

chemical action, which effect still greater changes. The nature of the agents by which these changes are produced are unknown, and are therefore referred generally to the vital energies of vegetation; but the process itself has been termed *Secretion*; and the organs in which it is conducted, and which are frequently very distinguishable as separate and peculiar structures, are called *Glands*. When the products of secretion are chemically analyzed, the greater number are found to contain a large quantity of hydrogen, in addition to that which is retained in combination with oxygen as the representative of water: this is the case with all the oily secretions, whether they be fixed or volatile, and also with those secretions which are of a resinous quality. Some, on the contrary, are found to have an excess of oxygen; and this is the condition of most of the acid secretions; while others, again, appear to have acquired an addition of nitrogen.

All these substances have their respective uses, although it may frequently be difficult to assign them correctly. Some are intended to remain permanently enclosed in the vesicles where they were produced; others are retained for the purpose of being employed at some other time; while those belonging to a third class are destined to be thrown off from the system as being superfluous or noxious: these latter substances, which are presently to be noticed, are specially designated as *excretions*. Many of these fluids find their way from one part of the plant to another, without appearing to be conducted along any definite channels; and others are conveyed by vessels which appear to be specially appropriated to this office.

The following are examples of the uses to which the peculiar secretions of plants are applied. Many lichens, which fix themselves on calcareous rocks, such as the *Patellaria immersa*, are observed, in process of time, to sink deeper and deeper beneath the surface of the rock, as if they had some mode of penetrating into its substance, analogous to that which many marine worms are known to possess. The