

facts already mentioned; in the formation of the Manchamp breed of sheep two silky-wooled parents never failed to produce this characteristic in the offspring—because all were related and alike. On the other hand, two thorough-bred horses, not related, though carefully selected, very often produce the most variable progeny. It would seem, therefore, that the writer in question draws it rather strong when he says: "We insist that this claim is founded upon mere assumption—an assumption that is not only erroneous, but seriously prejudicial in practice. The claim rests upon the false assumption that the family has the distinctive characteristics usually attributed to a breed or race—that is, that all the members of the family are alike, and if interbred will produce this uniformity." What we contend, and what no amount of this kind of argument can overthrow, is that the members of a family, for the reasons given above, are much nearer alike and more apt to reproduce themselves in their offspring than are the different and unrelated members of the same breed; and that this resemblance and hereditary power will increase with the length of time they are in-bred.

It is, therefore, a settled conclusion among the more intelligent theorists and practical breeders, that *like parents produce similar offspring*, and that *unlike parents produce variable offspring*; also that we can never be certain that parents are *like*, unless they are related. Of course, where the characteristics which we desire have become the common attribute of a whole breed, and are regularly transmitted by it, it is folly to practice close in-breeding, because we will perpetuate individual defects without a chance of increasing the good qualities.

"Nothing of this sort has ever been attempted in breeding thorough bred horses," says the writer: "there is no record of Eclipse being bred to his own daughter or sister, or of any effort to establish a type by breeding the matchless Lexington to his daughters and grand daughters." But is it not true that "in the early pages of the stud-book we find constant instances of very close in-breeding, often carried to such an extent as to become incestuous?" Is it not true that Eclipse had nine distinct lines of White D'Arcy Turk in his veins? Is it not true that some of the most celebrated of these horses, from that day to this, have been the result of close in-breeding? So notorious are such facts, that Stonehenge considered the cause of a "hit" to be the *reunion* of lines that had been separated for a few generations, and believed that under other circumstances it would rarely occur. Again, Stonehenge says: "Let him ask what horses have been the most remarkable of late years as stallions, and,

with very few exceptions, he will find they were considerably in-bred." And the same is true of some of our best trotters; "yet when all is told," says Mark Comstock, "its (*i. e.*, the Hambletonian family's) greatest results are seen where it has doubled upon its own parent strain from Abdallah, and the more this is tried the better it seems to work."

Now, all this shows just what the advocates of line breeding contend, viz.: that the members of a family are more alike than the members of different families of the same breed, and they will more surely transmit their excellent qualities when bred together than when paired with families to which they are not related.

In regard to the disastrous effects of in-breeding, we can only say in this place that they have not followed in the hands of the best breeders. Predisposition to disease, or disease itself, is as readily transmitted by line breeding as good qualities, and if breeders allow their stock to become unhealthy, and still breed from it, according to this system, there is no cause for wonder if it is destroyed. And so, while it is true that incestuous breeding with swine has proved disastrous where they were confined without exercise, and heavily fed—where the predominance of the fat-producing function diminished the power of the locomotive and circulatory apparatus, and of the nervous system, calming all instincts and desires except that for food—it is equally true that line breeding has been followed with these animals in France, from time immemorial, without producing such results.

But what surprised us above all else in the article we are considering (*National Live Stock Journal*, July), is the example given to show that "sometimes the experiment (*i. e.*, line breeding) proves a success. The reference is to the bull Favorite, bred by Mr. Colling, and there is a very evident attempt to show that he was not the result of very close in-breeding. But why stop just as the interesting point is reached? We may admit that the breeding of Favorite was not an extreme case, though his parents were more closely related than half brother and sister; but if we tell the rest of the story—how Favorite was coupled with *his own dam*, and produced the cow Young Phenix, and how he was then coupled with *his own daughter*, this same Young Phenix, and produced the world-famed Comet—we must admit that there was not only close in-breeding, but wonderful success.

We do not wish to be understood as recommending the practice of line-breeding to all farmers, or even to all professional breeders, but there are certain cases where it is indicated and where it will produce the most important results. In-

stead of crying down a practice that has been of such assistance in the formation of our best breeds, it should be the aim of a great journal to point out its uses, and to show why it has so often proved disastrous. In-and-in breeding has won its present position, as a valuable aid to the breeder, against one of the most deep-seated prejudices that has ever filled the human mind. We now understand why, and how, it has produced its effect, and, although it may not be possible for it to enable us to achieve as great progress in the future as in the past, the intelligent breeder will continue to look at it as indispensable in certain contingencies.

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THE RHODODENDRON.

It has often been a source of wonder, that the idea that the most beautiful of all American ornamental plants—the Rhododendron—could not be grown in its native country could ever prevail; yet so universal is this belief, that though persistent efforts have been made by enthusiastic nurserymen, like Parsons of Flushing, and Hovey of Boston, to introduce it to public notice, and to show that they can be as well grown as any other plant, only a few yet realize the fact; and thousands of our readers do not know what a Rhododendron is.

In the hope that we could render a service to horticulture, by making these grand things better known, we have from time to time given hints as to their culture; but shall go into the matter more fully here, in order to make the chapter complete.

First, in regard to the successful culture of Rhododendrons. This is no longer a problem. The immense success of the plantations of Mrs. Harry Ingersoll, near Philadelphia, and Messrs. Hunewell, Rand and others, near Boston, besides numerous others in a small way in many other places in the Union, shows that nothing is wanting but the disposition to learn the peculiarities of culture required.

The great misfortune of our people is, that they believe that nature has placed everything in the best place; and thus, when they see Rhododendrons growing in the deep woods, imagine that *shade* is the first essential requisite in the culture of the Rhododendron. That nature has not placed things in the most favorable positions for their development, we showed so conclusively a few years ago, in a paper on the Red Maple, that no one has ventured a single objection against it. It is true she places them where there are the most favorable circumstances for existence, but not for ultimate vigor of growth. In the Red Maple, we find the tree generally in swamps; but yet the largest and best are always in high dry ground; but the