

The *pith*, particularly, is remarkable. "It is a spongy or vesicular substance, according to Linnaeus, essential to the life of the vegetable. It gives birth to the buds. Some botanists of the first rank believe that it is, in a plant, what the brain and spinal marrow are in the inferior order of animals."

The vascular system is stated to be made up of three kinds of vessels :—"The sap vessels, which convey the sap-juice. They run perpendicularly, and pass principally between the wood and the bark ; and though imperceptible, they must pervade other parts.

"The proper vessels. which contain the peculiar scented fluids.

"The air vessels. These are found in the wood and in the alburnum, but not in the bark. They carry other fluids besides air."

In describing buds, he recognizes the fact that some give rise to the leaf and some to the flower, but continues :—"As many plants have no buds, it is evident that buds are not parts essential to a vegetable."

"Close observers of nature have remarked that, about midsummer, there is a kind of pause in vegetation, for perhaps a fortnight ; and it is believed that leaf buds may be changed into flower buds, and flower buds into leaf buds. The probability of this idea is confirmed, says the ingenious author of 'The Botanic Garden' (Darwin), by the curious conversion of the parts of a flower into green leaves."

The leaves he terms, as we do to-day, the lungs of the plant, and describes two sets of vessels in them, as in the human body, one to convey the sap to the surface to be acted upon, the other set to carry back the improved fluid. The varnish on leaves he claims to be beeswax.

His knowledge of the anatomy of the parts of the flower was, of course, very perfect, modelled as it was on the teachings of Linnaeus, but whenever he launches into theory he is lost—for instance, in discussing the secretions of the flowers :—

"An insect is nourished by honey. May it not be needful that the flower, during the process of fructification, should be nourished by honey from the nectaries ? Sugar is formed in the joints of the canes, for, perhaps, a similar purpose."