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New species of *Mycovellosiella* and *Pyricularia* from West Bengal

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Two new species, *Mycovellosiella sacchari* sp. nov., and *Pyricularia costina* sp. nov., collected on *Saccharum officinarum* Linn. and *Costus speciosus* Smith respectively from West Bengal, are described, illustrated and compared with allied species.

Key words : New species, *Mycovellosiella, Pyricularia.*

During the collection of plant pathogenic fungi from different regions of West Bengal, author has collected many interesting foliicolous hyphomycetes.

The application of the generic name *Mycovellosiella* was done by Rangel in 1917. 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. gonatonlada* (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.*

The genus *Pyricularia* was first established by Saccardo in 1880 and cited *Pyricularia grisea* Sacc. as the type species of the genus.

MATERIALS AND METHODS

Field studies of the behaviour of these fungi were made and specimens of infected host tissues were collected from different areas of West Bengal under varied climatic conditions during different seasons of the years 1983-1989. Infected leaves with distinct symptoms were taken to the laboratory in separate polythene

bags. The specimens were dried and preserved following standard techniques. Microscopic slides were made in lactophenol, as well as free hand sections of the host leaf through the infected regions were also made to study the details of mycelial structures and stomata. The measurements of different structures were also taken at the same time and camera-lucida drawings were prepared. A part of each specimen (isotypes) was sent to CAB., Internationcl Mycological Institute, Kew, Surrey, England for accession and confirmation of the identity of fungi were made.

DESCRIPTION OF THE SPECIES

Mycovellosiella sacchari sp. nov.

Etym.—From the name of the host genus.

(Fig. 1)

Maculae amphigenae, distinctae, numerosae, orbiculares vel ellipticae, centro griseo, margin rubido brunneae cinctae, interdum maculae aggregatae, 3-11 mm. latae ; caespituli amphigeni sed plerumque hypophylli, tenuiter floccosi hypophylli ; mycelium primarium immersum, hyphae repentes intertextae et structuras fuiformes laxas hinc illinc efformantes, angustae, 1.5-2.5 μm diam., pallide brunneae, septatae, glabrae ; stroma nullum ; conidiophora hypophylla, solitaria, macro-usque semimacronematosa, mononematosa, pallide olivaceo-brunnea, cylindrica erecta, plus minusve flexuosa, laevia, pluriseptata usque 6, profuse ramosa vel eramosa, plus minusve geniculata, cicatricibus crassis praedita, 3-3.5 x 23-66 μm ; cellulae condiogenae in conidiophoris incorporatae, terminales, denide intercalares, polyblasticae, sympodiales, distinctae cicatricosae, olivaceo-brunneae, ad apices subhyalinae ; conidia solitaria, acropleurogena, subcylindrica vel obclavata, simplicia, ad apeces subobtusa vel obtusa, ad bases obconico-truncate, pallide olivaceo-brunnea, glabra, transverse 2-13 septa, ad septa constricta, hilo incrassato praedita, 2.5-3.5 x 23-80.5 μm.

Habitat in foliis vivis *Saccharii officinarum* Linn. (Fam Poaceae), Baduria, 24-Parganas, West Bengal, India, PCC 4961 (IMI 311125), leg. K. K. Sarbajna, 18 October, 1986.

Leaf spots amphigenous orbicular, elliptic to eye shaped, greyish centre surrounded by reddish brown margin, distinct, virulent, sometimes coalescent, 3-11 mm wide ; caespituli amphigenous, but chiefly hypophyllous, slightly floccose on ventral surface, deep olivaceous ; primary mycelium internal, repent hyphae, sometimes intertwined to form loose cord-like structures, narrow, 1.5-2.5 μm diam., light brown, septate, smooth ; stroma none ; conidiophores chiefly hypophyllous, solitary macro-to semimacronematous, mononematous, pale

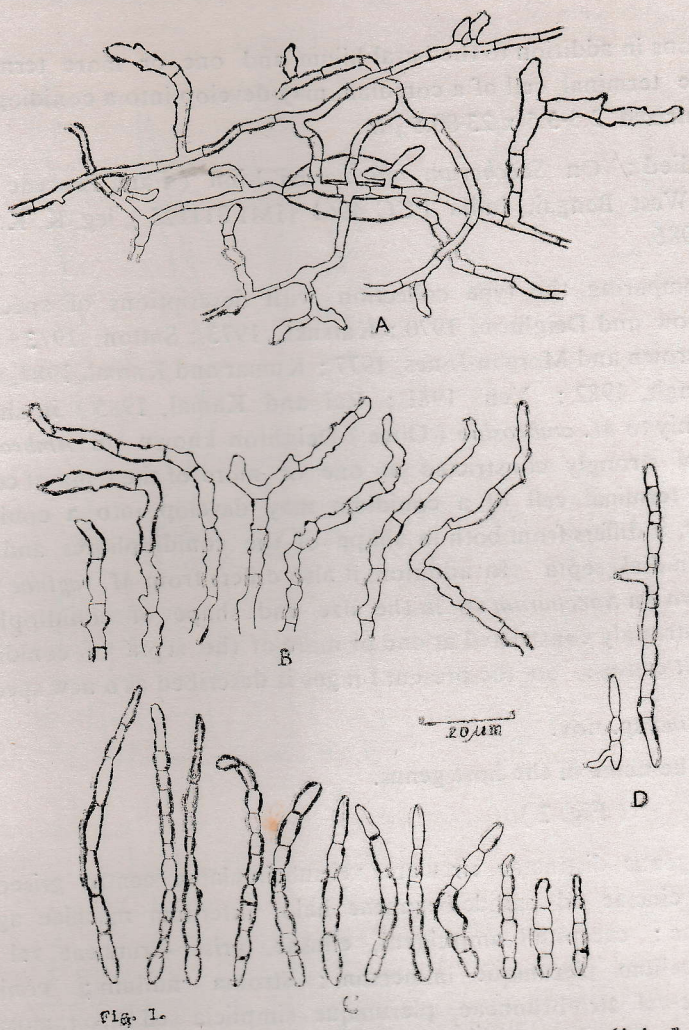

Fig. 1.

Fig 1. *Mycovellosiella sacchari*. A. Secondary mycelial hyphae bearing conidiophores ; B. Conidiophores ; C. Conidia ; D. Conidia Showing germ tubes.

olivaceous brown, cylindrical, erect, more or less flexuous, smooth, pluriseptate upto 6, profusely branched or unbranched, geniculate with distinct cicatrized scars, 3-3.5 x 23-66 µm ; conidiogenous cells integrated, terminal becoming intercalary, polyblastic, sympodial, olivaceous brown with subhyaline apices, loci cicatrized ; conidia solitary acropleurogenous, subcylindric or slightly obclavate, simple, mostly with subobtuse to obtuse apices, obconicotruncate bases, pale olivaceous brown, smooth, transversely 2-13 septate, strongly constricted at one or more of the septa, the conidia often bear lateral conidial scars at the end of

short projections in addition to the basal hilum and one or more terminal scars, sometimes the terminal cell of a conidium may develop into a conidiogenous cell, basal scar cicatrized, 2.5-3.5 x 23-80.5 μm.

Specimen studied : On *Saccharum officinarum* Linn. (Fam. Poaceae), Baduria, 24-Parganas, West Bengal, India PCC 4961 (IMI 311125), leg. K. K. Sarbajna, 18 October, 1986.

Note-After comparing the type collection with descriptions of species already described (Show and Deighton, 1970 ; Katsuki, 1973 ; Sutton, 1973 ; Deighton, 1974, 1979 ; Brown and Morgan-Jones, 1977 ; Kumar and Kamal, 1987, 1982 ; Rai, Kamal and Singh, 1982 ; Yen, 1981 ; Rai and Kamal, 1985) it shows slight resemblance only to *M. ambrosiae* (Olive) Deighton known on *Ambrosia trifida* in the type of strongly constricted at one or more of the septa of conidia and sometimes the terminal cell of a conidium may develop into a conidiogenous cell. However, it differs from both in shape of the conidiophores and size and number of conidial septa In addition, it also differs from *M. vaginae* (Kruger) Deighton known on *Saccharum* sp. in the size and shape of conidiophores and in the type of strongly constricted at one or more of the septa of conidia and in the symptoms it causes. So. the present fungus is described as a new species.

Pyricularia costina sp. nov.

Etym.—From the name of the host genus.

(Fig. 2)

Maculae amphigenae, distinctae, circulares vel subcirculares, centro griseo, margin atro-brunneae cinctae ad pallide-brunneae halo, interdum maculae aggregatae, 2-10 mm latae ; caespituli amphigeni, effusae, griseo-brunneae vel olivaceo-brunneae ; mycelium plerumque immersum ; stroma nullum ; conidiophora solitaria, pallide-vel atro-brunneae, plerumque simplicia sed raro ramosa, glabra, recta vel flexa, geniculata, pluriseptata (usque 3-15), cylindrica, denticulata, 4-6.5 x 26.4-330 μm ; conidia solitaria, obclavata vel late ellipsoidea, subhyalina vel pallide olivacea, simplicia, 1-3 septata, laevia, apice late rotundata, 6.5-10 x 23-39.5 μm.

Habitat in foliis vivis *Costus speciosus* Smith (Fam. Zingiberaceae), Murshidabad, West Bengal, India, PCC 4977 (IMI 311141), leg. K. K. Sarbajna 16 September, 1986.

Leaf spot amphigenous, distinct, circular to subcircular, greyish centre surrounded by blackish brown margin covering with pale brown halo, sometimes necrotic, often coalescent, 2-10 mm in wide ; caespituli amphigenous, effuse, greyish brown to olivaceous brown ; mycelium mostly immersed ; stroma none ; conidiophores solitary, pale to deep brown, usually simple but rarely branched,

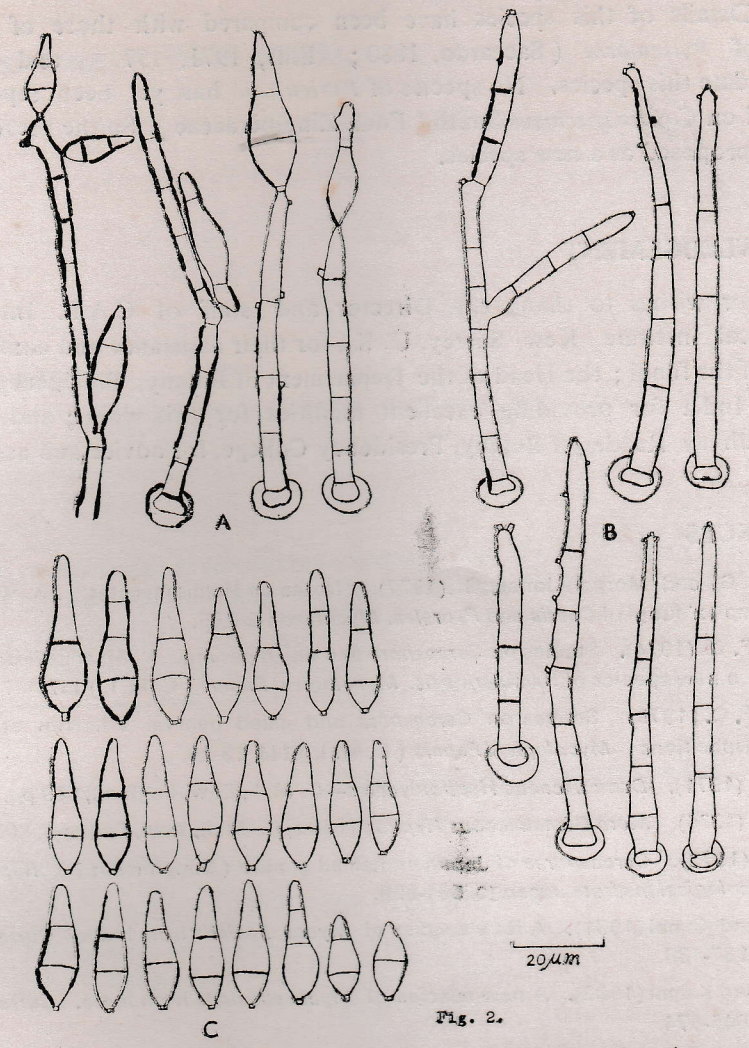

Fig. 2.

Fig. 2. *Pyricularia costina.* A. Solitary conidiophores with conidia; B. Solitary Conidiophores; C. Conidia.

smooth, straight to bent, geniculate, pluriseptate (upto 3-15), cylindrical, denticle, swollen base base 4-6.5 x 26.4-330 μm; conidia solitary, obclavate, or broadly ellipsoidal, subhyaline, to pale olivaceous, simple, 1-3 septate, smooth, apex bluntly rounded, conidial base with distinct hilum, 6.5-10 x 23-39.5 μm.

Specimen studied On *Costus speciosus* Smith (Fam. Zingiberaceae); Murshidabad, West Bengal, India PCC 4977 (IMI 311141). leg. K. K. Sarbajna 16 September, 1986.

Note :- Details of this species have been compared with those of described species of *Pyricularia* (Saccardo, 1880 ; Ellis, 1971, 1972) and none will accommodate this species. No species of *Pyricularia* has yet been reported and illustrated on *Costus speciosus* Smith (Fam. Zingiberaceae). So the present fungus has been proposed as a new species.

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