

their development, large additions of solid matter. These fibres are generally collected together into bundles or layers, and are accompanied by cells and vessels of various descriptions, and in different stages of transition. The density of the woody fibres increases in proportion as these incrustations are formed, till they have become nearly impervious; and have acquired a degree of rigidity peculiarly fitting them for the office of giving mechanical support to the fabric of the plant.* Their assemblage thus constitutes a kind of frame-work for the whole system, which may be regarded as the skeleton of the plant. Thus, what are called the *fibres* of leaves (Fig. 19,) are principally composed of these woody fibres, distributed in the manner best adapted to support the expansion of the soft and pulpy substance of those important organs.

Besides the minute cavities of the cellular tissue, there occur, in various parts of a plant, much larger spaces, apparently serving the purpose of reservoirs of particular fluids; but sometimes containing only air. Large air cells are, in particular, met with very commonly in aquatic plants, where they probably contribute to impart the requisite degree of buoyancy.

There are also contained, in the interior of vegetables, certain organs, denominated *Glands*, which are composed of closely compacted cells, and which perform the function of *secretion*, that is, the conversion of the nutritious juices into particular products required for various purposes in the economy of the plant.

The external parts of a living plant require protection against the injurious effects of the atmosphere, and of the moisture it deposits. For this purpose there is provided a membrane, termed the *Cuticle*, which is spread over the whole surface, investing the leaves and flowers, as well as

* By drying different specimens of wood in a stove, Count Rumford was led to the conclusion that the specific gravity of the solid matter which constitutes timber is nearly the same in all trees. He found that the woody part of oak, in full vegetation, constitutes only two-fifths of the whole bulk: and that ordinary dry wood contains above one-fourth of its weight of water. Thomson's *Annals of Philosophy*, I. 388.