

merit his attention, and he will find almost all he will ever meet with in nature, referable to one or other of these.

The first is the *spindle shaped root*, examples of which are met with in the common carrot and parsnip.

*Second.* The *Creeping root*, so denominated from its creeping along the ground and sending up stems at different distances. Of this kind we find examples in the strawberry and couch grass, &c.—It deserves to be mentioned that some of the plants which have been described by Botanists as having roots of this kind creep horizontally along the surface of the ground, and only send down a root at every point where a stem rises. In which case the creeping part commonly called a runner ought not to be classed among roots, being to all intents and purposes a stem.

The third description of roots are termed *branched roots*, which are separated into an indefinite number of branches, sometimes spreading under ground to a great extent. This is the most common kind in nature, being found in all trees and in many of the grasses.

The *Tuberos root* forms the fourth kind; and is composed of a knob attached to the stem by long filaments. A specimen of this sort is seen in the common potatoe. Under this description of root and as a variety of it, many writers have classed all those plants which have a knob, with a spindle shaped root descending from it, as in the Dutch lettuce and common turnip, while some Botanists have contended that where the stem or leaves are not attached to the knob by filaments and where there is a spindle shaped root descending from the knob they ought not to belong to this class of roots. The point seems not yet to be completely settled. I would for the sake of simplifying the subject to a student be inclined to yield to the former opinion and class both kinds under the name Tuberos roots, as no mistake or confusion can arise from such an arrangement.

The fifth and last kind of root deserving to be noticed, as forming a class is termed the *Bulbous Root*, consisting of a round bulb thickest at its lower end, from whence it generally sends forth a number of fine filaments as observed in the Onion and Narcissus. Of this description of roots we find two distinct varieties, one composed of scales overlapping each other like slates or tiles, as seen in the Bulbiferous lilly, the other formed of distinct coats placed within each other as in the onion.

The marks which distinguish these five different kinds of roots from each other are so obvious, that it is hardly possible for the most superficial observer to mistake a root belonging to the one kind for one of the other. The only two which have the least resemblance to each other, and where any such mistake has a chance of happening is in the Tuberos and Bulbous roots. But in addition to the differences between these which we above mentioned, it ought to be borne in mind that the knobs of the Tuberos roots have commonly small cavities in them from whence the buds spring, whereas the Bulbous roots are themselves buds and protrude the stem from the top of the bulb. Keeping these characteristic marks of each class in view, the Botanical student by a very moderate degree of attention will find no difficulty in recognising any plant he may meet with, as far as depends upon the formation of its root.