The first-cross birds were of intermediate size — in fact, they showed the blended inheritance most breeders would expect. When, however, a further generation of over two hundred birds was raised from these crossbreds it was found that this consisted of all sorts of size, ranging from birds smaller than the Sebright to birds larger than the Hamburgh. Moreover, it was found that the small birds bred true to size at once, and there is evidence that strains of intermediate and of large size could also be established without difficulty.

BREEDING TRUE.

The last paragraph raises important questions to the stud breeder. It goes to show that although in the crossing of animals we often get progeny which to all outward appearance are of blended inheritance, this blended inheritance does not apply to the egg or germ-cells. The germ-cells in these crossbred animals contain a mixture of unit characters derived from their ancestry, but these unit characters are not blended—each is pure in itself. In breeding these crossbred animals together there can be no fixed type in the progeny, as it is just a matter of chance which unit characters come together to form the new animal. I think this explains the reason why stockmen who breed crossbreds find from experience that to get good results they must use a pure sire. The prepotency of a good purebred sire dominates the mixed inheritance of a crossbred dam, and at the same time the progeny gets the advantage of the increased vitality and vigour that seems to come from an outcross.

If we get the results stated in the last paragraph when different breeds are crossed, shall we not also get something of a similar nature, although less in degree, when different strains or types within the same breed are crossed? If this is true, then stud breeders must always bear this in mind when mating their animals. The object of stud breeding is not only to breed animals as near perfection as possible, but also to produce animals that will, when mated with similar animals, produce animals of similar type and quality; in other words, they must breed true. If the breeder produces fine animals, but they do not breed true, then he is a failure. Now, every stud breeder will have some ideal in his mind to aim at, and he will be constantly trying to bring his flock or his herd, or a large proportion of it, nearer his ideal. In doing this he can proceed in two ways: he can use sires of type and ancestry as near to his ideal as he can get them, or he can select sires specially with a view to correcting some weakness in his own animals — that is, if he thinks his own animals have gone to an extreme in one direction he can try and correct this by using sires that go to an extreme in the opposite direction.

Now, it seems to me that the first method is right and the second method wrong. The second method might get quicker results as far as the outward appearance of the animals is concerned, but it will not produce animals that will breed true. Let us take an example. Suppose a stud-sheep breeder thinks that his flock, or a portion of it, has become too coarse in the wool, and he wants to get it finer. Suppose he thinks he will attain his ideal quickest by selecting a sire finer in the wool than his ideal, but just so much finer that a blended inheritance will produce the wool he has in mind. Let us see the result.