MORPHOLOGY OF *STIGMINA FICUS-MYSORENSIS* SP.NOV.

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A fungal infection resulting in severe defoliation of *Ficus-mysorensis* Heyne was observed from August to December in 1970 and 1971. The diseased leaves were infected by a species of *Stigmina* Sacc. A literature review showed that five *Stigmina* species have been reported as occurring on *Ficus* spp., and of these, four are from India. They include *S. maculata* (Cke) Hughes on *F. cardifolia* by Hughes (1952) and Subramanian (1956) on *Ficus* sp., *S. sudanensis* on *Ficus* sp. by Ellis (1959), *S. fici* on *F. infectoria* by Pavgi & Singh (1966), *S. obtecta* (Petrak & Esf.) M. B. Ellis on *Ficus* sp. by Ellis (1967), and *S. fici-elasticae* on *F. elastica* by Kapoor (1968). A comparison between the *Stigmina* on *F. mysorensis* and the species reported earlier (Table 1), showed it to have larger conidiophores and conidia, and to show other qualitative differences.

Table 1. *Comparison of* Stigmina spp. *occurring on* Ficus

		Conidiophores	Conidia
Stigmina maculata	*Ficus cardifolia*	Cylindric, 3-septate, 28–55 × 5–6 μm	Obclavate, rostrate, 7-septate, 30–75 × 5·0–8·5 μm
S. sudanensis	*F.* sp.	Cylindric, 20–30 × 4–7 μm, 3 annellations	Cylindric to obclavate, smooth-walled, 3–9 septate, 23–50 × 4·5–7·0 μm
S. fici	*F. infectoria*	—	Ovate to ellipsoid, smooth-walled, 1–3 septate, 10–14·5 × 4·5–9·0 μm
S. obtecta	*F.* sp.	Cylindric, 0–3 septate, 40 × 3–8 μm, 1–2 annellations	Elliptic or cylindric, smooth-walled, 3–7 septate, 23–59 × 10–24 μm
S. fici-elasticae	*F. elastica*	Cylindric to obclavate, 8–16 × 6–8 μm, 8 annellations	Obclavate, rostrate, verruculose, 3–7 septate, 22–60 × 8–10 μm
S. ficus-mysorensis	*F. mysorensis*	Cylindric, 1-septate, 36–65 × 9–10 μm, 9–10 annellations	Obclavate, rostrate, smooth, guttulate, 9-septate, 60–98 × 6–12 μm

Stigmina ficus-mysorensis sp.nov. (Figs. 1, 2)

Infectionis maculae hypophyllae, punctiformes orbiculares, initialiter separatae, demum per coalescentiam gregarias evadentes, superficiem subtus totaliter obtegentes. *Stromata* subcuticularia, brunnea, 55–70 μm lata. *Conidiophora* sporodochium efformantia, longa, cylindrica, 1–2 septate, brunnea, 36–65 × 9–10 μm; *cellulae conidiogenae* cum annellationibus 9–12. *Conidia* holoblastica, recta vel paullo versus apicem curvata,

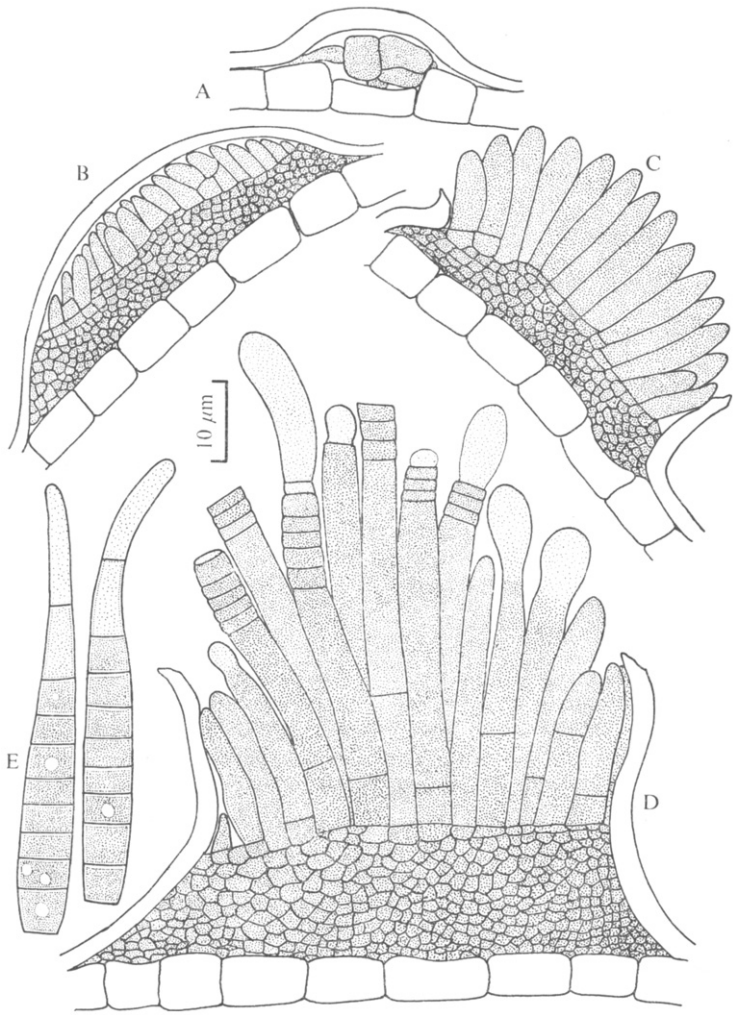

Fig. 1. *Stigmina ficus-mysorensis*. A–D, different stages of sporodochial development; E, mature conidia.

obclavata, rostrata, brunnea, guttulata, generatim 9-septata, raro 8–10 septata, ad basim truncata, 60–98 × 9–12 μm.

Holotypus in foliis vivis *Ficus mysorensis* a B. N. Muthappa, Balehonnur, in Statu Mysoorense die 12 Oct. 1971, lectus sub IMI 160986 positus est.

Lesions hypophyllous, punctiform, circular, separate initially, becoming gregarious due to coalescing, covering the entire lower surface. *Stromata* subcuticular, brown, 55–70 μm broad. *Conidiophores* forming a sporodochium, long, cylindrical, 1–2 septate, brown, 36–65 × 9–10 μm. *Conidio-*

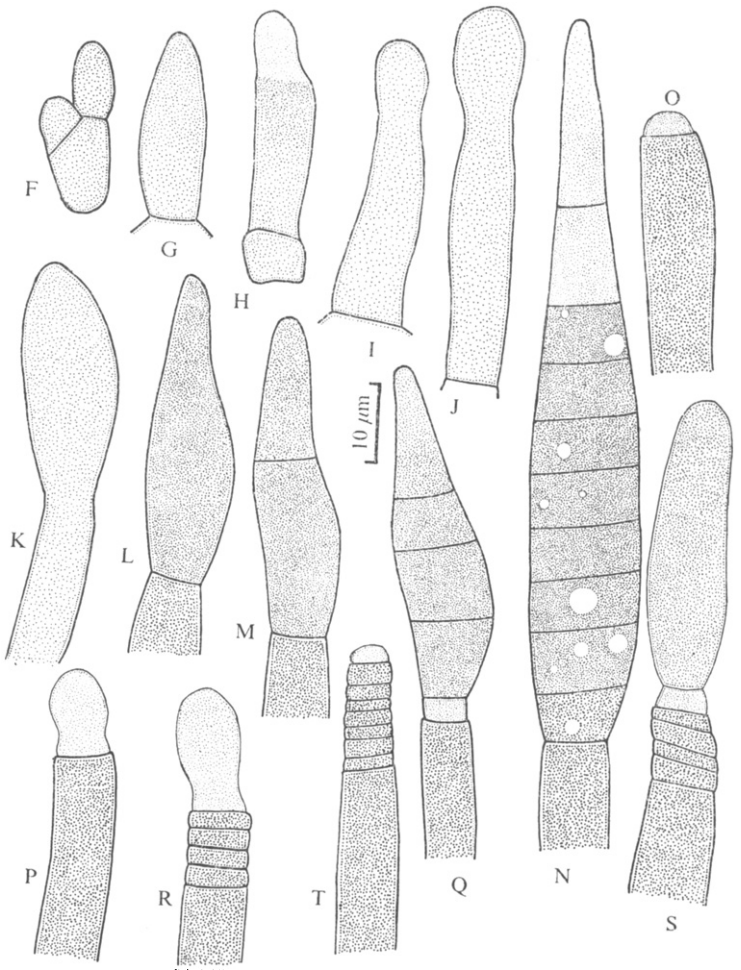

Fig. 2. *Stigmina ficus-mysorensis*. F–T, development of conidiophores, conidiogenous cells and conidia.

genous cells with 9–12 annellations. *Conidia* holoblastic, formed singly at the apex, obclavate, rostrate, brown, guttulate, generally 9-septate, rarely 8–10 septate, truncate at the base, 60–98 × 9–12 μm.

The earliest sign of this fungus on the leaf is the appearance of a yellow oily hypophyllous lesion which soon enlarges in size. Sections through such lesions reveal dark subcuticular mycelia (Fig. 1 A). The subcuticular mycelium gives rise to a stroma by cell division and a palisade layer of small conidiophores is formed (Fig. 1 B). Developing conidiophores rupture the cuticle and become exposed (Fig. 1 C). Young conidiophores are initially unicellular and obclavate but later become septate at the base so

differentiating terminal conidiogenous cells (Fig. 2 F, G). When the conidiogenous cells reach a length of 15–20 μm differentiation of the apex into a conidial initial occurs (Fig. 2, H–K). As this increases in length and breadth a septum is formed to delimit the young conidium (Fig. 2 L). Another septum is formed about three-quarters along the initial (Fig. 2 M). As the conidium continues to grow, 7–8 septa are formed below the first one (Fig. 2 M, N), while only a single additional one is formed above the first septum.

After secession of the first conidium the conidiogenous cell proliferates percurrently through the truncate apex and distends into another apical conidial initial which subsequently develops into another conidium (Fig. 2 O–Q). After secession of the second conidium, again percurrent growth occurs and a third conidium is formed in the same manner as earlier conidia. This process continues till the conidiogenous cell has borne 9–12 conidia in a basipetal manner. New conidia always leave an annular scar on the conidiogenous cell after secession and more than 8 annellations could be clearly counted on conidiogenous cells (Fig. 2 R–T). Conidia are holoblastic where the entire wall of the proliferating conidiogenous cell wall distends to form the conidium. The longest conidiophore observed in the present study was 65 × 10 μm, dark brown, 1-septate and with the conidiogenous cell bearing 9, 10, 11 or 12 annellations. The annellations are parallel, almost equidistant and concolorous with the rest of the conidiophore.

I wish to thank Dr M. B. Ellis for advice on nomenclature and for reading and commenting upon this paper. I appreciate the kind assistance of Mr C. Rajendran, University Botany Laboratory, Madras, during the period of this study. Latin translation by Dr C. J. Saldanha of St Joseph's College, Bangalore, is greatly appreciated.

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