periodic acid/Schiff's (PAS) reaction[2]; general proteins by mercury bromophenol blue (MBB) and naphthol yellow S (NYS) tests[2]; lipids by Sudan dyes[3]; lignin by azure B, Schiff's reagent and phloroglucinol/HCl tests[3]; and phenolic radicals by ethanolic ferric chloride[4]. The translators were also observed through a Zetopan-Binolux II, dark-field fluorescence microscope. Freshly dissected translators were treated in the acetolysis mixture[5]. Extraction for lignin was done in dioxan–HCl mixture[6]. Methanolic potash procedure was followed for the selective disintegration of cutin[6]. The translators were also treated with several lipid elution techniques[3,6].

There is no evidence for the presence of insoluble polysaccharides in the translator. The corpusculum and retinacula stain with Sudan dyes (Fig. 1 B), a characteristic response of lipids[3], cutin[2] and sporopollenin[7]. The main body of the corpusculum responds positively to azure B and Schiff's tests for lignin. Sporopollenin is also known to react like lignin during several cytochemical tests[8]. Therefore the positiveness of the main body of corpusculum to azure B and Schiff's reagents suggests that it contains sporopollenin-like substance and lignin. However, sporopollenin, unlike lignin, gives a negative reaction to phloroglucinol/HCl test. The translator does not respond to phloroglucinol/HCl test and is totally resistant to HCl/dioxan elution procedure for lignin. Only the main body of the corpusculum resists acetolysis (Fig. 1 D). Substances resistant to acetolysis are known to be sporopollenin, lipid, lignin, cutin or suberin[9]. With the exception of lipids, these metabolites are autofluorescent[9-12]. The main body of the corpusculum, like lipids, is acetolysis resistant, sudanophilic but non-autofluorescent (present work). The resistance of the corpusculum to several lipid elution procedures suggests that its lipids are in a stabilized state. In addition, the main body also possesses phenolic radicals accessible to ethanolic ferric chloride (*see* Fig. 1 C). The lateral blades of the corpusculum and retinacula disintegrate during acetolysis treatment but are sudanophilic and autofluoresce dull-white—suggestive of cutin. Like the latter[13], their material is strongly birefringent. However, the lateral blades do not respond to the methanolic-potash procedure, which usually extracts cutin. This indicates that cutin is also in a resistant and stabilized state. Only the retinacula of the translator respond positively to protein tests. Thus the cutinous retinacula appear to be impregnated with protein which may explain the well-known[1] hygroscopic nature of the retinacula.

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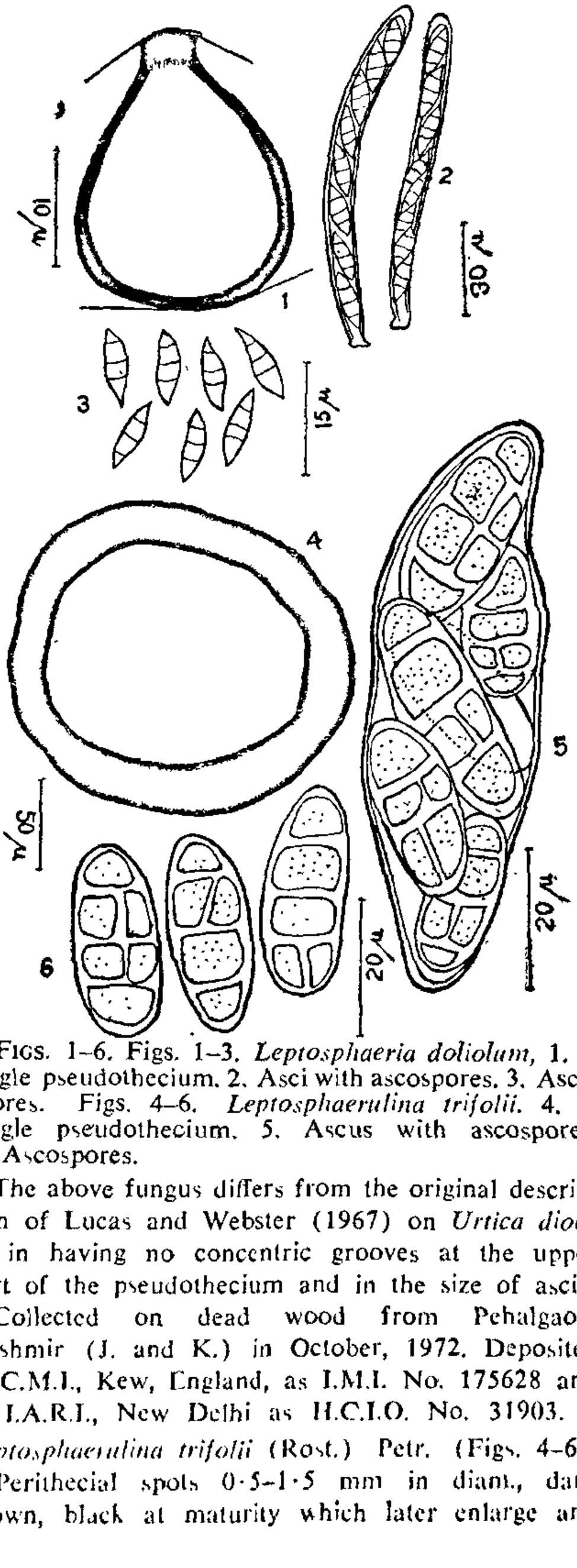
## *LEPTOSPHAERIA DOLIOLUM* (PERS. *EX* FR.) CES. AND de NOT AND *LEPTOSPHAERULINA TRIFOLII* (ROST.) PETR.—TWO NEW HOST RECORDS FROM INDIA

DURING our studies on Ascomycetes we recorded two fungi *Leptosphaeria doliolum* (Pers. ex Fr.) Ces. and de Not, which is reported for the first time whereas *Leptosphaerulina trifolii* (Rost.) Petr. on *Helianthus annuus* L., a new host record from India. All attempts failed to culture these fungi in the laboratory. These are most probably growing saprophytically on the above hosts. *Leptosphaeria doliolum* (Pers. ex Fr.) Ces. and de Not (Figs. 1–3).

Pseudothecia scattered, superficial, hemispherical, 442–494 × 403–455 $\mu$ black with a distinct round base. Pseudothecial wall black, hard, shining made

up of dense parenchymatous cells 58–87 $\mu$ in diam. Asci numerous, cylindrical, short stalked, bitunicate 96–117 × 7·5–10·5 $\mu$, eight spored, separated by pseudoparaphysis 120–150 $\mu$ in length. Ascospores 15–21 × 4·5–6 $\mu$ in diam., brown, uniseriate, fusiform, 3 septate, end cells pointed, straight or curved, slightly constricted near the septum and 2nd cell from the apex enlarged.




FIGS. 1–6. Figs. 1–3. *Leptosphaeria doliolum*, 1. A single pseudothecium. 2. Asci with ascospores. 3. Ascospores. Figs. 4–6. *Leptosphaerulina trifolii*. 4. A single pseudothecium. 5. Ascus with ascospores. 6. Ascospores.

The above fungus differs from the original description of Lucas and Webster (1967) on *Urtica dioca* L. in having no concentric grooves at the upper part of the pseudothecium and in the size of asci.

Collected on dead wood from Pehalgaon, Kashmir (J. and K.) in October, 1972. Deposited at C.M.I., Kew, England, as I.M.I. No. 175628 and at I.A.R.I., New Delhi as H.C.I.O. No. 31903.

*Leptosphaerulina trifolii* (Rost.) Petr. (Figs. 4–6).

Perithecial spots 0·5–1·5 mm in diam., dark brown, black at maturity which later enlarge and coalesce forming irregular patches, 80–156 × 68–140 $\mu$, surrounded by a thick layer of pseudothecium made up of parenchymatous cells. Pseudothecial wall 4·5–12·5 $\mu$ in diam. Asci clavate to cylindrical, thick walled, bitunicate, eight spored, 64–70 × 24–28 $\mu$. Paraphysis and paraphysoids lacking. Ascospores 18–32 × 7–12 $\mu$ in diam.

Collected from the leaves of *Helianthus annuus* L. from Poona, Maharashtra in October, 1972. Deposited at C.M.I., Kew, England, as I.M.I. No. 190112 and at H.C.I.O. No. 31902.

The above description of the fungus tallies with the original description as given by Satya and Rajalakshmy (1964).

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## A NEW STRAIN OF ALFALFA MOSAIC VIRUS FROM *PRIMULA OBCONICA*

DURING the survey for Primula strain of alfalfa mosaic virus (AMV)[1], some plants of Primula (*Primula obconica*, Hance), showing slight stunting of growth and a few scattered mild chlorotic diffused spots around leaf veins, were observed. The causal virus was found sap transmissible and produced typical symptoms of AMV[1], *i.e.*, dark brown lesions on *Phaseolus vulgaris*, L. var. Pinto (Fig. 1). But it did not infect the other two susceptible plants, *i.e.*, *Nicotiana glutinosa*. L. and *Datura stramonium*, L.

The virus culture was maintained on Primula plants. Its standard inoculum was prepared in 0·1 M phosphate buffer by the usual method. Healthy seedlings of different host plants were inoculated with virus using carborundum (400 mesh) as an abrasive. The inoculated plants were washed with water and kept in the glass-house (13–30° C) for about a month for development of symptoms. Symptomless plants were checked by back inoculation on bean plants. Electron-microscopy of the virus was done with partially purified virus preparation using carbon coated grids stained with 1% phosphotungstic acid.