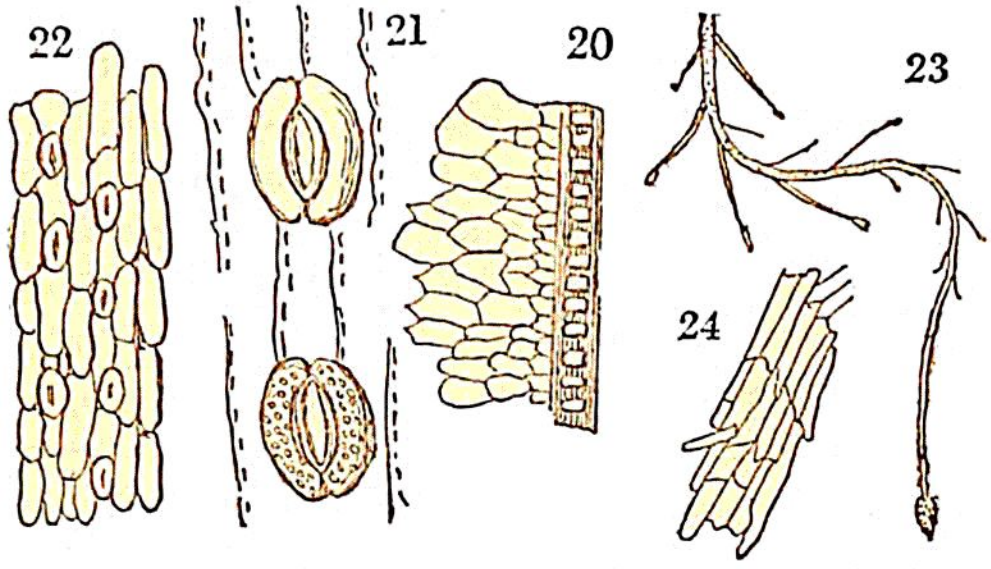
leaves of the *Ranunculus aquaticus*, when made to grow in the air, acquire stomata, but lose them entirely when growing under water. Stomata are wanting in all plants whose structure is wholly cellular.



Botanists are far from being agreed as to the precise functions which the stomata perform. Their usual office undoubtedly is to exhale water; but they probably also absorb air under certain circumstances, and in particular exigences.

The principal organs through which the fluids that serve for nourishment are received into the system of plants, are those situated at the extremities of the roots, where they are termed, from their peculiar texture, *spongioles*.* Of the functions of spongioles in absorbing fluids I shall have occasion to speak when treating of nutrition. But as the roots exercise a mechanical as well as a nutrient office, we should here consider them in the light of organs adapted to procure to the plant a permanent attachment to the soil, upon which it is wholly dependent for its supply of nourishment. It is scarcely necessary to point out how effectually they perform this office. Our admiration cannot fail to be excited when we contemplate the manner in which a large tree is chained to the earth by its powerful and widely spreading roots. By the firm hold which they take of the ground, they procure

* Fig. 23 exhibits the termination of a root of a willow in a spongiole; the arrangement of the cells composing which is shown in Fig. 24, from De Candolle.