Prop-Roots of the Laburnum.

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With Plate XXIV.

In certain trees, such as the mangrove and screw-pine, as well as in lower-growing plants like species of *Stylidium*, the production of prop-roots has become a fixed characteristic feature. In the case of the tree forms mentioned, the prop-roots give the tree a much broader base and more points of attachment to the soft, slimy mud in which it grows, and they also form supporting buttresses which are better able than a single thick trunk to withstand the strain and stress of wind and waves. We have here an example of special adaptation to environment. When the tap-root and stem-base begin to decay they are replaced by the prop-roots. It is striking to find much the same kind of thing taking place in certain forest trees, where a damaged root-system is often made up for by the formation of adventitious roots around the stem-base. In some cases strong adventitious roots are produced at a considerable height from the ground; this may occasionally be seen in *Robinia Pseudacacia*. A few years ago a tree of this species near Edinburgh was blown down; the lower part of the trunk and root-system had been very much decayed, and after the fall there remained standing a strong adventitious root which had been produced in the neighbourhood of a cut-off branch some 12 or 14 feet from the ground. This root had grown down hidden from view between the bark and wood, which was totally decayed on one side of the trunk. On the sounder parts of the stem, at varying distances from the ground, several similar

[Notes, R.B.G., Edin., No. XVIII., August 1907.]

smaller adventitious roots had been formed; these, no doubt, served to support the tree and kept it supplied with water and food material from the soil.

A striking example of such prop-roots on a laburnum tree was found by the Regius Keeper in the Royal Botanic Garden here, by whose permission I obtained the accompanying photographs from which the illustration in Plate XXIV. is taken. The tree stands close into a hedge at the east side of the Rock Garden. The surrounding trees and shrubs make it impossible to obtain a full-sized photograph. The tree is very much forked, and at some time the stem has split from the lower fork down to the ground. There is no record of when this occurred, but, judging from the appearance of the wood, the split is an old one. The illustration gives a view of the base. It shows the split and decayed condition of the under part of the trunk. Two strong prop-roots have been formed, each arising in the angle of a fork some five or six feet from the ground. These roots branch and firmly anchor themselves in the soil around the base of the tree. An examination showed that the left half of the tree was kept erect principally by means of its prop-root. Unfortunately, during the storms of the winter of 1904-05, this portion of the tree was blown down.