

## THE WITCHES' BROOM OF *TABEBUIA PALLIDA* IN PUERTO RICO

By MELVILLE T. COOK, *Plant Pathologist.*

A witches' broom of *Tabebuia pallida* has been known for many years and has been attributed to several causes such as fungi and insects but without definite proof in any case. This abnormality develops during periods of rapid growth as numerous short shoots in which the leaves are smaller than normal. A few apparently normal shoots with normal leaves are usually present among the abnormal twigs. The nodes of the abnormal shoots are thick and the internodes short. A few flowers and an occasional short seed pod may appear in the broom. All the shoots are green for several weeks or months. This is followed by the death of some of the shoots and eventually the entire broom. A few new shoots may develop in the old broom during periods of active growth for years. In some cases the majority of branches on a tree develop these very unsightly brooms.

In the spring of 1936 the writer began a series of tests to determine the possibilities of this disease being due to a virus. Inoculations with the sap from diseased plants gave negative results. Budding with buds from diseased trees gave a low percentage of infections although the buds died. The studies indicate that the inoculations must be made during periods of active growths. The symptoms develop in three to four months after budding. The brooms usually appear at the nodes just above the points where the bud was inserted. After the formation of the first broom, other brooms will develop in other parts of the tree. These new brooms may develop on the branch in which bud was inserted or on other branches. The evidence indicates that the virus or active agent travels in both directions.

The illustration is the first broom developed by bud inoculation. The tree developed many brooms, some of them evidently from bud inoculations and others at other points.

Many seedlings have been grown but all of them apparently healthy. Therefore, it appears that the virus is not seed borne.

The source of infections in nature has not been determined but a leafhopper (*Protalebra tabebuiae* Dozier) lives in these trees and may be the vector.

Witches' brooms on many species of plants have been demonstrated as due to viruses. Some of the most important are potato (Hunger & Dana 1924 and Young 1926), strawberry (Zeller 1927), tomato (Young & Morris 1929) and *Holodiscus discolor* (Zeller 1930). Similar abnormalities such as rosette on several species of plants have also been demonstrated as due to virus diseases.

PLATE XI

