made 122 gs., and another of his gets made 100 gs. No such sale of harness horses has ever before been seen in Scotland. The average for 22 head was £113 11s. 7d. Although motor traffic threatens the trade in ordinary commercial driving horses, it is