

offspring, yet we are at the present time but very imperfectly acquainted with them. We are also at a loss for statistics which will correctly give the number of each sex of many of the various breeds of animals which we cultivate. It is true, Darwin asserts, that amongst racehorses slightly more fillies than colts are cast: that with Cheviot sheep a still greater proportion of ewes than ram lambs are dropped; whilst with greyhounds, ten per cent more dog than bitch pups are whelped. By a study of the register, it is possible to verify, to a certain extent, the figures as to the racehorses, but I fail to see how the figures as to sheep and greyhounds could be accurately arrived at.

Although some five hundred theories have been advanced on the subject of controlling the sex of human beings, yet those which have found most general support appear to be limited to the ovular—making sex an inherent quality in each ovum, independent of outward influences, the sire merely arousing its dormant powers; the spermatic, making it wholly dependent upon the seed of the sire, the epigenesian, which claims that the primitive germ is non-sexual, but that the sex is determined during the period of gestation. Metamorphosis is exactly the opposite of the former, as the believers in this theory assert that the entire chick, as a whole, really exists in the eggs previous to incubation, and the same with man and all other animals; and that the period of incubation or gestation is simply the expansion or unfolding of organs already existing in miniature: and the superiority theory, which claims that the sex is determined by the parent, which, at the time of mating, has certain qualities more strongly developed.

It will, perhaps, be more convenient, if I take the different theories in the order given, and endeavor to discover the probabilities in favor, or the reverse of each of them.

There appear to be two systems, or ideas, connected with the ovularian theory, the first is that the ova of the female are alternately male and female; and the second is that each ovum will produce a male or female according to the time of its fecundation. As to the former, I have tried in vain to find any extended and well-authenticated experiments which bear out the theory that, by allowing the female to miss one heat and mating during the second period, that the progeny will of necessity be of the same sex as the last foetus. There is no doubt that, in the majority of cases, the chances are very greatly in favor of a given number of females producing alternately males and females, providing that they are left in a state of nature; but this does not prove that a particular female can be made to produce offspring of either sex by simply selecting the period of oestrus. I am well aware that you will find many stock attendants who will assure you that this plan of regulating the sex of offspring is almost infallible, but I have hitherto failed to discover any carefully-conducted trials which go further than to prove that an animal is most likely to produce a male after having brought forth a female. This we may take as being simply an effort of Nature to equalize the number of each sex.

There will, of course, be found cases where certain cows will produce a much greater number of one sex than the other, and, indeed, some families of cattle, such as the Bliss tribe, have become scarce owing to most of the cows persistently producing only bull calves; on the other side we find the Mantalinis breeding a majority of heifer calves.

On this part of our subject, and on the heredity of the tendency to produce a certain sex, the late Lord Althorp wrote: "Are certain families more addicted to offspring of one sex than the other? Certain individuals assuredly are so, but is the tendency hereditary? Clearly, not invariably on the sire's side. Marmaduke, for example, was a remarkable heifer-getter in his first season or two;

Moss Rose, by Marmaduke, bred all bulls but one, and the exception was barren. Mr. J. G. Grove bred Bustle, of the Bliss tribe, and her produce was mostly, if not all, heifers; yet Bellona, her daughter, bred nothing but bulls, and Princess Maude, another daughter, all bulls with one exception. Mr. R. Booth's Windsor begat Mr. Booth's Lady Blithe and Mr. Carr's Windsor Queen. The latter bred all bulls, the former eight or nine heifers and one bull. All the last named four were of one tribe, and yet two of the dams recorded bulls only, and one all bulls with an exceptional heifer. And besides Lady Blithe, Stella (Lady Pigot's), a descendant of Princess Maude, had four heifers out of five calves. So that it cannot be said there is any variable rule or even assurance, one way or another.

"Among all kinds of live stock kept in confinement and under artificial treatment, we believe likewise we have found male offspring to preponderate. The only fact we have ever observed like a law is, that if there be any unusual difference in age between the parents, especially when the female is by far the elder, the produce are for the greater part female.

"Our own opinion is, that though sires and dams are often to be found, whose progeny are more of one sex than the other, no certainty exists that this progeny will differ in any other respect from animals otherwise bred. But we have frequently found that disparity of age produces five-sixths female offspring. A five year old game hen produced to a cockerel of the previous season, eleven chickens, and nine of them were pullets. An unusually old cow (as instances, see Mr. R. Booth's Modesty, Mr. H. Webb's Mayflower, Mr. Foster's Polly Gwynne) generally finishes off with a heifer calf, and we have noticed that these last fruits of an old tree are generally abnormal in their tendencies, and not unfrequently, like twin-heifers, if they breed at all, breed only one or two calves, and these often turn out to be barren."

With mares the same law doubtless applies. Turning to the stud-book, I find that the thoroughbred mare Rosemary produced two males from two different sires; next she produced three females, two of them by the same horse that got the males; then another male, and then eleven females in succession from nine different sires. Scythia produced six females and no males, from three different sires. Another mare, by Scythian, on the same page, produced four females by as many sires. Terolite produced six males to successive covers of imp. Australian; while Dolly Carter, bred to the same horse, produced nothing but females. Mary Lewis began with two male foals, the second being by Glencoe; her next foal, also by Glencoe, was a filly; and all her foals after that (six more), by four other sires, were females.

Olivia produced seven males in succession from four different sires before she dropped her first filly. Neither Jack Malone, Muggins, John Morgan, nor Bonnie Scotland could get anything but fillies out of Lantana. Mollie Hambleton produced six fillies in succession, three of them by Planet, and then she faced about, and threw two male foals to Planet. In short, the pages of the stud-books and herd-books furnish a complete refutation to any rule that has yet been formulated upon this subject.

(To be continued.)

Half the people of the world live almost exclusively on rice. It contains 88 per cent. of nutriment, while roast beef contains but 26.

The Boss Zinc and Leather Collar Pads are the best. Leather or Soft Pads hold dirt, mat the mane, and chafe the neck. Use the Boss, the cheapest, and most durable, and save all trouble. Sold on 60 days' trial by all Harness Makers. Manufactured by Dexter Curtis, Madison, Wis.

CANADA SHORTHORN HERD BOOK — TRANSFERS.

FROM NOV. 20TH, 1885.

- B. Elmsley Duke, 13430, by Gambetta, 13056. E. Frizell, Perth; Wm. L. McVeety, Perth.
- F. Irish Lady, 15228, by Turk, 11178. Thomas Treharne, Denfield; B. Harkett, Denfield.
- B. Manitou, 13433, by Royal Heir, 7805. A. McIntosh, Guelph; John Routledge, Hilly Grove, Algoma.
- B. Young Prince 2nd, 13437, by Hardy. Andrew Aitkin, Park Hill; Robt. Hudson, Park Hill.
- B. Coleman, 13438, by Bruce, 10824. A. C. H. & H. McCormick, Paris; R. P. Irving, Glenmorris.
- B. Cato, 13440, by The Cavalier, 7944. John Glenn, Lumley; John Stafford, Walton.
- F. Primrose, 15240, by Elma Prince, 11727. Jno. Shearer, Listowel; J. G. Campbell, Molesworth.
- B. Duke of Riverbank, 13444, by Waterloo Champion, 11554. Edward Hoolscher, Kossuth; Elias Weber, Breslau.
- F. Russeldale Beauty, 15251, by British Crown, 9720. Robt. Clark, Russeldale; Alex. Roy, Russeldale.
- B. Lobo Duke, 13454, by 2nd Duke of Moundale, 13022. E. W. & G. Charlton, Duncrief; Sam. Dinamore, Cranton.
- B. Pride of the West, 13451, by Earl of Dumfries. Geo. Reck, Mitchell; Wm. Troeger, Brodhagen.
- F. Catharine, 15253, by Lord Elcho, 10154. Geo. Rock, Mitchell; Pat. DeCorsey, Bornholm.
- B. Rhine, 13450, by Lord Elcho, 10154. Geo. Rock, Mitchell; Aug. Eckmeir, Brodhagen.
- B. Shamrock, 13440, by Lord Elcho, 10154. Geo. Rock, Mitchell; Ferdinand Quenengesser, Brodhagen.
- B. Duke of Elgin, 13445, by Hero of Kingsmill, 10070. E. J. Hutchison, Luton; M. Charlton. Aylmer.
- F. Snowball, 13466, by Hero of Kingsmill, 10070. E. J. Hutchison, Luton; Wm. Leeson, Iona.
- F. Lal, 15267, by Baron Rowton, 8112. H. W. Peterson, Hawksville; C. D. Bowman, Montrose.
- F. Maude, 15266, by Baron Rowton, 8112. H. W. Peterson, Hawksville; Alex. Peterson, Hawksville.
- F. Psyche, 15260, by Baron Rowton, 8112. H. W. Peterson, Hawksville; Alex. Peterson, Hawksville.
- B. Louis Riel, 13455, by Sir William, 11374. L. D. Misener, Wellandport; M. Robins, Candaville.
- B. Prince Nimrod, 13468, by Prince Sirod. Jas. Pole, Appin; D. B. Black, Appin.
- B. Duke of Caradoc, 13467, by Duke of Argyle, 6663. Jas. Pole, Appin; Henry Hardy, Longwood.
- F. Maud's Duchess, 15280, by Ed. Hanlan, 7040. Wm. W. Macallister, Stony Mountain, Man.; D. McDonald, Greenwood, Man.
- B. Kildonan Chief, 13404, by Lord Byron, 8810. Wm. W. Macallister, Stony Mountain, Man.; H. J. Cunn, Kildonan, Man.
- B. Donald's Duke, 13463, by Ed. Hanlan, 7040. Wm. W. Macallister, Stony Mountain, Man.; D. McDonald, Greenwood, Man.
- B. Highland Lad, 13477, by Lord Albert Nyanza, 11000. Jno. Buchanan, Branchton; Wm. Menzies, Kirkwall.
- B. Duke of Middleport, 13470, by Royal Briton, 13469. Henry Hammond, Cainsville; D. Deagle, Tuscarora.
- B. Duke of Braemar, 13475, by Roan Duke, 11249. T. C. Rowe, Hickson; N. Murray, Braemar.
- B. Rob Roy, 13478, by Earl of Goodness 5th, 8514. W. Douglas, Caledonia; Wm. Reith, Hensall.