

what the vegetative Principle is, or what those nutritious juices are by which the vegetable is made to grow and increase in bulk.

By the Original or Genesis of a vegetable is not here understood the common generation or propagation thereof by seed; but what that is in the seed which primarily gives form and essence to the plant, or how it comes to be or appear what it is. On this head the learned say much; and all, of late, agree that God, when he created the various kinds of vegetables, did even then also create and form every individual future plant belonging to every sort or kind, and included them in proper cases or seed one within another; so that the *original seed did really and formerly* contain in it all the future plants of its kind in inconceivable smallness or *miniature*: and therefore when any seed is planted, we are not to expect the production or creation which was not before in being, but only that the *Embryo* plant hath, by this means, power to vegetate, or to unfold and unravel its parts, to burst its matrix seed, to become visible, and to increase its bulk to its appointed dimensions.

This doctrine of generation of plants seems to be intimated by Moses, when he says, *And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after its kind, whose seed is in itself upon the earth.* But it is abundantly confirmed by microscopic observations and reasoning thereon; for not only all sorts of grain and fruit appear in due form and proportions of parts, by the Microscope, even in the bud, before the blossom is seen, but in the very seed, while yet on the plant; by the help of the microscope the plant of next year may be seen. For instance: take a full ripe bean, and view the *germen* with the glass, and you will plainly perceive it to be nothing but the stalk, leaves, &c., of the next year's plant in miniature. If therefore the plant of this year produces seed, and in that seed we descry the plant of the next year already formed, it is reasonable to suppose the seed of that small plant also contains another to be disclosed the second year, and that another for the third year, and so on *ad infinitum* or to the end of things.