

POULTRY

INBREEDING.

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LET us first define what we mean by the term, for we wish to be clearly understood, and undefined terms are a fertile source of misunderstanding. In a broad sense, inbreeding includes any mating a person may make of fowls of the same breed. If I breed Argonauts, as I do, and never use fowls of other blood than Argonauts, I am inbreeding. But it is not in this sense that I shall use the term. I shall restrict it to much narrower limits, and have it include only the breeding together of near relations, such as brother and sister, father and daughter, son and mother, uncle and niece, nephew and aunt. I mean by it the starting with a pen of fowls and breeding from the progeny of that pen, not going outside of the pen for fresh blood. It will be seen, therefore, that I use the word in a narrow sense, not in the broader way that it is sometimes used.

Is it harmful? Concerning this question I once had my positive ideas and believed that it was necessarily injurious to the stock, that it reduced size, impaired constitution, injured prolificacy and imperiled the very existence of the fowls. But experience and study have led me to believe that, while such results may and sometimes do follow a prolonged course of inbreeding, they are not a necessary consequence of the practice. Inbreeding of itself I cannot see is necessarily injurious, yet it often does produce injury. And the way it does, it seems to me, is as follows, "Fowls may have some latent defect or tendency, we cannot see it; they seem to be all right. It may be, for example, a slight weakness of the lungs. This weakness runs in the family. Now, if we breed from a male and female each having this weakness the progeny will inherit the weakness from both parents, and what is a mystery to me, this weakness seems to be increased when both parents possess it. The young birds will have weaker lungs than either of their parents. If we breed again from these young birds their chickens will bear this weakness still more intensified, until, by continuing the practice, the chickens will eventually be produced with such weak lungs that consumption, or a strong predisposition to it, will result and the chickens will waste away. They will not have the vigor necessary to

withstand even a slight cold. They will become worthless for practical purposes, and the same results follow, the continued increase of the defect, whatever that defect may be. If both parents had been perfectly strong and healthy, if there had been no latent defect, we might have gone on inbreeding for generations and the progeny remain sound and vigorous."

The converse of this, outbreeding, results in this way. Both fowls may have latent defects, one with a weakness of the lungs, another with perfectly strong lungs but defective in some other way. When mated together the one with strong lungs overcomes the weakness in this respect of its mate, while the other defect is overcome by the vigor in the same direction of its mate. One might illustrate this matter in a crude way, by imagining two boys at the end of a rope. So long as they pull in opposite directions, each having the same strength, the rope is not moved out of its place; that is outbreeding; but when the boys both pull in the same direction the rope moves rapidly forward in the direction of the pull; that is inbreeding. The illustration is of course not perfect, but it does shed some light upon the way these two methods of breeding operate.

But it is often of advantage to have the rope move. A breeder for example is trying to perfect the comb of his fowls. He has good combs and wishes to keep them. By selecting his best birds and breeding them together he gets a pull from both parents in the direction of the point he is after. But if he introduces fowls of the same variety but of another strain, where the comb has been neglected for some other point, he will lose this pull of both parents in the same direction and introduce a pull in the opposite. The rope no longer moves but comes to a standstill. Improvement in combs stops and will remain stopped until he can get both parents to pull in the same direction. Combs are used simply as an illustration of a single point to make clear the idea under discussion, but breeding is not so simple as this, many points have to be considered at once, and the breeder is tempted to remain within his own strain and breed together birds of close relationship in order to prevent the havoc that the introduction of antagonistic qualities is likely to produce. I think it can be safely said that no breeder of fancy poultry ever succeeded in producing birds of great exhibition merit who constantly changed from strain to strain in order to introduce perfectly fresh blood.

And yet there is danger in inbreeding. Inasmuch as latent defects cannot always be detected, inasmuch as most fowls have latent defects, the time is pretty certain to come when inbreeding must be stopped and fresh blood intro-