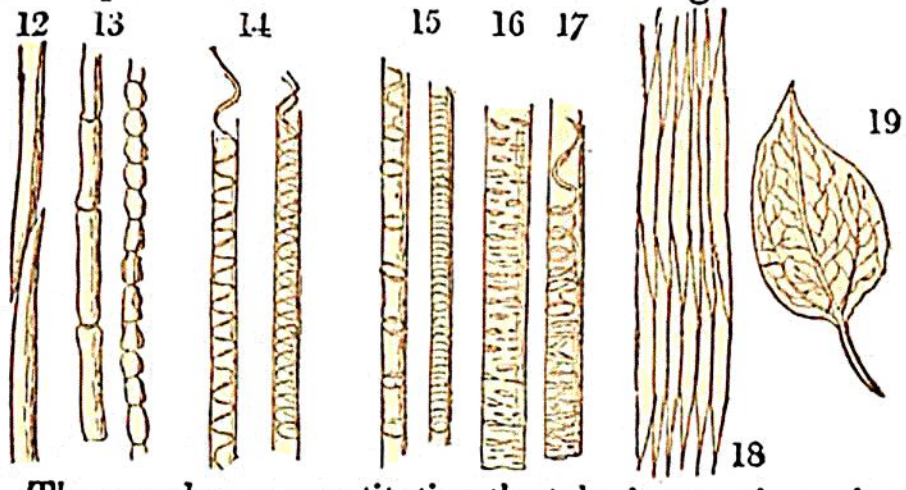
the names of *moniliform, jointed or beaded vessels.** Traces of the membranous partitions sometimes remain where their obliteration has been only partial, leaving transverse fibres. The conical terminations occasionally observable in the vessels of plants also indicate their cellular origin.†



The membrane constituting the tube is sometimes simple, like those of the simple cells: but it frequently contains fibres, or other internal coatings, corresponding to those met with in the more compound cells. The vessels in which the internal fibres run in a spiral direction (Fig. 14,) are denominated *trachea*, or *spiral vessels;* or, from their being found very constantly to contain air, they are often called *air tubes.* Their diameter is generally between the 1000th and the 300th part of an inch. These spiral, or air vessels, pervade extensively the vegetable system. The threads they contain are frequently double, treble, quadruple, or even still more numerous: they are of great length, and when the external membrane of the vessel is divided, they may easily be drawn out and uncoiled, their elasticity enabling them to retain their spiral shape. The object of this structure appears to be that of keeping the cavity of the tube always pervious, by presenting resistance to any external force tending to compress and close it.‡

* Mirbel gave them the name of "*Vaisseaux en chapelet.*"

† This theory of the derivation of vessels from cells was first advanced by Treviranus.

‡ Vessels are sometimes met with which appear to be formed simply by the coils of a spiral fibre in close juxtaposition, and unattached to any external envelope, or connecting membrane.