

STUDIES ON THE GENUS MYCOVELLOSIELLA FROM WEST BENGAL

BY

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Four species of the genus *Mycovellosiella* Rangel, viz. *Mycovellosiella concors* (Caps.) Deighton, *Mycovellosiella solanitorvi* (Frag. & Cif.) Deighton, *Mycovellosiella lantanae* (Chupp) Deighton, var. *lantanae* Deighton and *Mycovellosiella tarrii* Deighton have been collected, figured and described from West Bengal during 1983-1987.

INTRODUCTION

Muntanola (1960) was the first author to take the genus *Mycovellosiella* since it was first described by Rangel. She (1960) transferred 3 species from *Cercospora* to *Mycovellosiella*: *M. cayaponiae* (Stev.) Muntanola, *M. gonatoclada* (Syd.) Muntanola and *M. perfoliati* (Ell. & Ev.) Muntanola. Deighton (1974, 1979) transferred several species originally described in *Cercospora*, *Cladosporium*, *Ramularia* and a few other genera to *Mycovellosiella*.

KEY TO THE SPECIES :

- A. Stroma present and well developed, conidia solitary, pluriseptate (1-8 septa), measuring with $3.5-6.5 \times 26.4-125.5 \mu\text{m}$...*concors*
- AA. Stroma none, conidia regularly catenate, 2 or 3 septate, measuring with $6.5-8 \times 27.5-128.5 \mu\text{m}$...*lantanae* var. *lantanae*
 - conidia solitary or catenate, pluriseptate (1-9 septa), measuring with $3.50-6 \times 23-115 \mu\text{m}$...*solani-torvi*
 - conidia sometimes catenate, pluriseptate (1-6 septa), measuring with $3.5-6.5 \times 40-125.5 \mu\text{m}$...*tarrii*

1. *Mycovellosiella concors* (Casp.) Deighton, Mycological Paper Nos. 137: 21-24 (1974)

Spots formed on lamina, amphigenous angular to irregular, primary spots yellowish areas becoming brown at later stage, distinct; sometimes necrotic, vein limited, 2-7 mm in extent; caespituli amphigenous, chiefly hypophyllous,

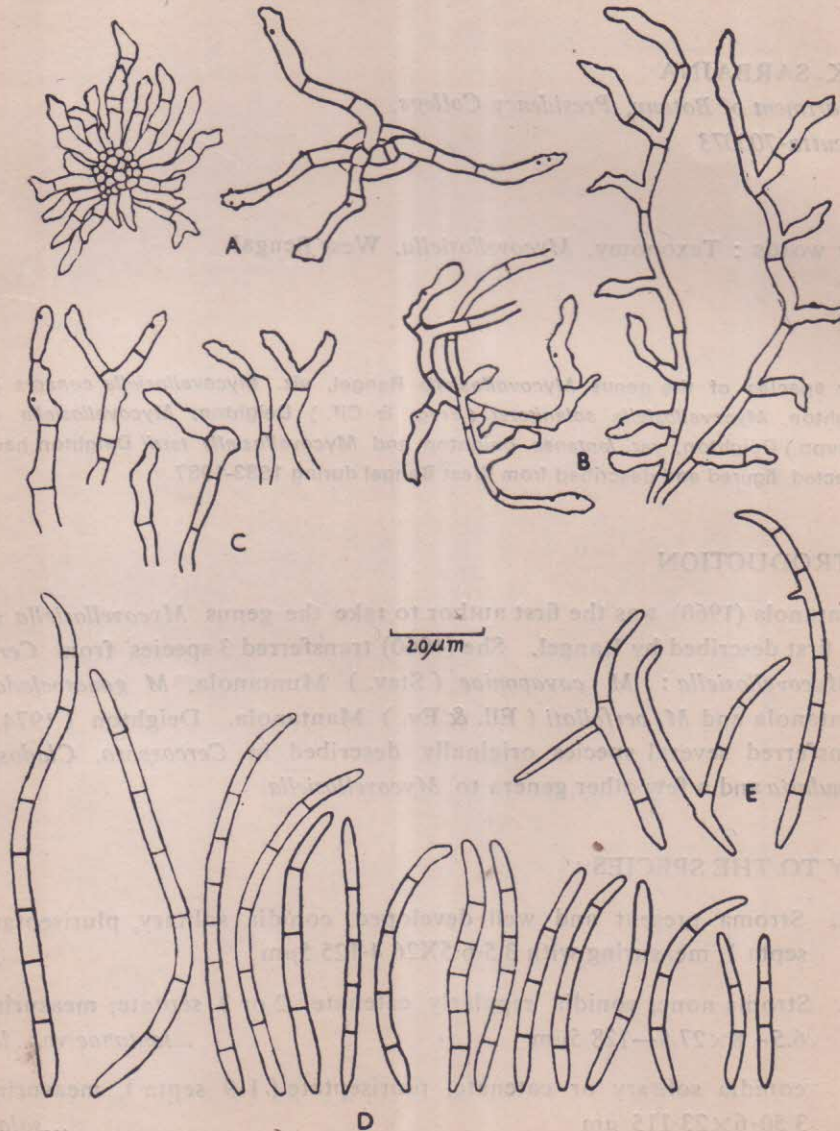


Fig. 1, *Mycovellosiella concors*

A, Conidiophore fascicles; B, Secondary mycelial hyphae bearing conidiophores; C, Conidiophores; D, Conidia; E, Conidia showing germ tubes.

floccose on ventral surface, evenly distributed over the spots, deep olivaceous; primary mycelium internal; stroma well developed, substomatal, hypophyllous globose to subglobose, dark brown, composed of swollen, densely packed, brownish hyphal cells and conidiophore bases; conidiophores chiefly hypophyllous arising in dense fascicles, in fascicle of 2-20 divergent stalks emerging through stomata and from external mycelial hyphae, pale olivaceous, straight to bent, slightly sinuous, smooth, thick-walled, simple or branched, dilated at the apex, septate (1-3 septa), conidial scar prominent, situated on the tip or lying flat against the side wall of the conidiophores or on the shoulder of the short denticles, $3.50-6.50 \times 16.50-50.00 \mu\text{m}$; secondary mycelium superficial, mostly hypophyllous, external mycelial hyphae ($2.50-3.50 \mu\text{m}$ wide), pale olivaceous, smooth, sparingly branched, laxly floccose and climbing the leaf hairs, septate, originating from the base of the conidiophore fascicles or directly coming out through stomata, traversed for some distance and producing both lateral and terminal secondary conidiophores, more or less similar with primary ones; conidia solitary, obclavate-cylindric to sub-cylindric or sometimes cylindric, pale olivaceous, smooth, straight to curved, thin-walled, distinctly pluriseptate (1-6 septa), occasionally 8 septate, most commonly 3-4 septate; tip obtuse, base shortly tapered to the thickened hilum, $3.50-6.50 \times 26.40-125.50 \mu\text{m}$ (Fig. 1).

Specimen studied: On *Solanum melongena* Linn. (fam. Solanaceae), Tarakeswar, Hooghly, West Bengal, India, PCC 3274 (=IMI 09981), leg. K. K. Sarbajna, 20 August, 1986.

First time reported from the State of West Bengal. Bilgrami *et al.*, 1979, 1981; Sarbhoy *et al.*, 1977-81; Ellis 1976.

2. *Mycovellosiella lantanae* (Chupp) Deighton, var. *lantanae* Deighton, Mycological Paper, Nos. 137: 33-36 (1974).

Leaf spot indefinite, amphigenous, a yellowish-green or yellowish-brown discoloration on the upper surface, sometimes with a minute brown centre surrounded by a yellow zone; caespituli hypophyllous, olivaceous, unevenly distributed over the spots; primary mycelium internal; stroma none; conidiophores chiefly hypophyllous, arising both laterally and terminally from the secondary mycelial hyphae, cylindrical, pale to moderate olivaceous, simple, smooth, thick-walled, upto 4 septate, $3.00-6.50 \times 15.00-100.00 \mu\text{m}$; secondary mycelium external, arising from a few hyphae which penetrate a stomata, hyphae smooth, sparsely branched, intertwining to form ropes and laxly ascending the leaf hairs, $1.50-2.50 \mu\text{m}$ wide, (occasionally $3.50 \mu\text{m}$ wide); conidia solitary or in chains of 4, concolorous with the conidiophores, subcylindric to cylindric, straight, smooth, mostly 1 septate but often continuous, less frequently 2 or 3 septate, indistinct to distinct, broadly rounded at the apex, slightly tapered to the hilum, $6.50-8.00 \times 29.50-128.50 \mu\text{m}$ (Fig 2).

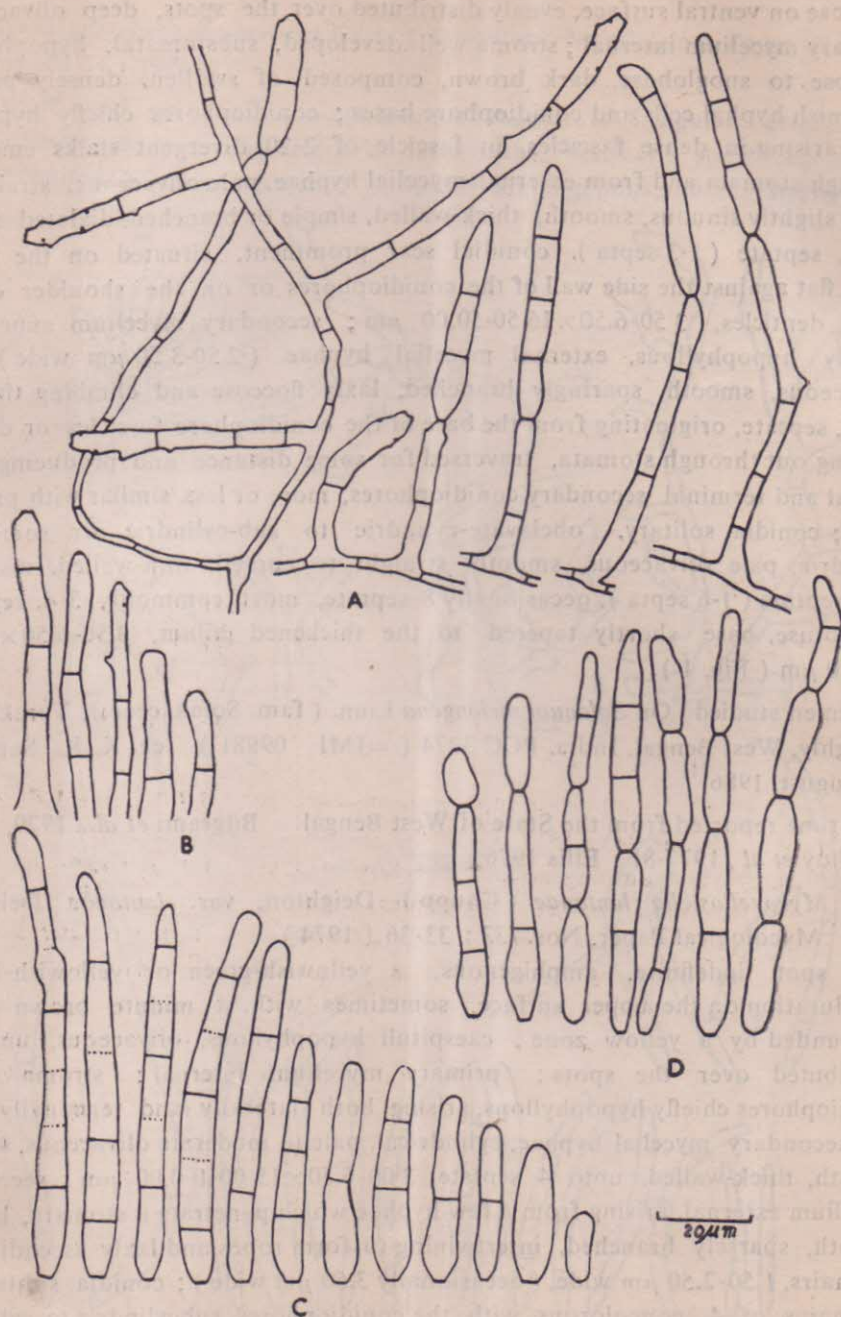


Fig. 2, *Mycovellosiella lantanae* var. *lantanae*

A, Secondary mycelial hyphae bearing conidiophores ; B, Conidiophores ;
 C, Conidia ; D, Conidia in chains.

Specimen studied : On *Lantana camara* Linn. (fam. Verbenaceae), Salt Lake City, Calcutta, West Bengal, India, PCC 4 65 (=IMI 311129) leg. K. K. Sarbajna, 17 September, 1986.

First time reported from India (Bilgrami *et al.*, 1979, 1981 ; Sarbhoy *et al.*, 1977-81 ; Ellis 1976).

3. *Mycovellosiella solani-torvi* (Frag. & Cif.) Deighton, Mycological paper, Nos. 137 : 14-17 (1974).

Spots formed on lamina, on both the corresponding surfaces, circular to irregular, sometimes coalescent, initially small yellowish discoloration on the

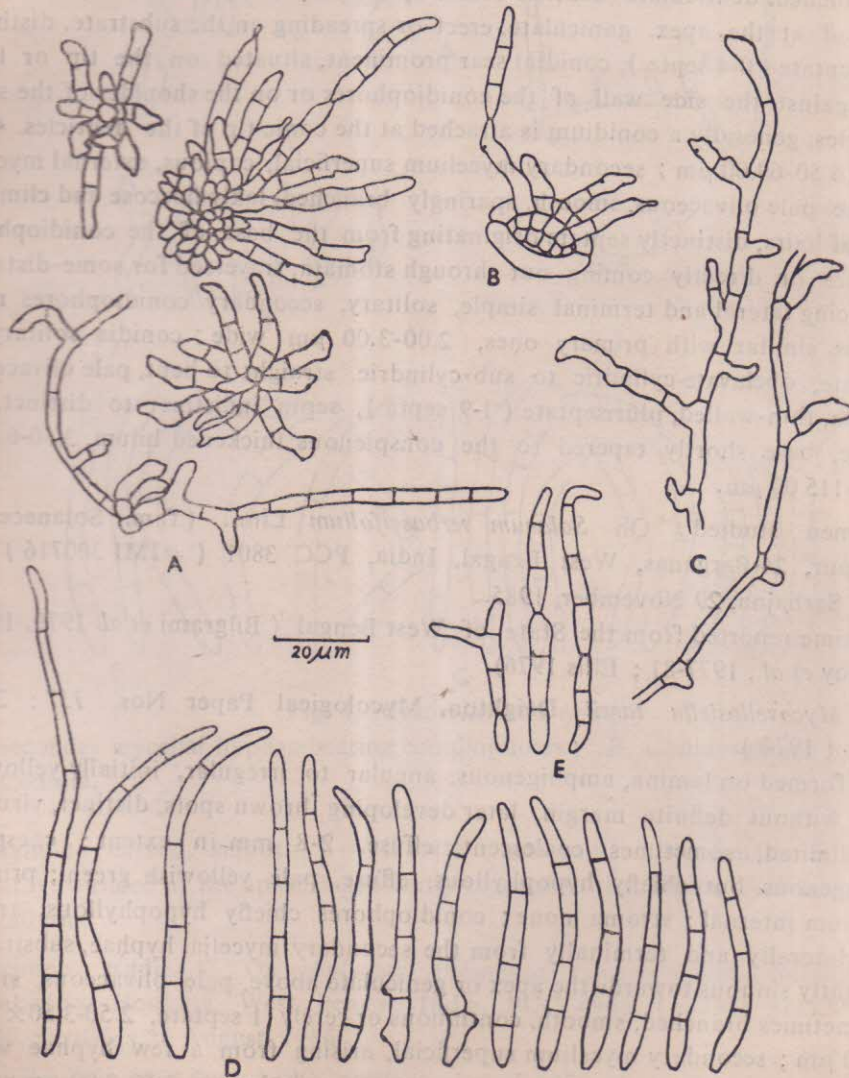


Fig. 3, *Mycovellosiella solani-torvi*

A&B, Conidiophore fascicles ; C, Secondary mycelial hyphae bearing conidiophores ; D, Conidia ; E, Conidia in chains.

upper surface, becomes pale brown to brown with an indefinite margin at maturity, distinct, scattered, 2-10 mm in extent; caespituli amphigenous, chiefly hypophyllous, evenly distributed over the spots, effuse, pale olivaceous to deep olivaceous; primary mycelium internal, hyphae almost colourless, 2.00-3.00 μm wide; stroma not developed; conidiophores amphigenous, chiefly hypophyllous, arising in small fascicles, consisting of 3-16 divergent stalks emerging through stomata and from external mycelial hyphae, more or less straight, sometimes curved, slightly olive brownish, smooth thick-walled, simple or branched, denticulate (denticle conic, upto 3.50 μm wide and 4.00 μm length), dilated at the apex, geniculate, erect or spreading on the substrate, distinctly pluriseptate (0-4 septa), conidial scar prominent, situated on the tip or lying flat against the side wall of the conidiophores or on the shoulder of the short denticles, generally a conidium is attached at the conic tip of the denticles, 4.00-6.50 \times 6.50-69.00 μm ; secondary mycelium superficial, copious, external mycelial hyphae pale olivaceous, smooth, sparingly branched, laxly floccose and climbing the leaf hairs, distinctly septate originating from the base of the conidiophores fascicles or directly coming out through stomata, traversed for some distance, producing lateral and terminal simple, solitary, secondary conidiophores more or less similar with primary ones, 2.00-3.00 μm wide; conidia solitary or catenate, obclavate-cylindric to sub-cylindric, straight to bent, pale olivaceous, smooth, thin-walled, pluriseptate (1-9 septa), septa indistinct to distinct, tip obtuse, base shortly tapered to the conspicuous thickened hilum, 3.50-6.00 \times 23.00-115.00 μm .

Specimen studied: On *Solanum verbascifolium* Linn. (fam. Solanaceae), Baruipur, 24-Parganas, West Bengal, India, PCC 3801 (=IMI 300716) leg. K. K. Sarbajna, 29 November, 1985.

First time reported from the State of West Bengal (Bilgrami *et al.* 1979, 1981; Sarbhoy *et al.*, 1977-81; Ellis 1976).

4. *Mycovellosiella tarrii* Deighton, Mycological Paper Nos. 137: 20-21 (1974).

Spots formed on lamina, amphigenous, angular to irregular, initially yellowish, areas without definite margin, later developing brown spots, distinct, virulent, vein limited, sometimes coalescent, effuse, 2-8 mm in extent; caespituli amphigenous but chiefly hypophyllous, effuse, pale yellowish green; primary mycelium internal; stroma none; conidiophores chiefly hypophyllous, arising both laterally and terminally from the secondary mycelial hyphae, substraight or slightly sinuous towards the apex or geniculate above, pale olivaceous, simple or sometimes branched, smooth, continuous or rarely 1 septate, 2.50-3.50 \times 13.00 \times 66.00 μm ; secondary mycelium superficial, arising from a few hyphae which penetrate a stomata, repent, septate, smooth, pale brown, 2.50-3.00 μm wide; conidia solitary or sometimes catenate, subcylindric to cylindric, pale olivaceous,

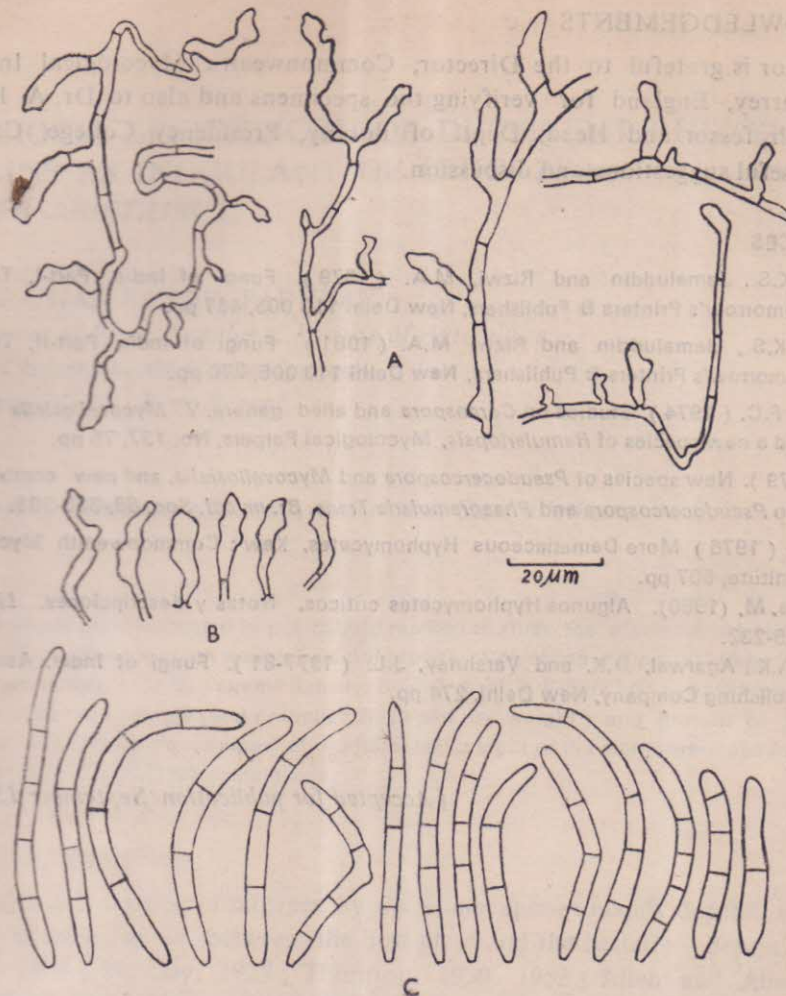


Fig. 4, *Mycovellosiella tarrii*

A. Secondary mycelial hyphae bearing conidiophores ; B, Conidiophores ;
C, Conidia.

straight to curved, smooth, 1-4 septate (mostly 4), occasionally 6 septate, broadly rounded at the apex, base shortly tapered to the hilum, 3.50-6.50x40.00-125.50 μm .

Specimen studied: On *Solanum melongena* Linn. (fam. Solanaceae), Mankundu, Hooghly, West Bengal, India, PCC 4966 (=IMI 311130), leg. K. K. Sarbajna, 28 August, 1986.

First time reported from India (Bilgrami *et al.* 1979, 1981; Sarbhoy *et al.* 1977-81; Ellis 1976).

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