

compatibility of the pair which are matched. Several instances have been communicated to me by Mr. W. C. Spooner (well known for his essay on Cross-breeding), by Mr. Eyton of Eyton, by Mr. Wicksted and other breeders, and especially by Mr. Waring of Chelsfield, in relation to horses, cattle, pigs, foxhounds, other dogs, and pigeons.⁷⁷ In these cases, females, which either previously or subsequently were proved to be fertile, failed to breed with certain males, with whom it was particularly desired to match them. A change in the constitution of the female may sometimes have occurred before she was put to the second male; but in other cases this explanation is hardly tenable, for a female, known not to be barren, has been unsuccessfully paired seven or eight times with the same male likewise known to be perfectly fertile. With cart-mares, which sometimes will not breed with stallions of pure blood, but subsequently have bred with cart-stallions, Mr. Spooner is inclined to attribute the failure to the lesser sexual power of the race-horse. But I have heard from the greatest breeder of race-horses at the present day, through Mr. Waring, that "it frequently occurs with a mare to be put several times during "one or two seasons to a particular stallion of acknowledged power, "and yet prove barren; the mare afterwards breeding at once with "some other horse." These facts are worth recording, as they show, like so many previous facts, on what slight constitutional differences the fertility of an animal often depends.

Sterility of Plants from changed Conditions of Life, and from other causes.

In the vegetable kingdom cases of sterility frequently occur, analogous with those previously given in the animal kingdom. But the subject is obscured by several circumstances, presently to be discussed, namely, the contabescence of the anthers, as Gärtner has named a certain affection—monstrosities—doubleness of the flower—much-enlarged fruit—--and long-continued or excessive propagation by buds.

It is notorious that many plants in our gardens and hot-houses, though preserved in the most perfect health, rarely or never produce seed. I do not allude to plants which run to leaves, from being kept too damp, or too warm, or too much manured; for these do not flower, and the case may be wholly different. Nor do I allude to fruit not ripening from want of heat or rotting from too much moisture. But many exotic plants, with their ovules and pollen appearing perfectly sound, will not set any seed. The sterility in many cases, as I know from my own observation, is simply due to the absence of the proper insects for carrying the pollen to the stigma. But after excluding the several cases just

⁷⁷ For pigeons, see Dr. Chapuis, 'Le Pigeon Voyageur Belge,' 1865, p. 66.