

## BREEDING DOMESTIC ANIMALS.

There are some curious truths portrayed in the following interesting article, and while they are novel in character, they are equally fearless, and certainly worthy of close observation. We find the following in the *Ohio Farmer* :—

1. The question of breeding *in-and-in* is one of very great importance. It is known how much diversity of opinion exists in regard to it; with, I think, a general drift of public sentiment against it. What I have to say is the result of experience and very careful consideration of all the facts and principles involved; so far as I was possessed of them. Let it go as part of the means, by which others may make up a more reliable judgment.

2. There are two kinds of *in-and-in* breeding, which are, in my opinion, to be carefully distinguished from each other. That which is up and down; and that which is collateral. And then that which is collateral, is liable to produce very different results, according as the relationship is complete, or only partial. And again, that which is up-and-down, is liable to produce very different results, whether it is direct or immediate, or whether a generation or two intervenes. I will add, that far more depends upon the particular race of animals under question, where this matter of *in-and-in* breeding is to be decided, than is generally supposed.

3. A full brother and sister are just twice as much akin to each other, as either of them is, to either of its parents. They have the very same blood; whereas, each of them has only one-half of the blood of each parent. The breeding of a full brother and sister together, is therefore, twice as close in-breeding, as to breed either of them to either of their parents. The half-brother and sister, have exactly as much common blood, as the parent and issue; and cousins in the first degree, precisely as much as the grand parent and its grand issue. The great grandsire, or dam of an animal, has only one-eighth part of common blood with it; which is the same common blood as exists between cousins in the second degree. Many breeders would carefully avoid the former cross, while they would not think the common blood in the latter, worth considering.

4. It is at once curious and important to consider what an immense mixture of blood takes place in a few generations. An animal has one sire only; in the second degree two; in the third degree four; in the fourth degree eight; in the fifth degree sixteen. Here are five descents—the smallest number any one is content with, as proof of a pure pedigree. But in these five descents we have no less than 32 ancestors, male and female, whose blood is mingled in the veins of the single animal we are interested in. And if we will add a few more crosses, how rapid is the increase; in the sixth degree alone thirty-ancestors of both sexes;\* in the seventh degree, sixty-four ancestors of both sexes; in the eighth degree, one hundred and twenty-eight; in the ninth degree, two hundred and fifty six; in the tenth degree, five hundred and twelve. That is, at this tenth degree, which you will see so pompously insisted on, in multitudes of pedigrees, an animal can count 1054 ancestors; with the most remote of whom, he has the 2128th part of common blood! How is it possible for us to know any thing *special* of the personal peculiarities of the fiftieth part of these 1054 ancestors? How can we guess which one of them it may be, after which our animal is 'taken?' Let us be modest and reasonable about things involved in so much uncertainty, the moment we pass beyond great and general laws.

5. We are to remember, however, that this widening and ascending process must necessarily have an end, but in its last half must exactly reverse its first half. Take a bull descended from the bull Hubback, or a stallion descended from the Godolphin Arabian the two ends of these pedigrees will terminate on the points of two cones, of which the bases are united in the middle. You trace up to the widest number of ancestors; then you narrow in, and concentrate at last upon the original parent—say Hubback, or the Godolphin. Examine this carefully, and observe what an immensity of *in-and-in* was there was, in widening from the original starting point; and then how much more, in narrowing back to our animal. Consider what a vast proportion of Durham cattle with pure pedigrees, trace back to Hubback—what an immense mass of high bred horses, tra

\* This must refer to one sex only—either sire or dam.—*Ed. Ohio Farmer.*