

excrementitious nature, injurious to the plants from which they have been separated; and which matters, therefore, cannot be absorbed again, till they have undergone decomposition. Such excreted matters have been adduced as the reason, why a soil becomes, sooner or later, so much deteriorated by any one species of plant, that it will not support other individuals of the same species: whence the necessity of a rotation of crops.

The principal ingredient in the sap of plants, as we have already stated, is water. The quantity of sap in some plants, is almost incredible; and not less so, is the force with which, on the approach of warm weather in our climates, and at the commencement of the rainy season within the tropics, that sap is determined upwards. The general composition of the sap varies considerably in different parts of the same plant. For instance, sap taken from the roots is little more than water; while the quantity of saccharine and other matters contained in the sap, increases in its progress along the stem to the higher parts of the plant. When the sap begins to rise, the leaves at the same time begin to be developed. From the leaves principally the watery portions of the sap are evaporated; and the evaporation is copious and unceasing. The more solid matters thus remain dissolved in a less proportion of water; and after undergoing further changes, in