

A. It is the insertion of a bud only into a stem or branch of a different plant.

Q. Is there any law of nature against the general grafting and budding of trees upon each other?

A. God has limited this manner of increasing plants within due bounds, by ordaining that, generally speaking, those only can be best increased by grafting, &c., which are of the same species,* or family, or at least of the same general order or class.

Q. Can all plants of the same species, or within the same natural order, be multiplied by grafting, &c., one with another?

A. Yes; the hardy and the tender, the early and the late, the deciduous and the evergreen plants may be grafted on each other, but not very successfully, unless they have like constitutions.

Q. Why are any species or varieties of plants propagated by grafting or budding in preference to being raised by seed?

A. Because they are multiplied with more certainty, and in a shorter time, by those operations, than they could be from seed. Hybrids (which are among plants what mules are among animals) very rarely yield any seed at all; and if they do, their seed cannot be depended on for producing good plants. It is plain that a scion becomes a tree sooner than a seed can.

Q. How is it that bad or indifferent fruit trees, may be rendered productive of good fruit by grafting?

A. Their stems when cut down, serve for the stocks of new trees. Shoots of good sorts of fruits may be cut into a great number of little pieces; and every one of these, if grafted on one of the old stocks, may become a new tree, or a branch of a new tree, preserving its own natural fruit-bearing qualities.

APPLICATION OF CLAY, MARL, &c., TO SAND.

The newly discovered property of soils explains and confirms the variations in manuring operations which are made to suit the nature of the soil. Clay is the active substance in retaining manure, and sandy and gravelly soils not possessing a sufficiency of clay will be expected to be less retentive of manure. Such is the fact, and soils of this description are said not to "hold manure." On such soils manure must be applied more frequently and in smaller quantities than in stiffer soils, where, owing to the retentive power

of the clay, the manure for several crops may be safely deposited. If these inferences be correct, the only way of permanently improving a sandy soil is to clay it, and it is notorious that the light sands of some parts of Norfolk are only made to bear crops by copious dressings of clay. It may be observed in passing, that where a dressing of clay is required it very often happens that the substance at hand is a marl, of which more than half is carbonate of lime, which (that is, the carbonate of lime) cannot be supposed to be a substitute for clay, inasmuch as, although it is capable of improving the mechanical texture of a sand or a gravel, it has more of the chemical properties of combining with manure which clay possesses. In Norfolk this is frequently the case, and it would often pay the farmer to go a longer distance for real clay rather than apply that of inferior quality which lies under the surface.—PROFESSOR WAY.

LORD SPENCER'S RULES FOR THE SELECTION OF MALE ANIMALS FOR BREEDING.

THE first things to be considered in the selection of a male animal are the indications by which it may be possible to form a judgment as to his constitution. In all animals a wide chest indicates strength of constitution, and there can be no doubt that this is the point of shape to which it is most material for any breeder to look to in the selection either of a bull or a ram. In order to ascertain that the chest of these animals is wide, it is not sufficient to observe that they have wide bosoms; but the width which is perceived by looking at them in the front should be continued along the brisket, which ought to show great fullness in the part which is just under the elbows; it is also necessary that they should be what is called thick through the heart. Another indication of a good constitution is, that a male animal should have a masculine appearance; with this view a certain degree of coarseness is by no means objectionable, but this coarseness should not be such as would be likely to show itself in a castrated animal, because it thus might happen that the oxen or wethers produced from such a sire would be coarse also, which in them would be a fault. Another point to be attended to, not merely as an indication of a good constitution, but as a merit in itself, is, that an animal in itself should exhibit great muscular power, or rather that his muscles should be large. This is an usual accompaniment of strength of constitution; but it also shows that there will be a good proportionate mixture of lean and fat in the meat produced from the animal, the muscles being that part which in meat is lean. A thick neck is, in both bulls and rams, a proof of the muscles being large, and there can hardly be a greater fault in

* Generally, they must be of the same genus and species; that is to say, of the same nature and general characters: but there are many exceptions; for instance, the pear tree may be grafted on the hawthorn, and the hawthorn on the pear tree, though they are distinct in genus and species. They belong, however, to the same natural order, or general class. The more nearly related that plants are to each other, the better for budding and grafting them together.