



FIG. 1. An infected twig of *Vanilla planifolia*.

FIG. 2. *Saula ferruginea* Gerst.

beetle sometimes leads to fungal attack of the exposed leaf tissue resulting in rotting of leaves. Severely defoliated plants are considerably weakened and become stunted in growth. The beetle was controlled by weekly applica-

tions of 0.1% malathion and by keeping the surrounding area clean of weeds and other plants.

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A Bacterial Blight Disease of Cardamom

We report here the occurrence of a new disease on cardamom [*Elettaria cardamomum* (L.) Maton] from Kalarikkal Estates, Vandemmettu, in the High Ranges of Kerala State, India. The first symptom of the disease is the appearance of elongated water-soaked lesions of varying sizes on the abaxial surface of young leaves. In advanced stages, the lesions become brown to dark in colour with a pale yellow halo. Generally, they develop near the leaf margin and progress towards the midrib. The leaves wither and as the

withering progresses the pseudostems wilt. New shoots around the third or fourth leaf stage also contract infection. Flowers produced after the incidence of disease fail to develop capsules. The panicles dry up from the tip downwards. Affected gardens present a burnt appearance.

Local enquiries indicated that these symptoms were being seen for the last few years and that the symptoms are better seen with the onset of rains. Further examination showed

that the disease existed in varying intensities in contiguous plantations from Peermade to Pampadumpara.

An examination of lesions on the leaves revealed the presence of *Curvularia* sp. and a gram positive rod-shaped bacterium identified as *Corynebacterium* sp.¹ Nutrient agar and cooked vegetable agar², containing leaf extract of cardamom, were used for the isolation of the bacterium. The culture plates were incubated at 15°C in a BOD incubator for 18hr. Pathogenicity trials with these organisms using potted cardamom plants revealed that only the bacterium was capable of inducing symptoms of the disease. One-year old cardamom seedlings were sprayed with an aqueous suspension of 18 hr culture of the bacterium since Klement³ has observed that the inoculation method which most simulated natural conditions consisted of spraying leaves with bacterial suspensions. Young leaves showed the initial symptom in less than 12 hr. A period of 3-6 days was required for the development of other typical lesions and the leaves withered within a fortnight. The pathogen was reisolated from initial as well as old lesions on the leaves. All the experiments were conducted in an air-conditioned room at 22-24°C temperature and 90-95% RH.

Agnihotrudu⁴ has reported the presence of a bacterium presumed as *Xanthomonas* in the pericarp of cardamom capsules and showing blister-like symptoms. But its involvement in pathogenesis has not been worked out. This is the first report of a disease of cardamom in which a bacterium is involved and its pathogenicity established.

We thank Dr. (Mrs.) K Radha, Plant Pathologist-in-charge, for guidance.

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Control of Arecanut Spindle Bug (*Carvalhoia arecae* Miller and China) Using Granular Insecticides

ARECANUT palm is infested by a capsid bug *Carvalhoia arecae*. Its adults and nymphs colonise the innermost two leaf-axils of the palm of all ages and suck up sap from tender parts of newly emerging spindle leaves. Like many other capsids, they inject saliva into the plant tissues while feeding. Probably due to its toxic nature, the affected tissues dry, and later when such leaves open, necrotic patches appear on them. Severe infestation

causes reduction in size of leaves, tapering of crowns of palms, loss in vigour, and reduced yield. Nair (1964) found that monthly sprayings of endrin 0.03% or folidol 0.02% controlled the pest. Heavy monsoons can wash off the sprayed insecticides very quickly and hence a trial was carried out using three granular insecticides. Its results are presented here.