Diseases of the Coconut Palm*

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V.—FROND-DROP

The fifth disease of coconut palms to be considered in this series is frond-drop or false wilt. This abnormal condition, characterized by premature dropping of fronds, has been reported from Trinidad and Jamaica (1, 2, 4). Briton-Jones (1) termed the condition false wilt to separate it from the other diseases of the coconut palm. Nutman and Roberts (4) have recently termed the condition frond-drop.

The condition occurs in palms of all ages but appears to be more rapid and pronounced in young bearing trees (4). The first symptom is a collapse of the older fronds, usually while still green. The fronds hang down beside the trunk and the condition progresses until only a tuft of fronds remains in the upright position. The fruits, especially during heavy production, which may normally be supported by the fronds slip off and consequently some may fall prematurely. Rotting of the bud, which frequently accompanies other coconut diseases, does not necessarily occur with frond-drop.

Figure 2 illustrates a relatively young palm in Jamaica whose lower or older fronds have collapsed. A few of the fronds are still green, but most of them do not necessarily pass through a stage of yellowing. They may remain green, while collapsed, for several weeks and then turn reddish-brown and eventually fall to the ground (1). The inflorescences tend to become progressively smaller and produce fewer nuts, while the nuts thus produced tend to be smaller and elongated (4). The inflorescences upon opening dry up and blacken. The unopened inflorescences, unlike those affected by lethal yellowing (unknown disease), do not discolor (3, 4).

Figure 3 illustrates a more advanced stage of the disease in an older palm in Jamaica. Most of the fronds have collapsed, leaving only a few in the upright position. The diseased palm may be compared with the healthy one on the right in figure 3. It will be noted that the crown of a normal coconut palm is more or less spherical; as the older leaves die and drop from the tree, new leaves are formed at the apex and those in between bend downward to maintain the spherical appearance more or less constant. Any marked change in shape of the crown suggests that something is wrong. The contrast between the two palms in figure 3 is very striking and in this case it is indeed easy to locate the diseased palm. Such comparison is not always so readily available and the line of demarkation between healthy and diseased palms may be very narrow. In Florida, where the coconut palm is used mainly for ornamental purposes, this means of distinguishing a healthy palm is of little use. The lower or older fronds and many of the mature fruits are usually trimmed off as a safety precaution.

The etiology or cause of frond-drop is unknown, but some workers attribute it to a genetical weakness of the palm (1,

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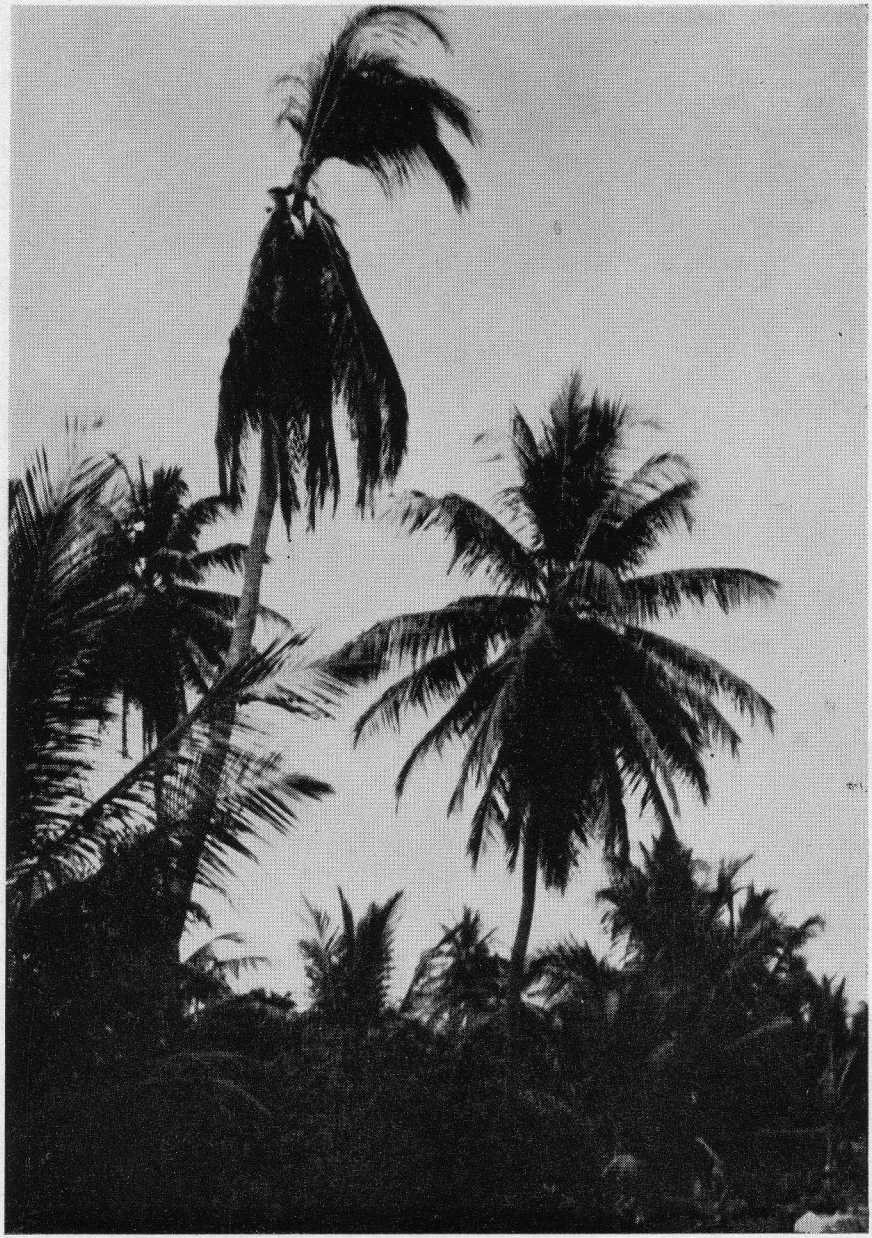
2. Young coconut palm in Jamaica exhibiting symptoms of frond-drop. Note presence of fruit.

2, 5). Briton-Jones (1) suggested that palms that normally have fronds with a long leaf stalk (from trunk to basal leaflets) also tend to have long fruit branches. Conversely, short fruit branches are correlated with palms having short leaf stalks. In the latter, the fruit are borne nearer the trunk and the weight of the developing fruit on the leaf stalks is not so great as in palms with long stalks and long fruit branches. He believes that this difference (genetically controlled), especially in years of heavy production, accounts in part for false wilt or frond-drop (1). Briton-Jones (1) suggests that heavy rains and high winds could have the same effect upon genetically weakened fronds of palms that are not in heavy production.

Briton-Jones (1) reports that palms may recover from the false wilt or frond-drop condition. Nutman and Roberts



3. Old coconut palm in Jamaica exhibiting symptoms of frond-drop. Note comparison with healthy palm at the right.

(4) report that in Jamaica they have never noticed a case of recovery from the frond-drop disease. Several organisms, mostly saprophytic (growing on dead or dying tissue), have been isolated from diseased palms, but according to Briton-Jones (1) they could not be responsible for this phenomenon. Nutman

and Roberts (4) have found a certain amount of root die-back, but not significantly more than that which occurs in a normal palm. Because the disease occurs on many soil types of varying fertility, they believe that the disease is not caused by any particular edaphic condition (4), nor could they find any fungus or bacterial organism associated with the frond-drop condition. Based upon their observations of field spread, binucleate cells, and the fact that the condition may occur in palms which are not of bearing age, they suggest that the disease may be the result of infection by an unknown virus (4).

Due to the lack of information concerning the cause and effect of the disease there are at present no recommended control measures.

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Brighter Botany Corner

Report on the promotion of growth of palm seedlings by an oil spray reminds us of the man who claimed he could always get action by greasing some palms.

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Palms on Postage Stamps

Claude Weber

The palms rank next to the cereals in importance as a source of staple food for millions of inhabitants of tropical regions. They also come next to the grass family in the number of stamps which represent members of the plant kingdom. Hundreds of stamps have been dedicated to palms, palm cultivation, palm industry, or show one or more palm trees as a feature of some scenery. It is often possible to identify the palms even if the name is not given, especially on modern stamps. A systematic review of the represented genera and species will indicate the characters which make the identification of palms possible. It is rather remarkable that in a family which includes over 200