

*vunt; animalia crescunt, vivunt, et sentiunt.* This climax, of Linnæus, is conformable to the doctrines of Aristotle, Pliny, Jungius, and others: But none of these great men have produced sufficient evidence, to support the negative characteristics, if I may so express myself, on which the three kingdoms of nature are here established. That a gradation subsists, in the scale of beings, is clearly manifest; but the higher advances we make in physical knowledge, the nearer will the degrees be seen to approach each other. And it is no very extravagant conjecture to suppose, that, in some future period, perceptivity may be discovered to extend, even beyond the limits now assigned to vegetable life. Corallines, madrepores, millepores, and sponges were formerly considered as fossil bodies: But the experiments of Count Marsigli evinced, that they are endued with life, and led him to class them with the maritime plants. And the observations of Ellis, Jussieu and Peysonel, have since raised them to the rank of animals. The detection of error, in long established opinions concerning one branch of natural knowledge, justifies the suspicion of its existence in others, which are nearly allied to it: And it will appear, from the prosecution of our enquiry into the instincts, spontaneity, and self moving power of vegetables, that the suspicion is not without foundation.

II. Instinct is a propensity, or movement to seek, without deliberation, what is agreeable to the particular nature, actuated by it; and to avoid what is incongruous or hurtful. It is a practical power, which requires no previous knowledge or experience; and which pursues a present or future good, without any definite ideas or foresight: and often, with very faint degrees of consciousness. The calf, when it first comes into the world, applies to the teats of the cow, utterly ignorant of the taste, or nutritious quality of the milk, and consequently, with no views, either to sensual gratification, or support: And the duckling, which has been hatched under a lien, at a distance from water, discovers a constant restlessness and impatience; and is observed to practise all the motions of swimming, though a stranger to its future designation, and to the element, for which its oily feathers, and web-like feet, are formed. Instincts analogous to these, operate with equal energy, on the vegetable tribe. A seed contains a germ, or plant in miniature, and a radicle, or little root, intended by nature to supply it with nourishment. If the seed be sown in an inverted position, still each part pursues its proper direction. The plumula turns upward, and the radicle strikes downward,

into the ground. A hop plant, turning round a pole, follows the course of the sun, from south to west, and soon dies, when forced into an opposite line of motion: But remove the obstacle, and the plant will quickly return to its ordinary position. The branches of a honey suckle shoot out longitudinally, till they become unable to bear their own weight; and then strengthen themselves, by changing their form into a spiral: When they meet with other living branches, of the same kind, they coalesce for mutual support, and one spiral turns to the right, and the other to the left; thus seeking, by an instinctive impulse, some body on which to climb, and increasing the probability of finding one, by the diversity of their course: for if the auxiliary branch be dead, the other uniformly winds itself round, from the right to the left.

These examples, of the instinctive economy of vegetables, have been purposely taken from subjects familiar to our daily observation. But the plants of warmer climates, were we sufficiently acquainted with them, would probably furnish better illustrations of this acknowledged power of animality: and I shall briefly recite the history of a very curious exotic, which has been delivered to us from very good authority; and confirmed by the observations of several European botanists.

The *dinæa muscipula* is a native of North Carolina. Its leaves are numerous, inclining to bend downwards, and placed in a circular order: they are jointed, and succulent; the upper joint consists of two lobes, each of which is semi-oval in its form, with a margin furnished with stiff hairs; which embrace each other, when they close from any irritation. The surfaces of these lobes are covered with small red glands, which probably secrete some sweet liquor, tempting to the taste, but fatal to the lives of insects: for, the moment the poor animal alights upon these parts, the two lobes rise up, grasp it forcibly, lock the rows of spines together, and squeeze it to death: and, lest the struggles for life should disengage the insect, thus entangled, three small spines are fixed amongst the glands, near the middle of each lobe, which effectually put an end to all its efforts: nor do the lobes open again, while the dead animal continues there. The dissolution of its substance, therefore is supposed, by naturalists, to constitute part of the nourishment of the plant. But as the discriminative power of instinct is always limited, and proceeds with a blind uniformity when put into exertion, the plant closes its leaves as forcibly, if stimulated by a straw or pin