INBREEDING, LINE-BREEDING, OUTCROSSING

The following was taken from an article by Dr. León Sohn and is a condensation of practical breeding principles. Reprinted fron N.M.D.C. Digest 20th Anniversary Issue, June, 1972.

INBREEDING

By breeding father to daughter, half brother to half sister, son to mother, and by the closest inbreeding of all, brother to sister, stability and purity of inherited material is obtained. Specifically, inbreeding concentrates both good features and faults, strengthening dominants and bringing recessives out into the open where they can be seen and evaluated. It supplies the breeder with the only control he can have over prepotency and homozygosity. Inbreeding, does not produce degeneration; it merely concentrates weaknesses already present, so that they can be recognized and eliminated.

It is essential that the breeder have a complete understanding of the merits of inbreeding, for by employing it skillfully results can be obtained to equal those found in other animal breeding fields. You must remember that inbreeding in itself creates neither faults not virtues, it merely strengthens and fixes them in the resulting animal. If the basic stock used is generally good, possesing but few, and those minor faults, then inbreeding will concentrate all those virtues which are so valuable in that basic stock. Inbreeding gives us great breeding worth by its unique ability to produce prepotency and unusual similarity of type. It exposes the "skeletons" in the closet, by bringing to light hitherto hidden faults, so that they may be selected against.

LINE-BREEDING

This is a broader kind of inbreeding that conserves valuable characteristics of concentration and in a general sense gives us some control of type but a lesser control over specific characteristics. It creates "strains", or "families"within the breed which are easily recognized by their similar conformation.

Specifically, line-breeding entails the selection of breeding partners who have, in their pedigrees, one or more common ancestors. These individuals occur repeatedly within the first four or five generations, so that it can be assumed their genetic influence molds the type of succeeding generations. It is a fact that in many breeds success has been obtained by line-breeding to outstanding individuals.

One of the chief dangers of line-breeding can be contributed by the breeder of the strain. Many times the breeder reaches a point where he selects his breeding partners on pedigree alone, instead of by individual selection and pedigree combined, within the line.

OUTCROSS BREEDING

Outcross breeding is the choosing of breeding partners whose pedigrees, in the first five generations are free from any common ancestor.

For the breeder to exercise any control over the progeny of an outcross mating, one of the partners should be inbred or closely line-bred. The other partner should show, in himself and by the progeny test when bred to other bitches, that he is dominant in the needed compensations which are the reasons for the outcross. Greater uniformity can only be acheived if the outcross is made between animals of similar family type.

To sum up briefly, we find that in-breeding brings us a fixity of type and simplifies the breeding formula. It strengthens desirable dominants and brings hidden and undesirable recessives to the surface where they can be recognized and possibly corrected by Outcross breeding. When we have thus established definite improvement in type by rigid selection for wanted characteristics, we line-breed to create and establish a strain or family line which, in various degrees, insorporates and produces the improvements which we have attained.