

6. Young females should be put to the best of their own kind at the first impregnation, to avoid reappearance of stain in future progeny.

7. Science has not revealed any rule by which the proportion of the sexes can be predetermined and secured. (1)

8. The sire exercises most influence on the size, muscular power, and general conformation of, while the dam influences the nervous system and constitution of, and is more likely to impart hereditary diseases or weakness to, the offspring.

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CROSS-BRED ANIMALS.

The most noticeable feature in modern stock-breeding is the success that has attended the raising of cross-bred animals for the block. Cross-bred cattle and sheep have been common since the various breeds have been established. But there are cross-breds and cross-breds.

The animals that went by that name of old were the result of chance or negligence, mainly the latter. These we have still with us, and are likely to have them as long as there are ignorant and careless breeders of stock in the land. The cross-bred cattle and sheep that have come so much into favour are no chance animals nor are they the product of a careless selection by the breeders.

It is no exaggeration to say that it requires quite as much skill to raise the highest class of cross-breds as it does to raise pure bred stock. This is shown by the fact that the range of prices is very great in cross-bred stock.

What I may term the "scrubber" is often of no actual value, while for the carefully bred cross-bred, whose parents were the best of their kind, there are always plenty of buyers at full rates.

The value of cross-breeding judiciously carried out is shown more clearly in sheep breeding than it is in cattle raising, particularly where the object of the farmer is to raise sheep for the market. It is often urged against the cross-bred that it has no type; that the results are uncertain, and if the system be persevered with for several generations, it will infallibly end in disappointment. I am the strongest of advocates for purity of blood, and for the maintenance of stud flocks and herds, and yet I believe that cross-breeding can be maintained for any number of generations, and the stock kept at a high standard of excellence, to the financial benefit of the owner. It must not be understood from this that I advocate general cross-breeding in flocks. The circumstances of the locality and the object the flock master has in view must be the guide as to what sheep are to be raised. There is naturally a greater oscillation of type in the cross-bred flock than in one of pure race, but a skilful breeder who closely attends to his business, can reduce these oscillations to within a very narrow margin. When unskilful flock-masters undertake to raise cross-bred sheep, particularly when the long-wool is crossed on the merino, the oscillations are so great that the sheep may be fairly said to have no type at all. To remedy this defect it has been suggested that an intermediate variety between the long wool and the merino should be established. This project has been talked of for years and years, and many attempts have been made to produce the desired variety. In the past these attempts have failed, but there are still sheepbreeders engaged in the apparently hopeless task. I have seen in Australia one of the best of the intermediate flocks, that has been bred within itself for several generations, but the animals do not come up to those cross-breds raised by a skilful breeder in the usual way.

Perhaps the best cross-bred flock in the world is that owned by Sir Rupert Clarke, Victoria, Australia, and founded more than sixty years ago. The cross is long-wool and merino. The wool from this flock realises a high price, the sheep yield a good weight of wool, the fat stock command the highest rates in the market. The sheep in both the breeding

(1) Though a good many quacks are now advertising their *nostra* for that purpose. Ea.