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SCANNING ELECTRON MICROSCOPIC STUDY ON THE SPORE OF *LYGODIUM FLEXUOSUM* (L) SW.

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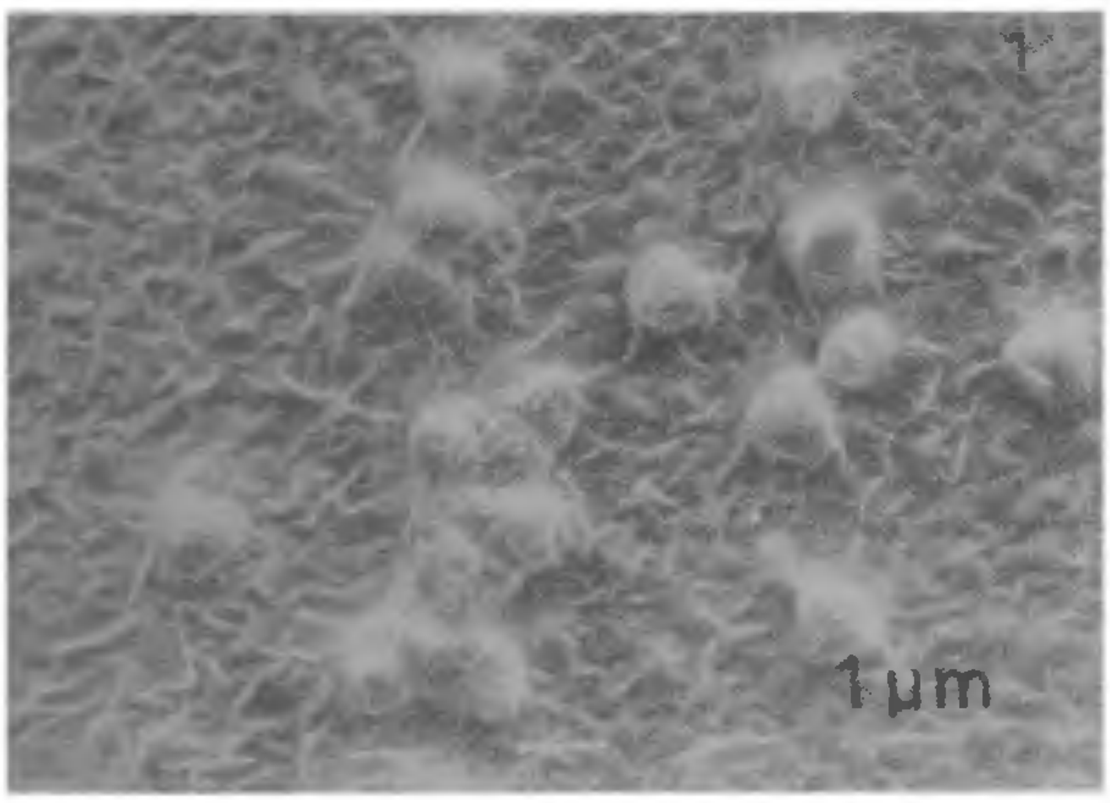
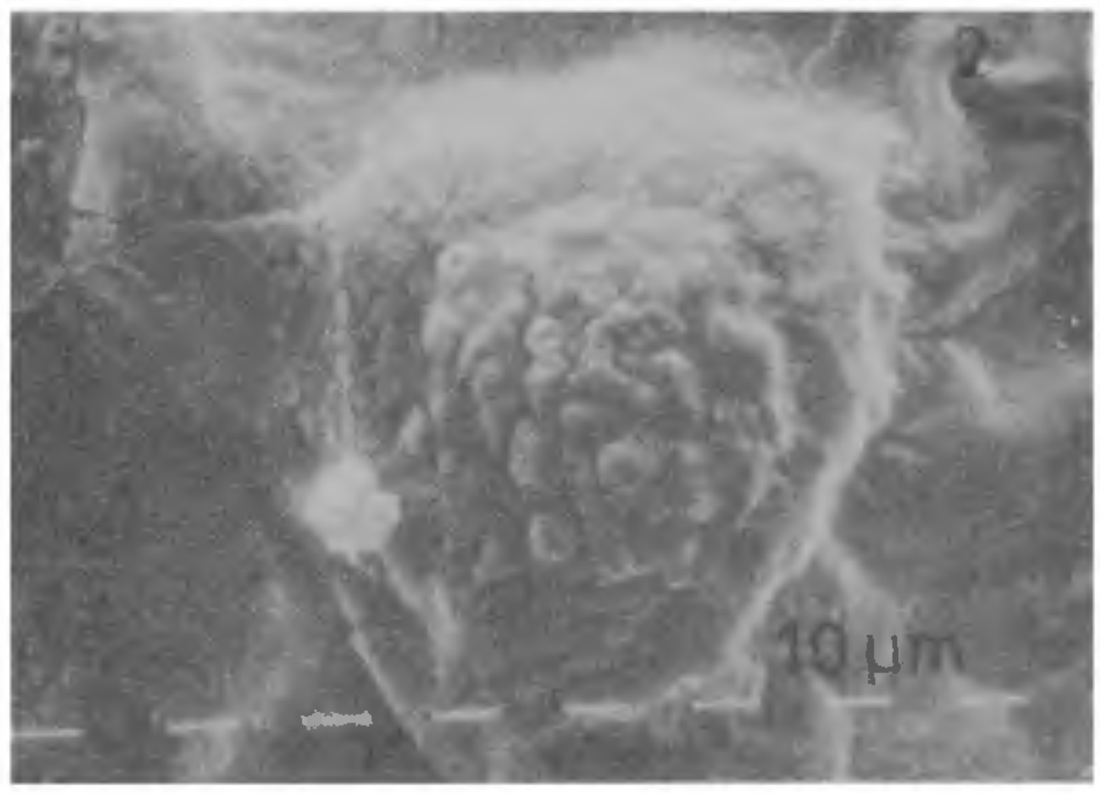
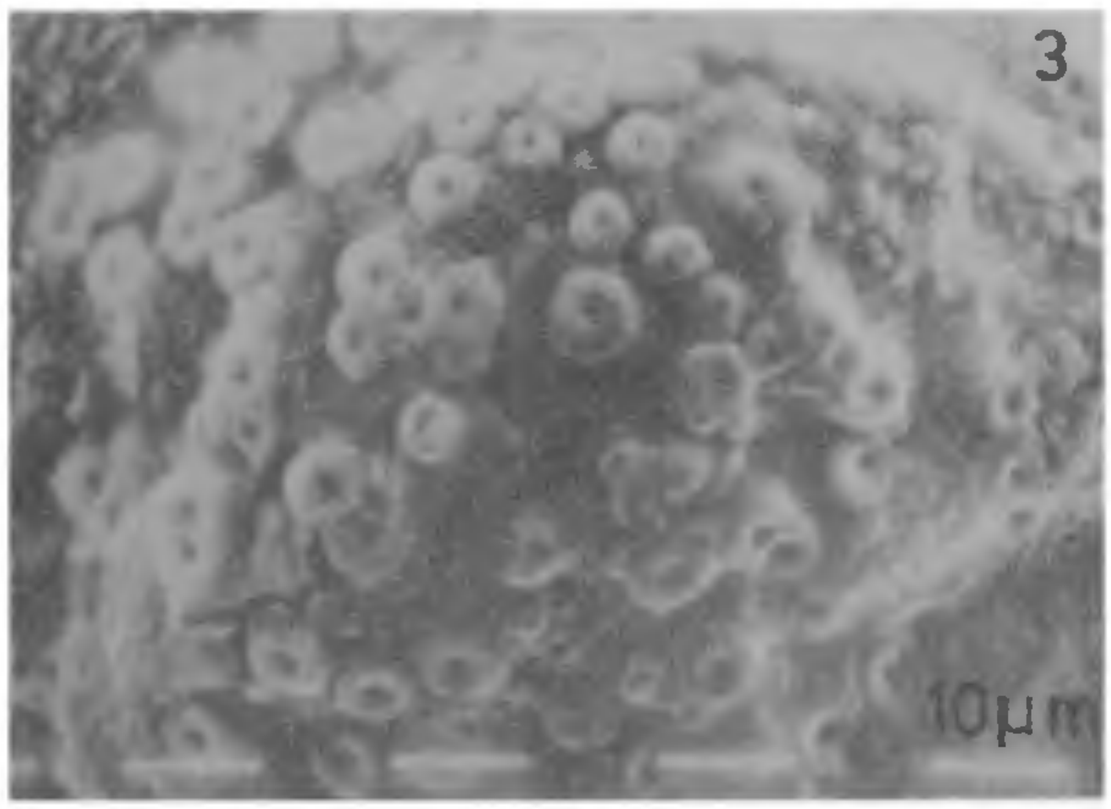
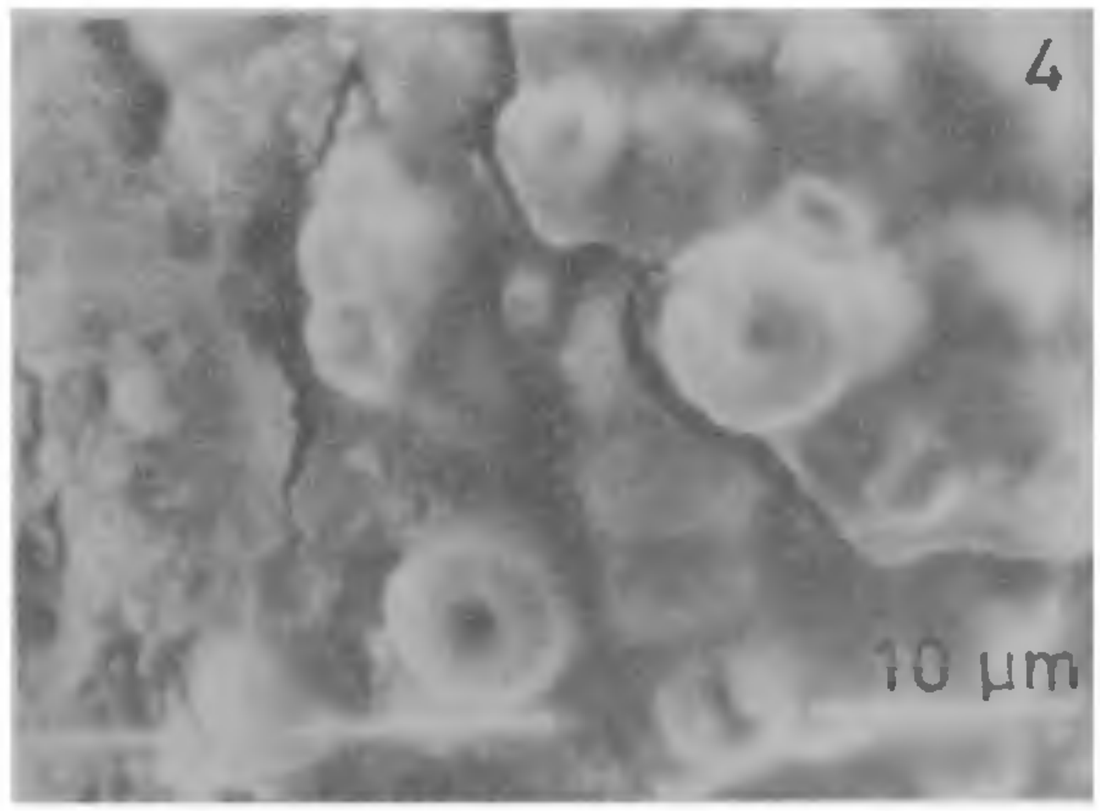
FOR a long time the morphology of the fern spore had been studied with the help of compound microscope. With the advent of scanning electron microscope (SEM) such studies have so far been extended to a few fern spores of temperate origin[1-3]. No SEM report has appeared on the tropical fern spores whose external coating may be modified according to climatic difference. Thus the present paper is a brief account on the SEM study of the spores of *L. flexuosum* from Singapore, a tropical country.









Figures 1–4. Scanning electron microphotographs of the spores of *L. flexuosum*. **1.** Spores scanned for details of morphology (× 80). **2.** Spores with granular and spherical depositions (× 640.) **3.** Spores with central pores in the granular and spherical depositions (× 1250) **4.** Granular and spherical depositions pore is smooth, concave and depressed from inside (× 5000)

The spores were mounted on aluminium stubs with organic glue and air-dried for 24 hr. These were then coated with 20–30 n.m. gold and were observed in SEM (Philips, Model 500).

The spores appear trilete and triangular with rounded corners and convex sides in equatorial view. Figure 1 shows the spore scanned for the details of the surface morphology which is found covered with granular and spherical depositions with variable number of pores in their centres (figures 2, 3). At higher magnification these pores appear smooth, concave and depressed from inside (figures 3, 4). In the same plant Chandra[4] reported wart-like protuberances which are densely distributed to form an areolate pattern. The present finding, therefore, differs from that of Chandra in matter of details of the exine morphology. Tryon and Tryon[3] have reported the occurrence of two types spores in the American species *L. venustum* and *L. heterodoxum* having relatively smooth base with more or less dense, spherical depositions and *L. volubile* and *L. cubense* with coarsely verrucate spore wall showing a prominent ridge connecting the laesurae. The present observation compares favourably with that of *L. venustum* with respect to the spherical depositions; while the centrally located pores constitute a distinguishing feature of the plant under investigation.

NL is grateful to CSIR, New Delhi, for a fellowship.

7 October 1985

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A NEW MIDGE GALL ON *IPOMOEA STAPHYLINA* R. & S. (CONVOLVULACEAE)

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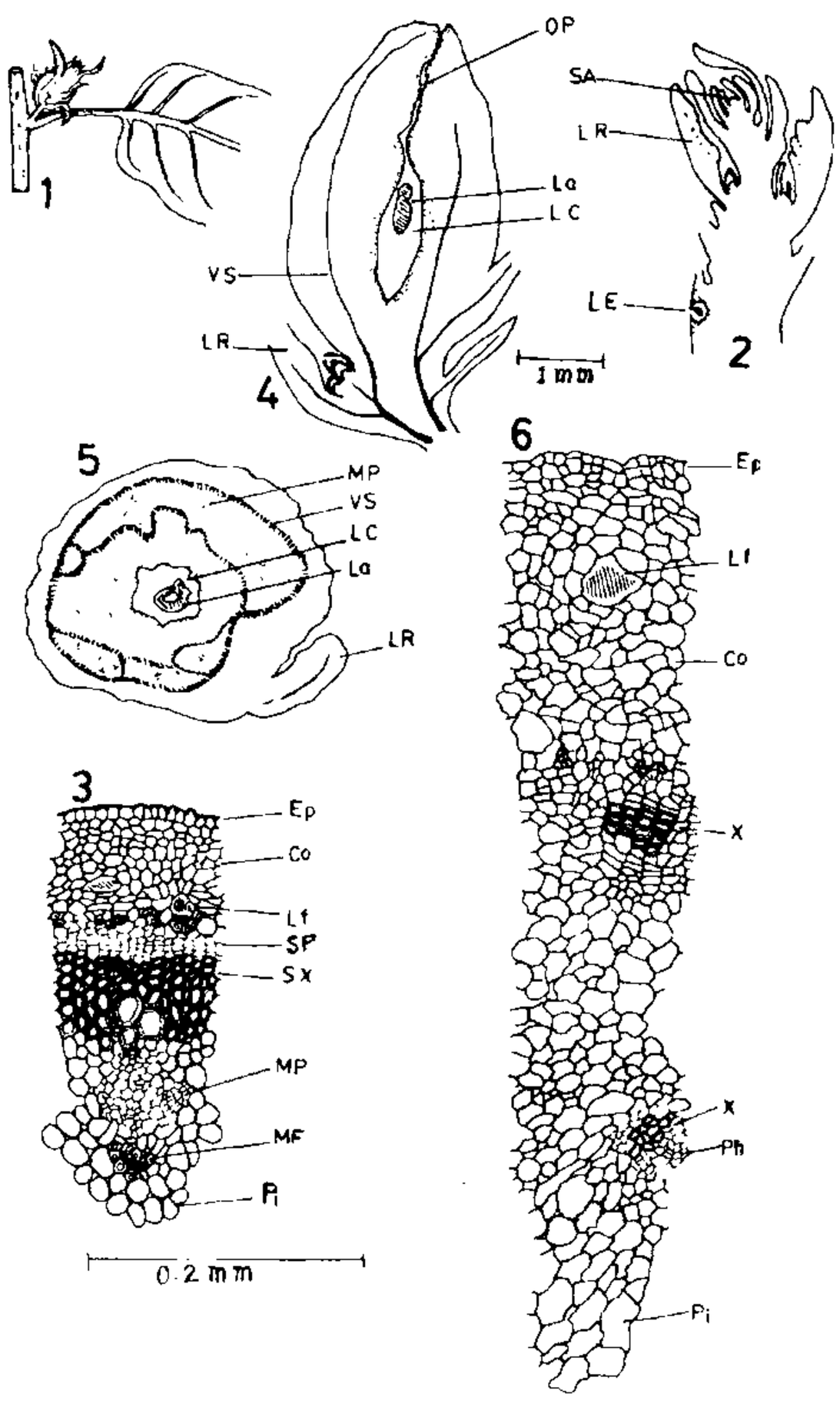
Two types of foliar galls have been recorded on *Ipomoea staphylina* R. & S. (Convolvulaceae), one of them being caused by a mite, *Eriophyes gastrotrichus* Nalepa (Acarina) and the other by the midge, *Asphondylia ipomaeae* Felt. (Cecidomyiidae)[1]. The structure and development of these two types of gall have been studied earlier[2]. The present account deals with a third type of axillary bud gall on *Ipomoea staphylina* by a different midge (Cecidomyiidae) which has been recorded for the first time. When compared



Figures 1–6. 1. *Ipomoea staphylina* R. & S. A node bearing the axillary bud gall with undeveloped leaves; **2.** L.S. of an axillary bud showing the entry of the larva into the axis; **3.** A sector of normal stem showing various tissues; **4.** L.S. of gall; **5.** T.S. of gall; **6.** A sector of the gall. (Co: Cortex; Ep: epidermis; La: larva; L.C; larval chamber; L.E: larva entering the cortex of the axillary shoot; Lf: laticifer; L.R: leaf rudiments; M.F: medullary fibers; M.P: medullary phloem; O.P: ostiolar passage; Ph: phloem; Pi: pith; S.A: shoot-apex; S.P: secondary phloem; S.X: secondary xylem; V.S: vascular strands; X: xylem).