characteristically different even in the first foliage leaf that one can easily identify the variety even at the seedling stage with a first foliage leaf. The first foliage leaf of the lobed variety is invariably 3-lobed while that of the other variety is entire and cordate.

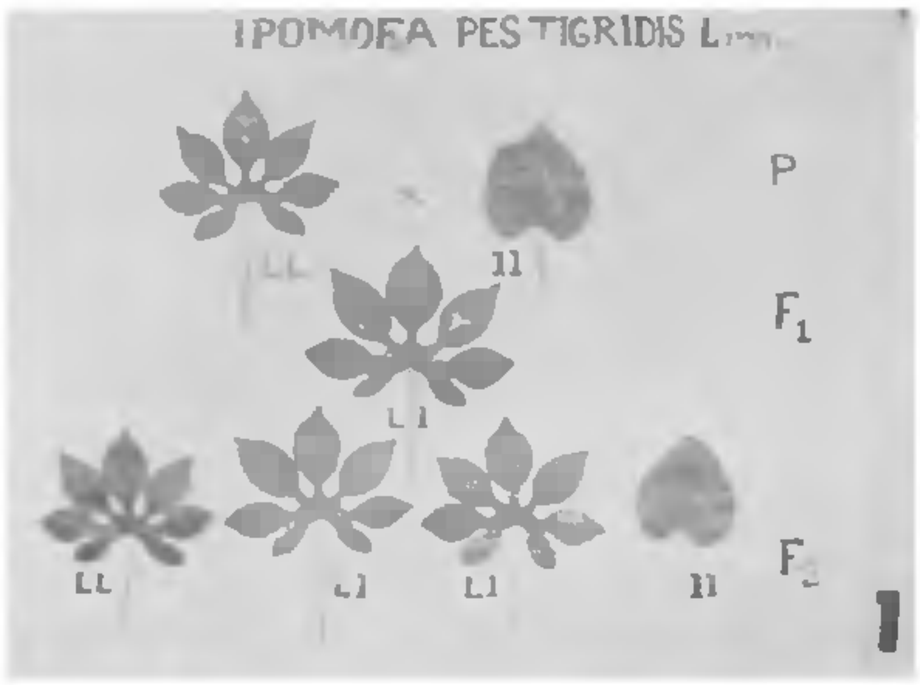

FIG. 1. Inheritance pattern of leaf shape in *I. pestigridis*.

The meiotic observations included the chromosome pairing study at metaphase-I, in the pollen mother cells of F_1 hybrids. The chromosome pairing at metaphase-I in the sporocytes of hybrids was as good as that of the parents, indicating a common genome for both the varieties. Fourteen clear bivalents have been sighted at metaphase-I in the PMCs of hybrids. Less commonly, 13 bivalents and two univalents were also sighted in a few pollen mother cells. The chromosome pairing studies in the hybrids clearly indicate that the two varieties are closely related.

I express my sincere thanks to Prof. K. Rangaswami Ayyangar for valuable guidance and to Mr. V. A. Parthasarathy, Faculty of Agriculture, for his useful suggestions.

Department of Botany, R. SAMPATHKUMAR.
Annamalai University,
Annamalainagar 608 101,
May 30, 1977.

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PURIFICATION AND SEROLOGY OF A VIRUS CAUSING MOSAIC IN *VINCA ROSEA* L.

A MOSAIC disease of periwinkle (*Vinca rosea* L) has been found to be of common occurrence at Delhi. The disease is characterised by mosaic mottling of the leaves accompanied by slight malformation (Fig. 1). The causal virus is sap transmissible and has a thermal inactivation point of 50–55° C, dilution end point between 1 : 800 and 1 : 900 and longevity *in vitro* of 24–48 hours at room temperature (25–30° C) and 5–6 days at 4° C[3]. Studies undertaken on the host range, purification, electron microscopy and serology to identify the causal virus are reported herein.

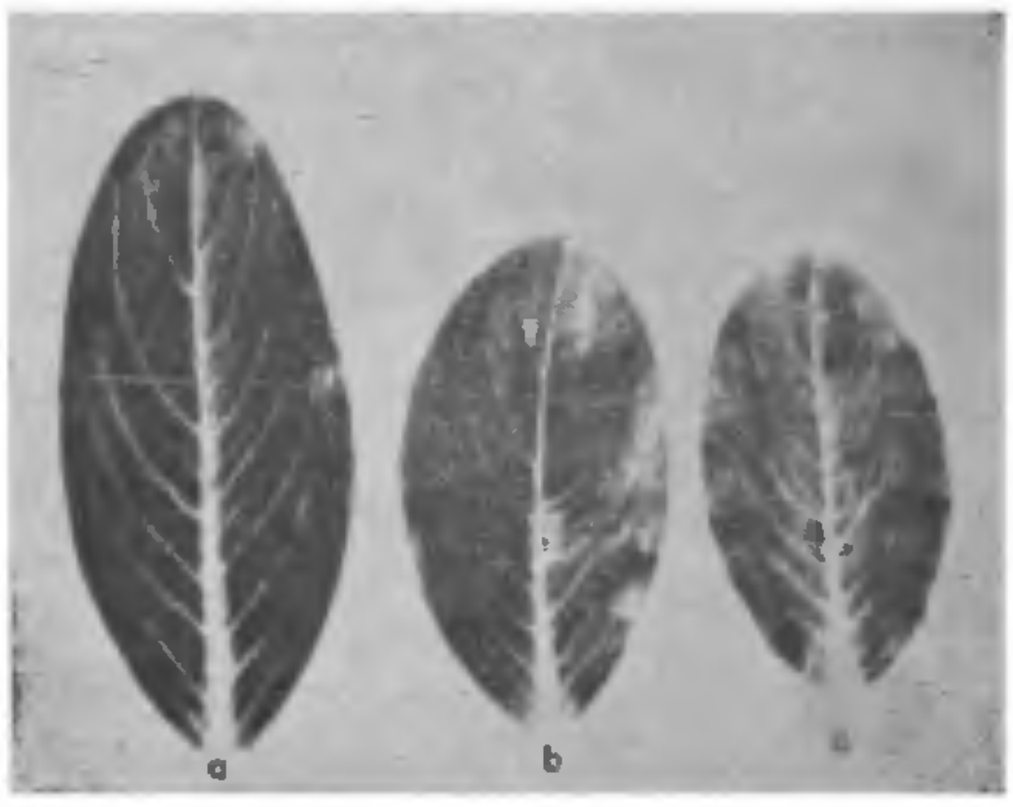

FIG. 1. Symptoms on *Vinca rosea* *a*–Healthy leaf. *b*, *c*–Diseased leaves.

The causal virus was found to be sap inoculable to *Nicotiana tobacum*, *N. glutinosa*, *Lycopersicon esculentum*, *Petunia hybrida*, *Lagenaria siceratea*, *Luffa cylindrica*, *Momordica charantia*, *Citrullus vulgaris*, *Cucumis sativus* and *C. melo*. The virus produced local lesions on *Chenopodium amaranticolor*. The virus did not infect *Gomphrena globosa* and *Barleria prionitis*.

The virus was purified using a modification of the butanol centrifugation method[4]. The infected leaves were mixed with 1·5 × w/vM/20 phosphate buffer (pH 7·5) containing 0·1% thioglycollic acid and minced in a waring blender. The extracted juice was passed through a double layer of muslin cloth and butanol added to 8·5% concentration drop by drop while shaking and the mixture stored for two hours. The mixture was then centrifuged at 12,500 rpm for 20 minutes in Soinco preparative Ultracentrifuge Model L and the supernatant filtered through Whatman filter-paper no. 1. This was then centrifuged at 30,000 rpm for 2 hours to pellet the virus. A second cycle of differential centrifugation at 12,500 rpm for 20 minutes and 30,000 rpm for 2 hours gave clear pellets of the virus which was suspended in a small quantity of M/30 phosphate buffer and clarified by a brief centrifugation at 7,000 rpm for 10 minutes,

The purified virus preparation was mounted on formvar coated copper grids and negatively stained with 1% phosphotungstic acid and examined in EM Philips 300. The electron micrographs (Fig. 2) revealed spherical virus particles measuring 30 nm in diameter.

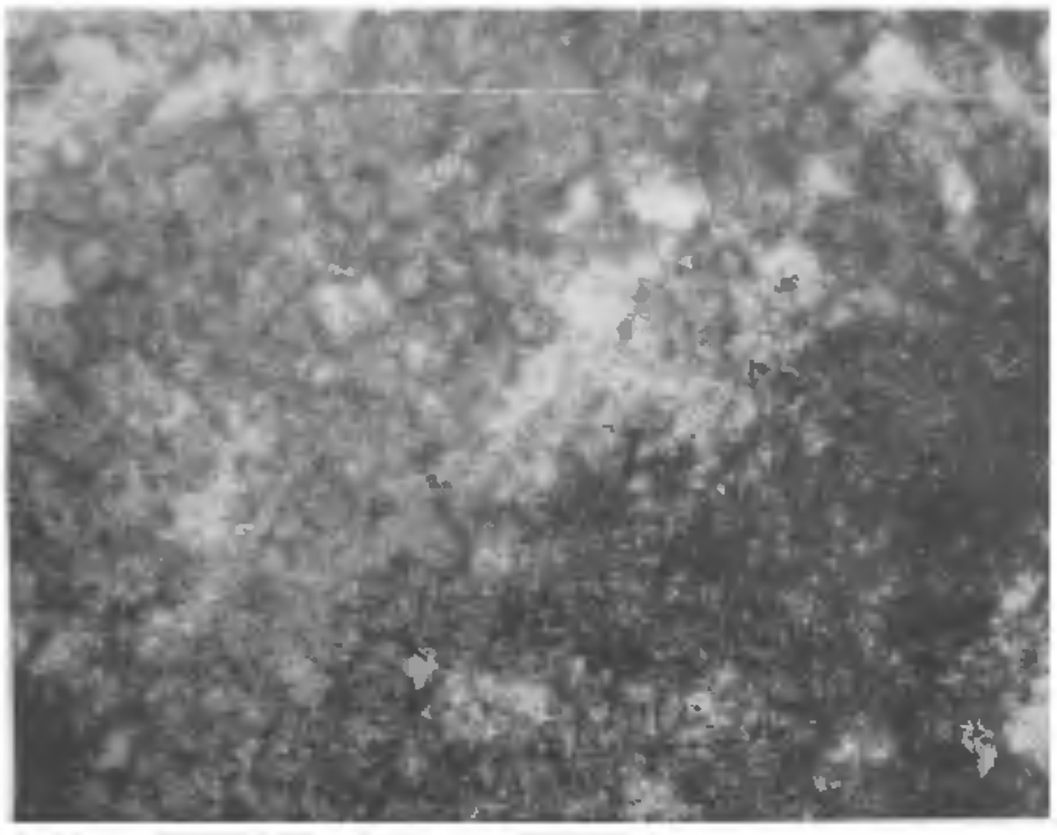

FIG. 2. Electron micrograph (PTA stained), × 168000.

The antiserum of the virus was prepared by giving three intramuscular weekly injections to a white albino rabbit with samples of purified virus preparations emulsified with Freund's adjuvant (Bacto) complete followed by an intravenous injection with 1½ ml of purified virus alone and bleeding the rabbit after 10 days following the last injection and separating the red blood cells by centrifugation at 7000 rpm for 15 minutes. The antiserum was specific and reacted with the diseased plant sap as well as purified virus preparations in precipitin tube tests but not with healthy plant sap. It had a titre of 1 : 16000.

The periwinkle mosaic virus reacted with an antiserum of a cucumber mosaic virus strain in precipitin tube tests suggesting its relationship with the latter. Van Regenmortel[6], Scott[5], Francki *et al*[2] and Dubey *et al*[1] reported the cucumber mosaic virus to be spherical with 30±1, 28–30, 28 and 29 nm in diameter respectively which is in close agreement with the size reported herein. Thus the physical properties, host range, particle morphology and serological relationships confirm the causal virus to belong to cucumo virus group.

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Division of Mycology & Plant Pathology, IARI, New Delhi-12.
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T. K. NARIANI.
S. P. RAYCHAUDHURI.
D. RAJYALAKSHMI RAO.
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OCCURRENCE OF *ASPERISPORIUM* LEAF SPOT OF PAPAYA IN INDIA

DURING dry months of (January to March) 1977, leaf spot symptoms were noticed on papaya plants of var. Coorg Honey Dew at the Horticultural Experiment Station, Chethalli and at Horticultural farm, Hessaraghatta, Bangalore and also on many locally grown papaya plants at Kushalnagar, Coorg. Samples collected from Palani hills of Tamil Nadu on Co. 1 also revealed the occurrence of the same symptoms in the area. From the initial surveys, it appeared that the malady is prevalent only during dry and hot months of the year. The symptoms are characterised by the production of numerous black velvety spots on the lower region of the leaves, which are minute, round to irregular in shape measuring upto 1–5 mm in diam. (Fig. 1). The corresponding lesions on the opposite side of the lamina are necrotic, yellowish to white with pale margin (Fig. 2). The disease is more severe on lower and older leaves causing quick pallor and defoliation. The infection gradually spreads upwards and ultimately results in defoliation of the entire plant. Such plants may put forth new leaves during next monsoon. Infection occurs rarely on fruits.

Since this genus is newly recorded for India, a brief description of the fungus is given below.

Asperisporium caricae (Speg.) Maubl. (Fig. 3) 1913 *Lavoura* 16 : 212.

Sporodochia hypophyllous, dark brown to black, conidiophores 30–45 × 6–9 μ. Conidia ellipsoidal, pyriform or clavate, almost always one septate, hyaline to mid pale brown, verrucose, 14–25 × 2–9 μ. This fungus closely resembles species of the genus *Stigmina* but differs in having sympodial conidiogenous cells with