

NEW AND INTERESTING IDENTIFICATIONS

Helminthosporium Disease of Manila Hemp

By L. B. THROWER, M.Sc.*

DURING the past few months this Department has received several inquiries concerning the prospects of establishing the manila hemp plant, *Musa textilis*, on a commercial scale in the Territory. In May, 1954, a disease, stem rot, was diagnosed on plants at Bubia and, later, the same disease was found on plants at the Lowlands Agricultural Experiment Station, Keravat. The purpose of this short article is to present a description of the disease, and to consider its influence on the development of a manila hemp industry in Papua and New Guinea.

This disease, which is caused by the fungus *Helminthosporium torulosum*, was first recorded from Luzon (Philippines) in 1931 where it occurred in a severe form; later in the same year a milder strain was observed in Mindanao. No report has been found of a serious outbreak since that time.

The first visible symptoms of the disease are small brown spots about one-tenth of an inch in diameter which appear on the outer sheath of the pseudostem. These spots enlarge, darken and become slightly depressed below the surface of the sheath; enlargement is more rapid along the longer axis of the sheath so that the larger patches are usually elliptical. By the time the lesion is one inch long it is already visible on the inside of the sheath. Further expansion occurs by enlargement of the individual lesions and by coalescence to produce necrotic areas up to twelve inches long by three inches wide with a sparse growth of brown mycelium at the centre. Simultaneously, the pathogen penetrates inward toward the centre of the pseudostem, and in severe cases, may reach the fifth or sixth sheath so that the pseudostem collapses under the weight of the foliage; however, as seen in this Territory, the disease rarely penetrates beyond the second sheath. Badly diseased plants are useless for stripping and fibre prepared from less seriously affected sheaths has disfiguring brown patches corresponding to the position of the lesions; the effect of the disease on fibre strength has not yet been investigated.

In addition to causing stem rot of the manila hemp plant, *H. torulosum* is also associated with two diseases of the banana, *Musa sapientum*, namely "black end" and "black spot". The former is a fruit disease of relatively minor importance which has been recorded in Queensland, while the latter is a leaf spot that has caused considerable losses in the West Indies. The degree to which these two diseases are present in the Territory has not yet been investigated but, obviously, the presence of abundant alternative hosts, in the form of the edible banana, makes eradication of the stem rot organism an impossible task.

Observation of plants at Keravat and Bubia have revealed considerable individual variation in resistance to stem rot, and future work must combine selection of resistant types from material already available within the Territory with the breeding programme aimed at obtaining greater fibre strength and other desirable characters.

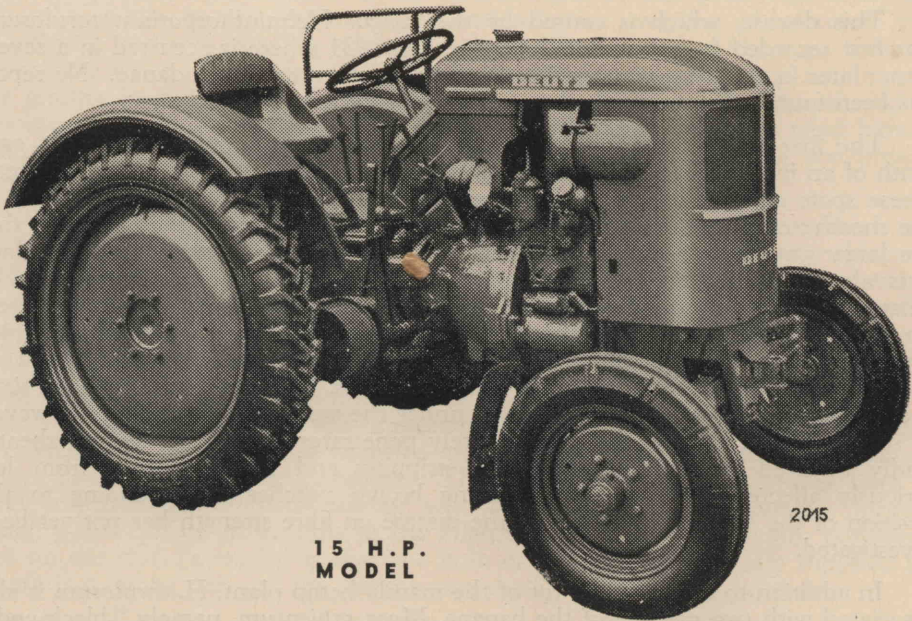
Finally, it must be emphasized that, although stem rot could cause serious damage to unselected plants, it does not constitute a problem comparable to that created by the two virus diseases, "mosaic" and "bunchy top", that have ravaged the manila hemp industry in other parts of the world. So far as can be ascertained, neither of these diseases is at present in this Territory, and every effort must be made to exclude them.

* Plant Pathologist, Department of Agriculture, Stock and Fisheries.



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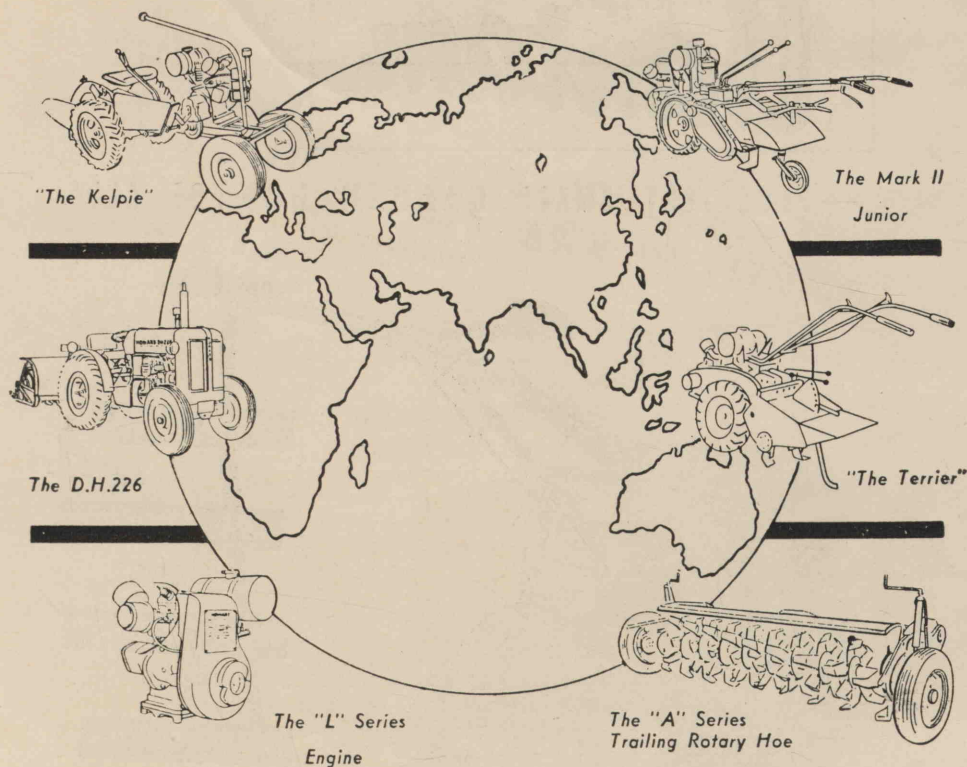
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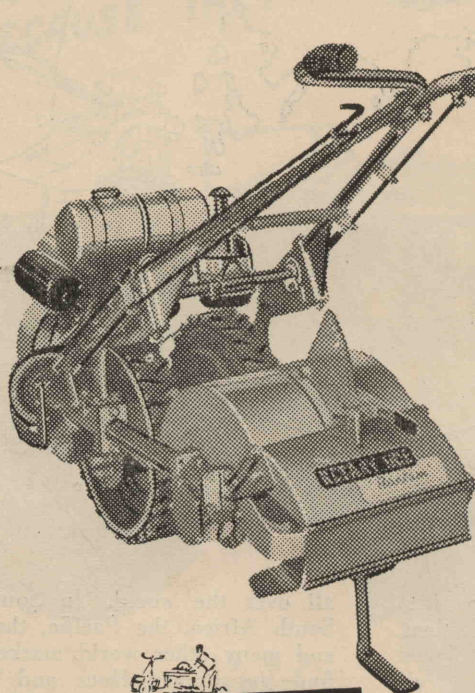
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