

fine them to uncomfortable quarters, and you will have no occasion for doctors, medicine or any patent nostrums, and your customers for your eggs will increase, and your eggs will multiply for your customers.

It is doubtful if any system of feeding will of itself break up a broody hen effectually. As far as feeding is concerned, the best plan is to give a scanty allowance for three days, and then commence a plentiful and stimulating diet, and place the hen in a small pen with a young and vigorous cock.

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POULTRY BREEDING.

BY H. S. BARCOCK, PROVIDENCE, R.I.

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INBREEDING.

THE term inbreeding may be so construed as to include the breeding together of relations however distant, or it may be limited so as to include only the unions of very near relations. It is advisable to define the term, so that just what is intended may be known, for otherwise mistakes will be liable to be made. It is probable that much of the conflicting evidence in respect to inbreeding is due to the want of definition of the term, for there can be inbreeding so distant that no ill effects could follow from it, as well as that which is so near that evil has been observed as the result. For the purpose of this article, inbreeding will be limited to near relations, those beyond the degree of first cousins being excluded.

Inbreeding so defined has been found to be promotive of weakness and disease, of loss of prolificacy and degeneration in size. Animals closely inbred for a number of generations have in some instances lost the power of reproduction. So much has this

been the case that even the advocates of inbreeding deem it necessary to warn against its long continuance. Now if it necessarily produces evil when long continued, it probably produces evil in a less degree when continued for a shorter time, and in a slight degree at the first incestuous meeting.

Two questions arise, first, does inbreeding produce ill effects, and second does it necessarily produce ill effects. The first question we have answered and in the affirmative; the second is a very different question and not so easily answered. Mr. Darwin collected a great number of instances of the evil effects produced by inbreeding, and if I understand him aright, he believed and taught as have his followers, that inbreeding necessarily was followed by degeneracy. Mr. Wallace, on the other hand, writing a quarter of a century later, and with fuller evidence, admits the ill effects of inbreeding as it is practiced but denies that it is necessarily an evil method of breeding. I am inclined to agree with Mr. Wallace for I think this doctrine reconciles the contradictory evidence upon the subject. That inbreeding is more or less followed by the breeders of thoroughbred animals and fowls can not be denied; that, often, even when continued for a number of generations, the results are not disastrous, cannot be controverted. But if it were necessarily injurious, the effects would always and everywhere be similar.

It seems to me that some such explanation as the following may be possible upon this point. It is well known that when two animals are united, having similar defects, there is a tendency for the defect to appear in the offspring in an exaggerated degree, and if two from such a mating are again bred together this defect will be further exaggerated in the resulting offspring. In the cases where degeneracy has

followed from inbreeding, may it not be true—since near relations are more likely than distant ones to have the same defect—that the two selected for breeding had similar defects which appeared in an exaggerated form in the descendants, and when this practice has been repeated the defect continually appeared in an increased degree, until in the end there was a loss of most of the desirable qualities; and on the other hand, when no defects were present in the parents, inbreeding produced no degeneracy in the progeny, so that if it were possible always to select perfectly healthy and vigorous parents inbreeding could be continued indefinitely and without loss of size, vigor, stamina, or prolificacy.

But the practical difficulty in the way of inbreeding is the impossibility of knowing whether the fowls so selected are free from defects. There are often hidden tendencies to weakness and disease that cannot be detected. We never can be certain that our pens of fowls are free from these tendencies, and, therefore, when we begin to inbreed, we need to be ever on the alert, and at the first symptom of weakness in the progeny we must immediately introduce fresh blood. A skillful breeder, with trained powers of observation, may be able to practice inbreeding successfully, but it is a course fraught with danger to the beginner. He cannot know just how far to proceed with safety, and is liable to detect the injury only when it is almost irreparable. It is therefore a safe rule for the beginner to avoid inbreeding. Let the veteran practice it, if he will, but the beginner is wise who avoids it.

Inbreeding is unquestionably the shortest route to the fixing of definite qualities, and the more closely related the fowls the quicker will their tendencies be brought into harmony. For this reason, fanciers find in it a temptation too strong to resist, and