

The progeny may be just the sheep the breeder aimed at, but half their germ-cells will carry the fine-wool factor, and half will carry the coarse-wool factor; and when these are mated they will produce progeny one-fourth with fine wool which, if mated together, will breed true as a fine-woolled strain, one-fourth with coarse wool which mated together will breed true as coarse-woolled strain. The remaining half will be like their parents, having wool of the desired type, but which when bred together will not breed true, but will again break up into one-fourth fine, one-fourth coarse, and one-half correct wool but with mixed germ-cells.

Now, suppose that instead of selecting a fine-woolled sire with a view to bringing his wool to his ideal type a breeder selects a sire having wool of his ideal type and coming from stock that all had wool of this type. Call this ram "Perfection." The progeny will not in outward appearance be as near the breeder's ideal as the progeny from the fine-woolled ram; but let us think of the germ-cells. Each one of the progeny will have half its germ-cells carrying the factor of Perfection, and half carrying the factor for coarse wool. Breed the progeny together, and we have the following mating:—

		Ram.	Ewe.
50 per cent. germ-cells	..	Perfection	Perfection.
50 per cent. germ-cells	..	Coarse wool	Coarse wool.

The result of this cross will be that one-fourth of the progeny will have reached perfection and will breed true; one-half will be like their parents—that is, a cross between perfection and coarse wool; and the remaining one-fourth will have reverted to coarse wool, and if bred together will come true to this type.

If instead of breeding the progeny of Perfection and coarse wool together the ewes are bred to another Perfection ram, we have the following combination of germ-cells:—

		Ram.	Ewe.
50 per cent. germ-cells	..	Perfection	Perfection.
50 per cent. germ-cells	..	Perfection	Coarse wool.

The results of this cross will be that half the progeny will be Perfection and will breed true, the other half will be like the dams—that is, a cross between Perfection and coarse wool.

It seems to me, therefore, that the only way to produce a first-class flock or herd that will breed true is to continually use sires as near the ideal as possible, both in appearance and in ancestry; and that using sires of one extreme to correct dams of an opposite extreme will lead to disaster, although it may temporarily produce some good-looking stock. Further, if the good-looking stock bred this way are purchased by other stud breeders the results will disappoint the buyers.

#### SEX-LINKED INHERITANCE.

There is evidence to show that certain qualities of inheritance are sex-linked—that is, they are only inherited through the male or through the female. Experience goes to show that high fecundity or egg-laying power is linked up with the factor of maleness, so that the highest grade of laying-hen producing eggs, some of which will hatch into cockerels and others into pullets, transmits the high egg-laying capacity only to her sons and not to her daughters. The high-grade