

back to the Godolphin. These are but illustrations; but they illustrate facts and principles of the very highest importance; and these cases are used only because they are notorious and unquestionable.

6. You may cut off the ears and tails of ten thousand rams, and yet after that, every one of them will beget lambs, with full ears and long tails. But if a ram chanced to be born without ears and without a tail, he is nearly certain to beget *some* lambs with these same peculiarities. And these of his get, are still more certain to beget others with these peculiarities; and the certainty increases with every generation. At length, you establish that variety of sheep. Occasionally, a tail and ears may come forth; just as occasionally, a black nose, in the Durham. It is in this manner that only congenital peculiarities are capable of being re-produced and perpetuated; and it is perfectly obvious that the more thoroughly you adhere to such as have the peculiarity, the more certain you are to establish and perpetuate it.

7. To a certain extent, therefore, all pure breeding is in-and-in breeding. If you step over a certain circle, within which all are of the same blood, you get back at one step, nearly to the point where some one started, perhaps a thousand years ago, with the primeval individual, with the accidental natural peculiarity, which now marks such, or such a race. Inside of this circle, within which you must confine yourself, in all pure breeding, there are many other smaller circles, all of which become more intensely affiliated to certain purities, or certain peculiarities; the innermost one of which, is the very closest in and-in breeding. It is the very same principle which runs all through. The only real question is, as to the wisest method of its application. Pure breeding, and in-and-in breeding, are the same thing.

8. The experience of the most successful breeders in all countries, has continually verified those results, which the fair theoretical analysis of the facts of the case establishes; and incontestably proves the clamor against in-and-in breeding to be in effect tantamount to a clamor against all thorough breeding.

In the first place, let us rest satisfied that beyond a doubt, our animal is half-blooded of his father, and the other half of his mother; and therefore, let us be perfectly certain who they are, and what they are; for half his blood is quite another thing, from the thousandth part of his blood. And in the next place, if thus produced from a father and a mother, that suited us—and if he or she also suits us—let us rest assured that we run no serious risk of being unsuited by pressing these suitable things a little further, watching as we go. The sire and dam of *Renick*, were full brother and sister; the closest possible. If all is well, we have thus intensified all the qualities we have obtained. Don't let it much quite so near; but don't fear. They say your stock will become barren. In more than thirty years, I never raised a barren cow, that was not a Free-Martin; and I have a cow at present that brought me four fine calves, at two births, in less than one year, and raised them all.

AGRICOLA.

A FRENCH STEAM-PLOW.—In Scheidtman's *Landwirthschaftlicher Anzeiger* ("Agricultural Advertiser,") a paragraph appears respecting a new steam-plow of French invention. To the question whether for tillage and draining by means of the steam engine, the English, after extensive and costly efforts, have given a practical solution, or whether their neighbor, their rivals in agriculture or art, the French, answer remains to be given. Lately a "steam-plow and drainage company" has suddenly appeared in Paris, which issues a circular containing the following paragraph:—"What the English have not brought to perfection, has existed in France for several years—at first imperfect, which, through experiments and sacrifices, has been perfected. It is constructed by brothers Barrat, and is called *la piocheuse* ('the pick-axer')—a machine which, from description, may be supposed to do its duty with a series of revolving or descending stocks. The machine is a locomotive, which carries itself over the soil, and digs it up to the depth of from 15 to 20 centimetres. It has no resemblance to a plow, and does its work better than any plow heretofore constructed. This solution of an important problem has cost the brothers Barrat much time and money; but they have gained their object, for they have just founded a company to carry out their invention. The capital is 500 million of francs, in 2,000 shares of 500 francs (\$100) each.