

STUDIES ON THE GENUS *STENELLA* SYDOW FROM WEST BENGAL

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Four species of the genus *Stenella* Sydow have been collected, figured and described from West Bengal during 1977-1982: *Stenella aegles*, *S. cassiae*, *S. vangeriae* and *S. smilacis*. It is the first time the genus *Stenella* Sydow is figured and described from West Bengal.

INTRODUCTION

The genus *Stenella* was erected by Sydow in 1930. It was further redescribed and figured by Ellis in 1971. Ellis (1971) cited *Biharia* Thirum. & Mishra as a synonym of *Stenella* but did not transfer the type species (*Biharia vangeriae*). The necessary new combination: *Stenella vangeriae* was recognized and published by Deighton in 1979.

KEY TO THE SPECIES

A. Mycelium external

Conidiophores arising from external mycelial hyphae

On *Aegle marmelos*; conidia 12.00-105.5 x 2.5-3.6 μm*Stenella aegles*

On *Cassia fistula*; conidia 6.00-82.00 x 2.00-3.00 μm*Stenella cassiae*

AA. Mycelium both external and internal

Conidiophores arising both from stroma and external mycelial hyphae.

On *Meyna laxiflora*; conidia 21.5-127 x 1.5-2.5 μm*Stenella vangeriae*

On *Smila macrophylla*; conidia 18.00-126.5 x 3.00-6.00 μm*Stenella*
smilacis

1. *Stenella aegles* Prasad. (Fig. 1)

Olive brown lesions formed on both the surface of the leaf, scattered, virulent, roundish to irregular, 1-5 mm in diam; caespituli amphigenous, mainly eiphyllous, effuse; mycelium external; hyphae superficial, emerging through stomata, very light olivaceous, thin-walled, branched, septate, minutely verruculose, 1.5-2.00 μm

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wide; conidiophores arising from external mycelial hyphae, olivaceous brown to dark brown smooth, simple or branched, prominently thick-walled, cylindrical, straight to flexuous, highly sinuous (showing growing tips), 27.00-105.00 x 3.00-4.5 μ m; conidia obclavate - cylindric to filiform, olivaceous to olive brown, solitary or in short chain, distinctly pluriseptate (0-9), smooth or very minutely verruculose, thin to thick-walled (thinner towards the apex), base tapering to distinct hilum, sub-acute at the tip, 12.00-106.5 x 2.5-3.5 μ m.

Specimen studied: On *Aegle marmelos* Corr., Kalyani, Nadia, West Bengal, PCC-2503 (=IMI 231243), leg. J. B. Ray, March 23, 1978.

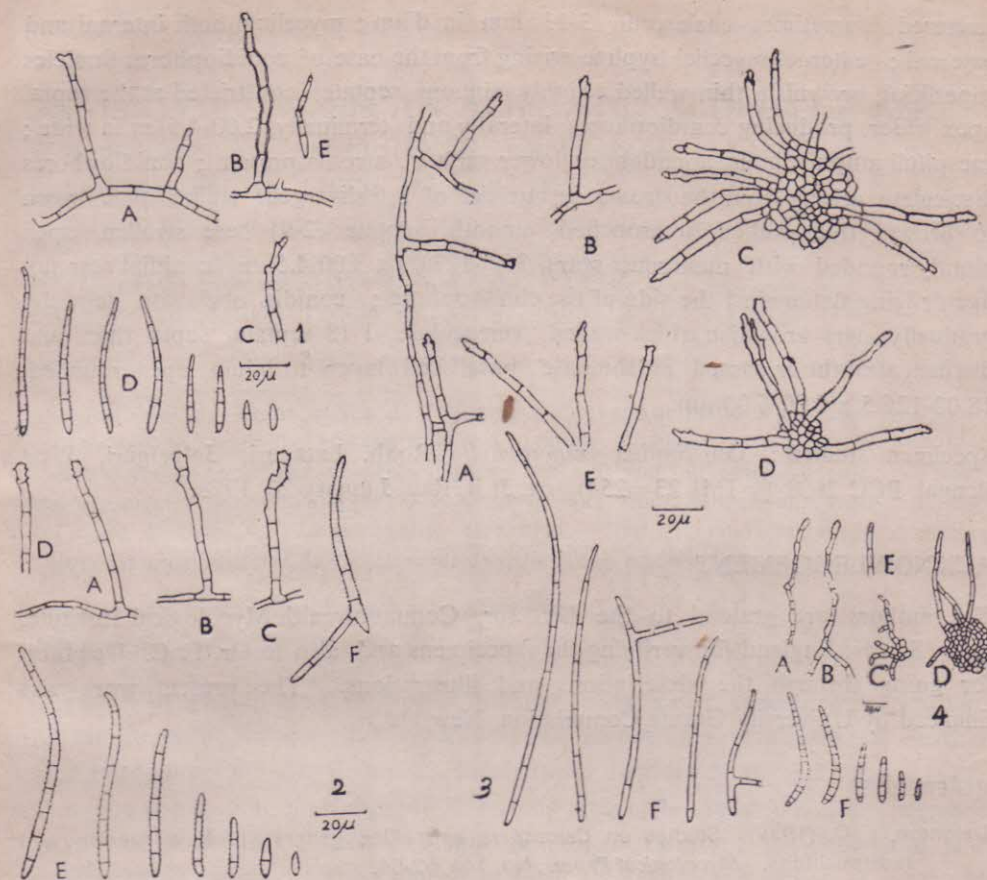
2. *Stenella cassiae* Kamal, Singh & Kumar (Fig. 2)

Spots primarily develop as 'dotlike' later becoming irregular in outline, vein-limited virulent, scattered on both the corresponding surfaces but well developed on lower surface; dark brown to almost black in colour, 0.5-2.5 cm extn; caespituli amphigenous, well-developed on lower surface, effuse, velutinous; hyphae superficial, pale olivaceous brown, septate, thick-walled, 1.5-2.5 μ m wide; conidiophores develop from external mycelial hyphae, pale brown to dark brown, paler towards the tip, straight to flexuous, unbranched 2-6 septate, highly sinuous towards the apex, presence of thickened lateral and apical scars, 33.5-65.5 x 2.00-4.00 μ m; conidia obclavate-cylindric, brownish, thin-walled minutely verruculose, straight to curved, 0-9 septate, base tapers to hilum (thickened), tip rounded, 6.00-82.00 x 2.00-3.00 μ m.

Specimen studied: On *Cassia fistula* L., Diamondharbour, 24-Parganas, West Bengal PCC 2768 (=IMI 234130), leg. J. B. Ray, January 1, 1978.

3. *Stenella vangeriae* (Thurum. & Mishra) Deighton (Fig. 3)

Spots amphigenous, scattered a few to numerous, circular, dark red with slightly raised margin, surrounded by yellow halo, zonate, usually necrotic leaving shot-hole, older leaf more affected, 1-6 mm in diam; caespituli amphigenous, more abundant on lower surface; mycelium both internal and external; external mycelial hyphae superficial, arising from the stoma, colourless to very pale olivaceous, septate, thin-walled, much branched, producing conidiophores laterally; stroma present; conidiophores arising from the stroma, fasciculate, in fascicles of 2-32, dense, divergent, pale-yellowish, smooth, simple cylindrical, 0-6 septate, sinuous, straight to flexuous, numerous scars towards the apex, base slightly swollen, obtuse or slightly wider at the apex, 42.5-100.00 x 2.00-4.5 μ m; conidia linear, olivaceous to yellowish brown, simple or with lateral branches, branches developing near the septa, 1-9 septate, basal cell slightly tapers to hilum, obtuse at the apex, 21.00-127.00 x 1.5-2.5 μ m.



- Fig. 1. *Stenella aegles*. A-B, external mycelial hyphae bearing conidiophores, C. Conidiophore; D. Conidia; E. Conidia in chain.
- Fig. 2. *Stenella cassiae*. A-C, external mycelial hyphae bearing conidiophores; D, Conidiophore, E, Conidia, F Conidia showing germ tube.
- Fig. 3. *Stenella vangueriae*. A-B, external mycelial hyphae bearing conidiophores, C-D, Conidiophore fascicles, E, Conidiophores, F, Conidia.
- Fig. 4. *Stenella smilacis*. A, an external mycelial hypha; B, an external mycelial hypha bearing conidiophore; C, Conidiophore fascicle bearing external mycelial hyphae, D, a Conidiophore fascicle; E, Conidiophore, F, Conidia.

Specimen studied: On *Meyna laxiflora* Robins. (Syn. *Vangueria spinosa* Roxb.) Gopal Nagar, Nadia, West Bengal. PCC 2750 (=IMI 234188), leg. J. B. Ray, November 17, 1978.

4. *Stenella smilacis* (Agarwal) Kar & Ray. (Fig. 4)

Spots formed on both the corresponding surfaces of lamina, olive brown, circular,

scattered, sometimes coalescent, 3-13 mm in diam; mycelium both internal and external; external mycelial hyphae arising from the base of conidiophores fascicles superficial, brownish, thin-walled, highly sinuous, septate, constricted at the septa, apex wider, producing conidiophores laterally and terminally, 2.00-4.5 μ m in wide; caespituli amphigenous, abundant on lower surface, stroma present; conidiophores fasciculate, arising from the stroma, in fascicles of 3-6 divergent stalks, pale-brown to brown, thick-walled, unbranched, smooth, septate (2-9) base swollen, apex bluntly rounded with numerous scars 36.5-127.00 x 3.00-4.5 μ m, conidial scar not like or lying flat against the side of the conidiophore; conidia obclavate, tapering gradually, dark brownish, thick-walled, verruculose, 18 septate, septa thick and distinct, straight or curved at the base, basal cell tapers to hilum, apex rounded, 18.00-126.5 x 3.00-6.00 μ m.

Specimen studied: On *Smilax macrophylla* Roxb. Lataguri, Jalpaiguri, West Bengal, PCC 2608 (=IMI 23-254), leg. J. B. Ray, January 20, 1978.

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REFERENCES

- Deighton, F. C. (1979). Studies on *Cercospora* and allied genera VII. New species and redispersions. *Mycological Papers*, No. 144, 52-54.
- Ellis, M. B. (1976). More Dematiaceous Hyphomycetes, CMI Publication, P. 507.

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