

A. INTRODUCTION.

Virus diseases of cacao have been known to exist for twenty years. Among the first to be recognised, and certainly the most serious, is the "Swollen Shoot" disease of cacao in Ghana, the Ivory Coast, and Nigeria. This disease has caused extensive loss of revenue in West Africa; research and control are being conducted on a large scale, but its spread has not yet been checked. The virus is believed to have spread from members of the local flora to cacao as soon as they became extensively planted, in about 1915.

Cacao virus was found in Trinidad by Posnette (who demonstrated that Swollen Shoot was caused by a virus) at River Estate in November 1943 (11). The disease had apparently been present in the island for many years, but had passed unnoticed. Kirkpatrick (6), judging by its rate of spread, estimates its original appearance at River Estate at about 1935. However, its widespread occurrence throughout the Northern Range - the oldest cacao producing area in the island - may indicate a much earlier origin.

The virus is confined to Trinidad, and is not found in Tobago. Other cacao virus strains are present in the Caribbean Area : Posnette and Palma (12), while looking for the source of the Trinidadian cacao virus in 1944, noted a distinct leaf mosaic in cacao in the Paria peninsula of Venezuela, that may have been caused by a virus, and Ciferri (3) in 1948 described a "Narrow Wrinkled Leaf Virus" from the Cibao Valley of the Dominican Republic, which he considers to be identical to another from the Cauca Valley of Colombia. Pieris (10) in 1953 reported a virus similar to Trinidad Strain B from Ceylon.

So far, no alternative host plant has been found for the Trinidadian cacao virus. It is thought that Swollen Shoot

in West Africa spread to cacao from indigenous trees, such as Ceiba pentandra Gaertn, the Silk Cotton tree, and Cola spp., the Kola nut tree.

The relationship of Trinidadian cacao virus to the Swollen Shoot virus complex is uncertain. They have much in common - leaf symptoms, insect vectors, and rate of spread - all suggesting a possible relationship, but it does not seem likely that the virus has been inadvertently introduced from West Africa. (6).

It is not clear whether there are two viruses or two strains of one virus in Trinidad. A virus strain gives immunity to the host from other strains of the same virus, while two different viruses may exist together in the one host plant.

Baker and Dale (2) maintain that there are two strains, "A" and "B", but others ((7), (14)) believe that there may be two distinct viruses. "Strain A" and "Strain B" will be quoted in this review, as these are the usual names.

The virus appears to be the non-persistent type, as it has been carried by insect vectors only 33 minutes after feeding on the source of infection, and the ability to transmit the virus is lost 23 hours after removal from this source (6).