

from A, B and D and higher lengths from E and G. The longer trichomes may act as a filter against atmospheric pollutants, especially particulate matter. Several trichomes in populations of polluted environments were thought to be 'barbed', providing extra landing sites to the particulates which might hitherto clog the stomata and adversely affect the process of gaseous exchange.

The comparisons made in this study indicate that the leaves of *P. roxburghii* undergo modification in the leaf-surface pattern which are of adaptive significance in the polluted atmosphere. It has been theorized that many plants adapt to low levels of pollution<sup>13</sup>. Hence, it is postulated that these patterns may be indicative of the extent of air-pollution. Further investigation of additional taxa would help to establish these tentative relationships on a broader basis.

15 June 1987

1. Chamberlain, C. J., *Gymnosperms: structure and evolution*, Dover, New York, 1934.
2. Scheffer, T. C. and Hedgcock, G. G., *US Dept. Agric. Tech. Bull.*, 1955, 1117, 1.
3. Solberg, R. A. and Adams, D. F., *Am. J. Bot.*, 1956, 43, 755.
4. Duggar, W. M., Taylor, O. C., Cardiff, E. and Thomson, C. R., *Plant Physiol.*, 1962, 37, 487.
5. Feder, W. A., *Environ. Pollut.*, 1970, 1, 73.
6. Au, S. F., *Ecology*, 1969, 50, 131.
7. Sharma, G. K., *Swest. Nat.*, 1972, 17, 221.
8. Sharma, G. K. and Butler, J., *Environ. Pollut.*, 1973, 5, 287.
9. Sharma, G. K. and Tyree, J., *Bot. Gaz.*, 1973, 134, 179.
10. Sharma, G. K., *Can. J. Bot.*, 1975, 53, 2312.
11. Bhiravamurthy, P. V., Kumar, P. V., Rethy, P. and Anuradha, Y., *Symp. Biomonitoring State Environ.*, 1985, p. 249.
12. Sharma, G. K., *Water, Air, Soil Pollut.*, 1977, 8, 15.
13. Bennett, J. P., Resh, H. M. and Runeckles, V. C., *Can. J. Bot.*, 1974, 52, 35.

## NEW RECORDS OF COELOMYCETES FROM INDIA

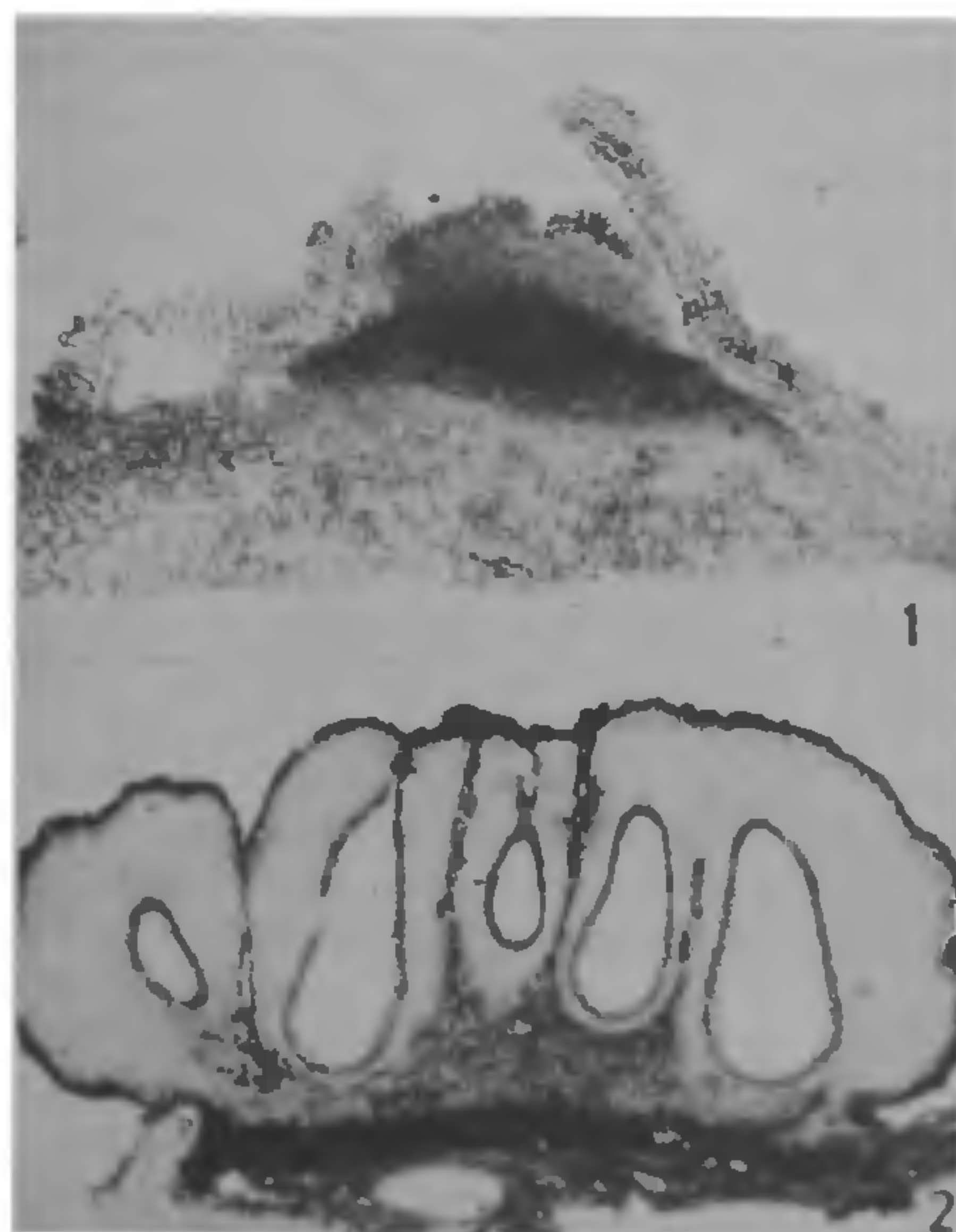
J. MUTHUMARY (ALIAS) KALAIIVANI

CAS in Botany, University of Madras, Madras 600 025, India.

DURING the course of our study on Coelomycetes from South India several interesting fungi were collected. Two of these coelomycetes hitherto unrecorded from India are briefly described and illustrated in this paper. *Coryneum modonium* (Sacc.) Griff. & Maubl. and *Waydora typica* (Rodway) Sutton are being reported for the first time from India.

1. *Coryneum modonium* (Sacc.) Griff. & Maubl., *Bull. trimest. Soc. mycol. Fr.* 26:379 (1910); Sutton, B. C. *Mycological Papers* 138:38-40 (1975), (figures 1 and 3a, b).

Conidiomata aceruvular, abundant, sub-peridermal, scattered, rupturing the periderm, flat and effuse, 800-1000  $\mu$ m in diameter, dark brown, composed of thick-walled, brown, textura angularis



Figures 1 and 2. 1. *Coryneum modonium*. Vertical section of aceruvular conidioma ( $\times 250$ ); 2. *Waydora typica*. Vertical section of stromatic conidioma ( $\times 250$ ).

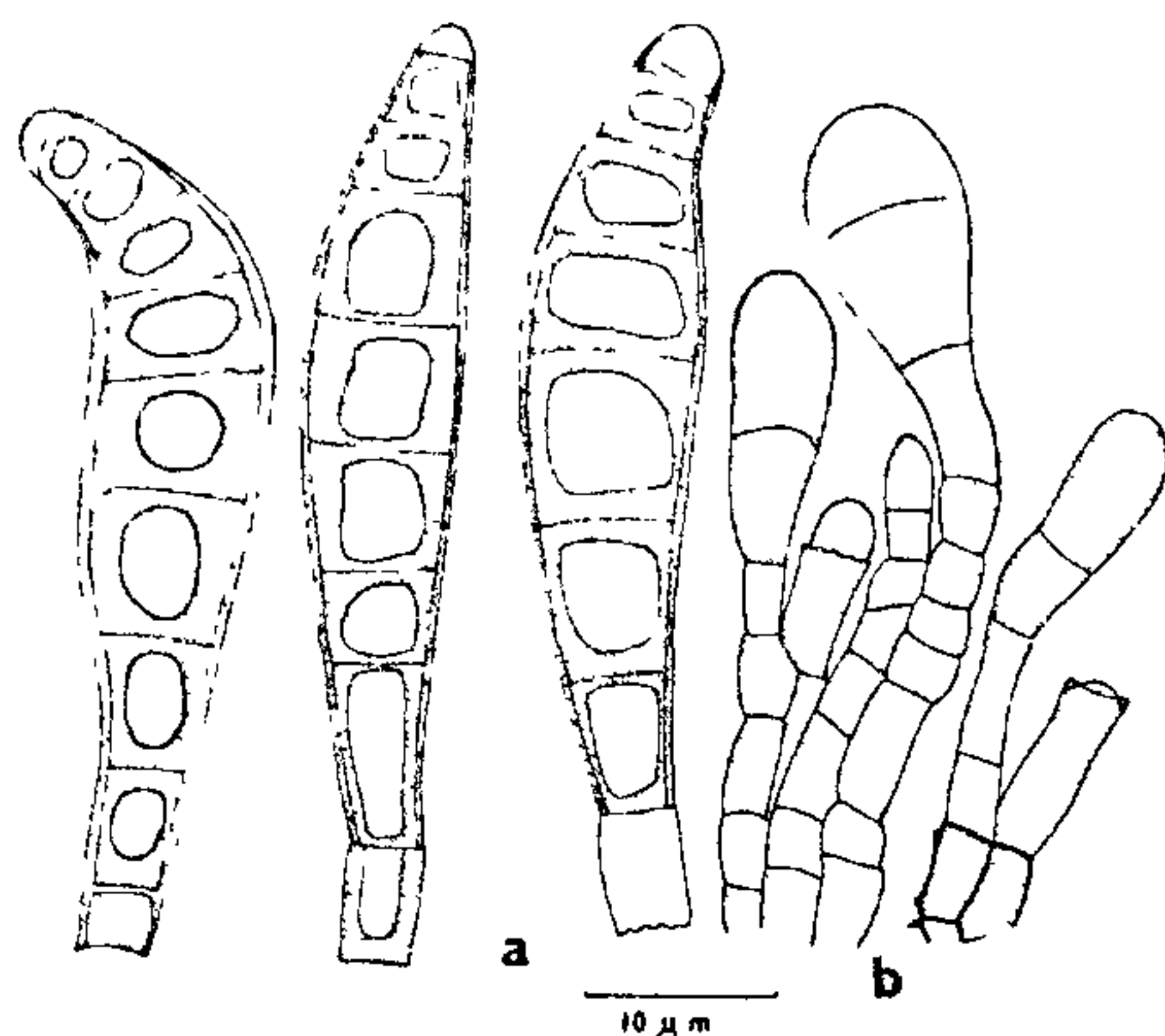


Figure 3a, b. *Coryneum modonium*. a. Conidia; b. Conidiogenous cells with young, developing conidia.

at the base and light brown, comparatively thin-walled, vertically arranged, elongated cells towards the conidiogenous region. Conidiophores formed from the upper cells of the acervuli, cylindrical, erect, branched at the base, septate, pale brown, becoming hyaline towards the apices,  $50-60 \times 3-6 \mu\text{m}$ , often merging imperceptibly into the pseudo-parenchyma. Conidiogenous cells holoblastic, annellidic, hyaline to pale brown, cylindrical, smooth, with usually a single annellation. Conidia

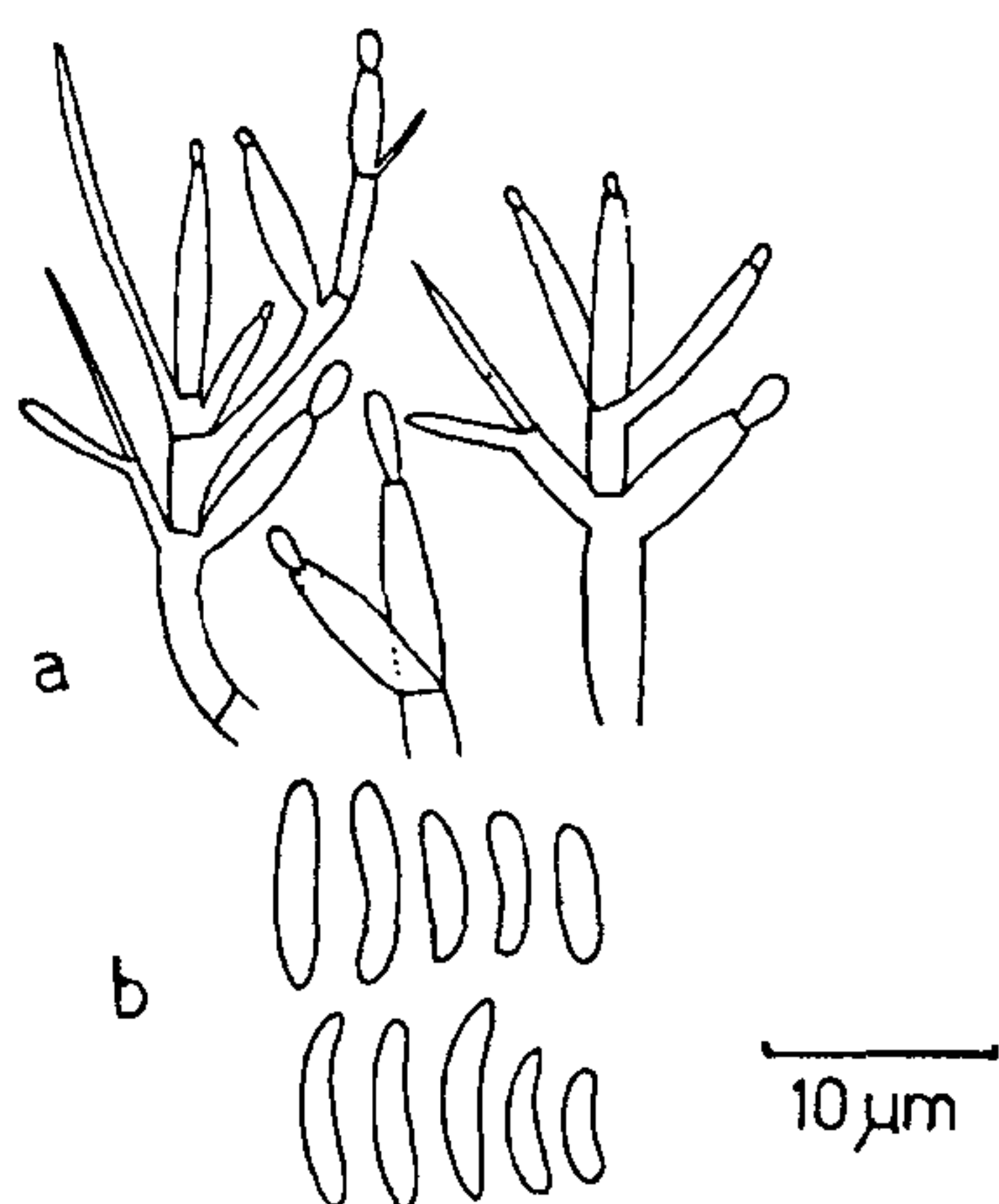


Figure 4a, b. *Waydora typica*. a. Phialides with young conidia; b. Conidia.

formed singly from the apices of the conidiogenous cells, variable in shape, clavate, narrowly fusiform, very rarely more broadly fusiform, tapered gradually towards the obtuse apex, straight, slightly curved or with a tendency to be sigmoid, also tapered gradually towards the truncate base which often carries away part of the conidiogenous cell at secession, brown, smooth, 5-8-distoseptate, apical cell sometimes darker than the rest and invariably with a hyaline tip,  $45-67 (65) \times 14-20 (19) \mu\text{m}$ .

**Collections examined:** On dead twigs of *Ficus bengalensis*, Theosophical Society, Adyar, Tamil Nadu, 2-4-1980. Herb. MUBL NO. 2916; Sri-vaikuntam, Tirunelveli District, Tamil Nadu, 3-10-1980, Herb. MUBL NO. 2917.

*C. modonium* has been reported from France, Belgium and Romania on *Castanea vesca* and *Castanea* sp. Sutton (1975) wrote that it is not a species frequently encountered in herbaria despite the fact that it has often been described in literature. *Ficus bengalensis* is a new host record for the species and in the present study it is reported for the first time from a tropical environment.

2. *Waydora typica* (Rodway) Sutton, in Sutton, V. G. Rao & Mhaskar, *Trans. Br. Mycol. Soc.* 67: 248 (1976), (figures 2 and 4a, b).

Conidiomata eustromatic, up to 1 mm in diameter, superficial, separate, pulvinate, carbonous, black, consisting of 7-10 vertically divided segments, each  $300-600 \times 200-250 \mu\text{m}$ , surrounding a central column, base immersed, composed of dark brown thick-walled, *textura angularis*; each locule with a distinct wall consisting of 4-5 outer layers and 3-4 inner layers; outer layer of dark brown, thick-walled *textura angularis*, inner layer of pale brown *textura angularis* becoming hyaline towards the inner conidiogenous region. Ostiole single to each locule. Conidiophores lining the entire locular cavity, septate, branched, up to  $35 \mu\text{m}$  long, hyaline, smooth. Conidiogenous cells phialidic, cylindrical, or tapered to the apices, hyaline, smooth,  $10-20 \times 5-8 \mu\text{m}$ . Conidia fusiform, aseptate, hyaline, smooth, allantoid or straight,  $5-8 \times 1.5-2.0 \mu\text{m}$ .

**Collections examined:** On capsules of *Eucalyptus globulus*, on the way to Berijam, Kodaikanal, Tamil Nadu, 5-8-1980, Herb. MUBL No. 2918; on dead twigs of *Rosa* sp. collected from Lalbagh Gardens, Bangalore, Karnataka, 10-2-1980, Herb. MUBL No. 2919.

The type of *W. typica* was examined for comparison (IMI 188270). The conidiomata are much larger in the Indian collection measuring up to 1 mm in



diameter with vertically elongated locules whereas in the type they are 500–800  $\mu\text{m}$  in diameter with spherical locules. *Rosa* sp. is a new host record for the fungus and is being reported for the first time from India.

The author thanks Prof. C. V. Subramanian, former Director, CAS in Botany, University of Madras for encouragement.

11 September 1986

# **FIRST RECORD OF THE WHITEFLY SUBFAMILY ALEURODICINAE (ALEYRODIDAE: HOMOPTERA) FROM INDIA**

**B. V. DAVID**

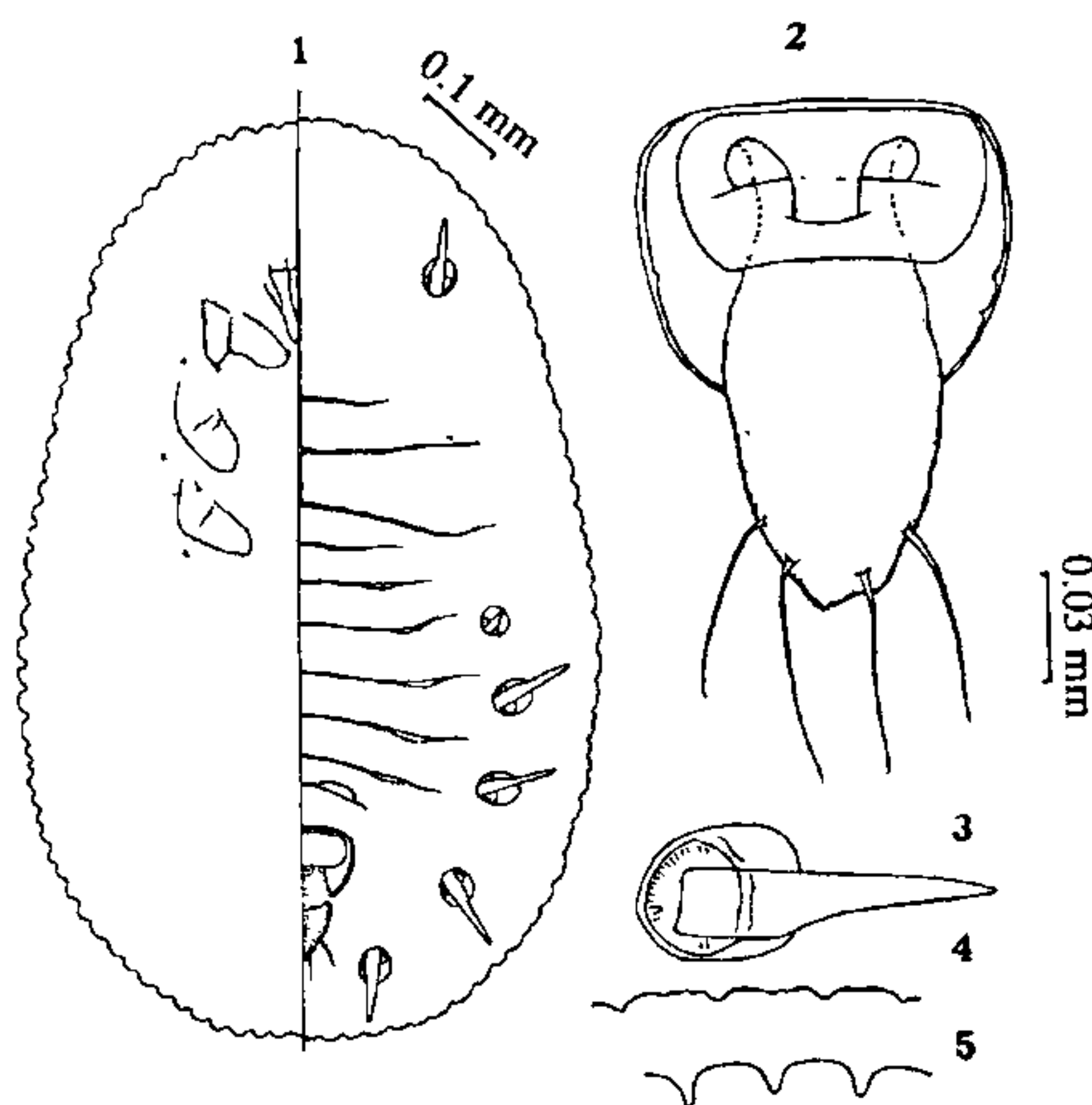
*Fredrick Institute of Plant Protection and Toxicology,  
Padappai 601 301, India.*

THE family Aleyrodidae is classified into three subfamilies viz Aleyrodinae, Aleurodicinae and Udamoselinae, the last one being based on a single specimen. In India the whiteflies known so far are assignable to the subfamily Aleyrodinae. On 28 March 1987 the author collected an interesting species of whitefly from a shrub *Persea macrantha* (Nees) Kosterm (Lauraceae) at Mahabaleshwar, a hill resort near Pune. This was found to be a new species of *Aleurodicus* Douglas<sup>1</sup> of the subfamily Aleurodicinae recorded for the first time in India and the same is described here.

*Aleurodicus philomenae* sp. nov. (figures 1–5). *Pupal case*: Colourless, oval, with a copious amount of white cottony secretion-fluffy, waxy and ribbon-like extending upward and outward from the dorsum, white glass-like waxy rod arising from each compound pore and whitish translucent striated wax extending from ventral submargin to leaf. Measures 1.040–1.148 mm long and 0.673–0.704 mm wide. Found infesting the undersurface of leaves.

*Margin*: Irregularly crenate, 3–4 crenations in 0.1 mm; thoracic and caudal tracheal folds, combs and pores absent; anterior and posterior marginal setae not discernible.

*Dorsal surface*: Six pairs of subdorsal compound pores: one pair each on cephalothorax, abdominal segments 4–6, laterad of vasiform orifice and postero-laterad of vasiform orifice; each pore with a short pointed stout spine slightly swollen at basal part. The diameter of the pore on the cephalothorax 40–45  $\mu$ , on the fourth abdominal segment 27.5–35.0  $\mu$  and the rest being almost same, 31.25–



**Figures 1–5.** *Aleurodicus philomenae* sp. nov. 1. pupal case; 2. vasiform orifice; 3. compound pore with spine; 4. dorsal margin, and 5. ventral margin.

40.00  $\mu$ . The spine in the fourth pore is smaller (17.5–32.5  $\mu$ ) than the other spines (50.0–82.5  $\mu$  in the pore on cephalic region, 52.5–77.5  $\mu$  in the pore on fifth abdominal segment, 58.75–80.0  $\mu$  in the pore on sixth abdominal segment, 57.5–87.5  $\mu$  in the pore on laterad of vasiform orifice, 56.25–77.5  $\mu$  in the pore on the postero-laterad of vasiform orifice). Dorsum devoid of setae. Longitudinal moulting suture reaching subdorsum. Abdominal segments six, seven and eight measuring 45–50  $\mu$ , 31.25–32.50  $\mu$  and 52.5  $\mu$  respectively. Pockets evident on the seventh abdominal segment. Abdominal segments 3–7 with depressions. Vasiform orifice subcordate, wider than long, 0.090–0.098 mm long and 0.110–0.113 mm wide; operculum rectangular-shaped, 0.040–0.045 mm long and 0.088–0.090 mm wide; lingula large and extruded from vasiform orifice, 0.100 mm long bearing 4 hairs at its tip.

*Ventral surface*: Antennae and legs very short, pro- and meso-thoracic spiracles evident, anterior and posterior spiracles present. Mouth parts discernible.

*Holotype*: One pupal case on slide, on *Persea macrantha*, Mahabaleshwar (Pune, Maharashtra), 28.3.1987, B. V. David.

*Paratype*: 7 pupal cases, same data as holotype. Of the 7 paratypes, 4 are being deposited in the collections of the Zoological Survey of India,