

man desires, however, it has its drawbacks and disadvantages in that the introduction of new blood often brings undesirable characteristics that have a tendency to counteract the ideal for which the breeder is striving.

For the benefit of those who may desire to strain build in a more scientific way permission has been secured from Mr. I. K. Felch, Nantucket, Mass., to use a line breeding chart originated by him some years ago. This line of breeding is being successfully used by poultry breeders the world over. While this chart was produced particularly for the breeding of poultry it may be successfully applied to all kinds of live stock breeding where it is desired to preserve or develop certain qualities of the flock or herd.

In line breeding with this chart it is desirable that the male and female of the foundation stock be unrelated and possessing as far as possible the qualities that the breeder wishes to develop. By mating the foundation stock offspring is produced represented as (2) having one-half the blood of the original stock. By mating a cockerel of (2) back to the female parent and a pullet of the same flock back to the male parent offspring is produced as in (3) and (4) that on the one hand have three-fourths of the blood of the female parent and one-quarter the blood of the male, while on the other hand a family containing three-fourths of the blood of the male parent and one-quarter of the female is produced.

Continuing in this line a cockerel is mated from (3) back to the original female or in other words a grandson to the grandmother thus producing (5) and by opposite mating (7) in which case there is produced in (5) offspring containing seven-eighths of the female blood and one-eighth of the male and in (7) offspring containing seven-eighths of the male and one-eighth of the female. Again by mating a pullet from (3) with a cockerel from (5) the offspring (8) is produced having thirteen-sixteenths of the female blood and three-sixteenths of the original male blood.

It is contended by some English breeders that after reducing to one-eighth the blood of the original mating that blood to all intents and purposes becomes ineffective, thus by the third or fourth generation there has been developed two distinct lines from the original stock, which may again be subdivided as shown in (9), (11), (14) and (16).

If during this process of line breeding certain desirable characteristics on either side are being lost or for other reasons it is desired to return as nearly as possible to the original it can be accomplished by mating birds from (3) and (4) producing (6) which contains one-half the blood of each of the original stock. The same can be accomplished by mating (5) and (7) or (8) and (12), (9) and (11), or any offspring having an equal proportion of the blood of the original parents.

In line breeding it becomes necessary to exercise great care in selecting the most desirable specimens to build up the strains. Birds that lack the desired requirements or have not the vitality and constitution should not be used under any circumstances. Natural selection,