Fungi causing Plant Diseases at Jabalpur (M. P.) XV. Some Sphaeropsidales

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In the first 14 papers of this series (listed under references), 186 fungi imperfecti occurring at Jabalpur and its suburbs were described. The present paper describes six more foliicolous Deuteromycetes which include one new genus and five new species.

The number of the species are the serial numbers of the fungus flora of Jabalpur.

187. **Pycnothera cordiae** Agarwal & Sharma gen. et sp. nov.

On living leaves of *Cordia myxa* L. (Boraginaceae), Bohani, Nagpur Road, December 1968, leg. N. D. Sharma.

Symptoms of the disease:

Superficial, small, black, amphigenous, punctiform pycnidia are even seen by the naked eye. This is the only evidence of the fungus on the host.

The causal organism:

Pycnidia superficial, setose, 160—180 μ in diameter, shield shaped or plano-convex lens shaped, bright brown coloured at periphery to almost dark brown or opaque in the centre, glabrous with a typically parenchymatous wall, ostiole absent; setae long 1—5, usually 1—2, attenuate, brown to almost opaque, at times slightly swollen pale apex, widest at base, arise from the centre of the pycnidium, 32—300 μ long, 4—7 μ wide at the base, 4.5 μ wide at the apex; hymenium inverted, hyaline of small cells giving rise directly to pycnidiospores; pycnidiospores produced on obsolete conidiophores, roughly globular to obovate, base truncate, thin walled, 1-celled, 3.5—6.5 (—8) × 3—5.5 (—6), average 5.5 × 4.5 μ (Fig. 1—2).

This fungus does not agree with any of the described genera of Pycnothyreae. The fungus was examined also by Dr. Punithalingam, Commonwelth Mycological Institute, Kew, who reported that he did not know of a genus which can accomodate the present fungus.

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The noteworthy features of the fungus are:

(1) Pycnidium separate, superficial, shield shaped, astomous, setose.

(2) Pycnidiospores hyaline, single celled, obovate, noncatenulate, developed in an inverted hymenium.

Therefore, a new genus *Pycnothera* with the species *P. cordiae* is being proposed to accomodate with the present fungus. The proposed generic name indicates the family to which the fungus belongs and the specific epithet has been given after the host plant.

Pycnothera gen. nov.

Sphaeropsidales Pycnothyreae, Hyalosporae Pycnidia superficial, pinhead sized, shield shaped or lens shaped, dark brown to almost opaque in the centre, pseudoparenchymatous wall, astomous; setose; conidia hyaline, 1-celled, noncatenulate.

Pycnothera cordiae sp. nov.

Pycnidia superficial, setose, 160—180 μ in diameter, shield shaped or plano-convex lens-shaped, bright brown coloured at periphery to almost dark brown or oaque in the centre,, glabrous with a typically parenchymatous wall,, ostiole absent; setae long, 1—5, usually 1—2, attenuate, brown to almost opaque, at times slightly swollen pale apex, widest at base, arise from the centre of the pycnidium, 32—300 μ long, 4—7 μ wide a the base, 4.5 μ wide at the apex; hymenium inverted, hyaline of small cells giving rise directly to pycnidiospores; pycnidiospores produced on obsolete conidiophores, roughly globular to obovate, base truncate, thin walled, 1-celled, 3.5—6.5 (—8) × 3—5.5 (—6) μ, average 5.5 × 4.5 μ.

Pycnothera gen. nov.

Sphaeropsidales, Pycnothyreae, Hyalosporae. Pycnidia superficialia, pusilla clypei-morpha vel lenticularia, atrobrunnea vel fere opaca in centro, pariete pseudoparenchymatica, astoma setosa; pycnidiosporae hyalinae, unicellulares, noncatenulatae.

Pycnothera cordiae sp. nov.

Pycnidia superficialia, setosa, 160—180 μ in diametro, scutata vel plano-convexe lenticularia clare brunneo-colorata ad peripheriam ad fere atro-brunnea vel opaca in centro, glabra, pariete typice pseudoparenchymatico, astome, setae longae, 1—5, plerumque 1—2, attenuatae, brunneae vel fere opacae, interdum leviter inflatae apice pallidae, basi dilatatae pycnidii centrum canescens, 32—300 μ longis, basis inflata 4—7 μ, apices inflati 4,5 μ, hymenio inverso, hyalino, ecellulis pusillis pycnidiosporas deorsum versas edente; pycnidiosporae ebsoletis conidio-

phoris orientes globosae ad obovatae basis truncatae, pariete gracili, 1-cellulares, 3.5—6.5 (—8) × 3—5.5 (—6) μ, mediat 5.5 × 4.5 μ.

Hab. — In foliis viventibus *Cordiae mixae* L., Bohani, Nagpur prope Jabalpur, mense Dec. 1968, leg. N. D. Sharma.

Typus depositus in Herb. I. M. I. Kew, sub. numero 138934.

188. **Asbolisia indica** Agarwal & Sharma sp. nov.

Growing over *Microxyphium alangi* and hair of leaves of *Alangium lamarckii* Thw. (Cornaceae), Nagpur road, January 1969, leg. N. D. Sharma.

The causal organism:

Mycelium superficial, spreading over *Microxyphium*, brownish; hyphae olivaceous, septate, constricted, up to 6.5 μ wide; pycnidia scattered, subglose to pyriform, papillate, sessile, sometimes shortly stalked, olivaceous, ostiolate, 60—150 μ in diameter, up to 160 μ high, liberate spores from the top when pressed, glabrous, membranous, subparenchymatic, with wall made up of polygonal cells, ostiole at times fimbriate; pycnidiospores non-septate, obovate to obpyriform, 1-guttulate, hyaline, smooth, 6.5—9 × 3—7.5μ, average 6.5 × 5.5 μ.

Batista (1961) in his monograph on 'sooty molds' of the family Asbolisiaceae compiled all the species of the genus *Asbolisia* in two groups on the basis of the size of the pycnidiospores. Those having pycnidiospores between 4—8 μ were kept together and others with pycnidiospores less than 4 μ formed the other group. The pycnidiospores and pycnidia of the present fungus are distinctly larger in size than those of the other known species. There is no record of any *Asbolisia* sp. so far from India. The specimen was examined also by Mrs. Ellis of the Commonwealth Mycological Institute, Kew. This appears to be an undescribed species and is, therefore, presented here as a new species (Fig. 3—4).

Asbolosia indica sp. nov.

Mycelium superficiale, ex hyphis ramosis *Microxyphii*, brunnescens, ex hyphis olivaceis, septatis, constrictis, usque ad 6.5 μ dilatatis; pycnidia sparsa, subglobosa vel pyriformia, papillata, sessilia, nonnunquam brevi-stipitata, brunnescentia, ostiolata, 60—150 μ diam., usque ad 160 μ alt., glabrata, membranosa, subparenchymatica, cum parietibus ex cellulis polygonalibus, raro apice parum fimbriata; pycnidiosporae continuae, obclavatae vel obpyriformes, 1-guttulatae, hyalinae, laevigatae, 6.5—9 × 3—7.5 μ, mediat 6.5 × 5.5 μ.

Hab. Supercrescens *Microxyphium alangi* et super pilos ex foliis viventibus *Alangii lamarckii* Thw., Nagpur prope, januari 1969, leg. N. D. Sharma.

Typus lectus depositus in Herb. I. M. I., Kew, sub numero 140911.

189. **Coniella citri** Agarwal & Sharma sp. nov.

On living leaves of *Citrus medica* L.(Rutaceae), J. N. K. University campus, June 1969, leg. N. D. Sharma.

Symptoms of the disease:

Disease starts from leaf apex as ash coloured spots and gradually increases downwards. Black dot-like pycnidia appear on both sides of the lamina. Midrib and other veins are freely traversed. Necrotic region becomes lighter in colour and in the later stages it becomes almost white.

The causal organism:

Pycnidia dark brown, innate to erumpent, globose to subglobose, beaked, wall 3—4 cells thick, 105—180 μ in diameter; conidiophores simple, filiform, subhyaline, in groups at the base; conidia pale yellow to straw coloured, single celled, fusiform to elliptic-fusiform, straight or curved, epispore thin, smooth and eguttate, 8—19 × 3—4.5 μ, average 18 × 3.5 μ (Fig. 5—6).

As far as known to us only one species of *Coniella, C. diplodiella* has been reported from India so far. It has been reported on *Vitis vinifera* from Pusa (Bihar) by Mundkur (1938), on *Anogeissus latifolia* from Jabalpur by Sahni (1965) and on *Geranium* sp. from Aligarh by Singh et al. (1966).

The present fungus can be placed under the subgenus *Pseudoconiella* of Sutton (1969) on the basis of conidial colour, thin epispore and eguttate nature. But it differs distinctly from all the described species under *Pseudoconiella* in the shape of the spores. Fusiform and curved spores as present in this fungus are not found in any other species under the subgenus. So far no *Coniella* has been reported on any *Citrus* sp. The present fungus is, therefore, being described here as a new species of *Coniella.*

Coniella citri sp. nov.

Pycnidia fusco-brunnea, innata ad erumpentia, globosa vel subglobosa, papillata, parietibus 3—4 cellulas crassis, 105—180 μ diam.; conidiophori simplices, filiformes, subhyalini, basi aggregati; conidia pallide flava vel straminea, singularia, fusiformia vel elliptico-fusiformia, recta vel curvata, episporio tenui et laevi, eguttata, 8—19 × 3—4.5 μ, mediat 18 × 3.5 μ.

Hab. In foliis viventibus *Citri medicae* L., J. N. K. Univ. campus, junio 1969, leg. N. D. Sharma.

Typus lectus depositus in Herb. I. M. I., Kew, sub numero 143221.

190. **Catenulaster batistae** Agarwal & Sharma sp. nov.

On living leaves of *Cordyline terminales* (Liliaceae), College campus, Dec. 1968, leg. N. D. Sharma.

Symptoms of the fungus:

Fungus forms epiphyllous, black, punctiform, superficial scattered bodies easily detachable with the help of needle.

Description of the fungus:

Free mycelium lacking, pycnostromata superficial epiphyllous, orbicular, scutellate, brown, glabrous, pseudoostiolate, prosenchymatic wall, up to 8.5 μ thick, subhyaline at margin, 40—236 μ in diameter; conidiophores indistinct; pycnidiospores elliptical to bacillar, hyaline, catenulate, sessile, 2.5—4.5 × 2—3 μ, average 3.5 × 2.5 μ (Fig. 7—8).

The genus *Catenulaster* is so for known only by its type species, *C. anacardicola* Batista. The present fungus is quite distinct from the type species in the size of the pycnostromata. The pycnostromata in the present case are distinctly larger (40—236 μ) than those in the type species (90—110 μ). *Catenulaster* has not so far been reported from India. *Cordyline terminales* is a new host for *Catenulaster*. This fungus is, therefore, being described here as a new species. The species has been named after the late Prof. A. C. Batista who created the genus *Catenulaster*.

Catenulaster batistae sp. nov.

Mycelium liberum nullum; pycnostromata superficialia, epiphylla, facile separata, orbicularia, scutellata, brunnea, glabrata, pseudoostiolata, parietibus prosenchymaticis, usque ad 8.5 μ crassis, subhyalinis in marginibus, 40—236 μ diam.; conidiophori non visi; pycnidiosporae ellipsoideae vel bacillares, hyalinae, catenulatae, sessiles, 2.5—4.5 × 2—3 μ, mediat 3.5 × 2.5 μ.

In foliis viventibus *Cordylinis terminalis* Kunth., College campus in India mense Decembre 1968, leg. N. D. Sharma.

Typus positus in Herb. I. M. I., Kew, sub numero 140915.

191. **Cytospora cedrelina** Agarwal & Sharma sp. nov.

On leaves of *Cedrela toona* Roxb. (Meliaceae), Pachmarhi, October 1968, leg. N. D. Sharma.

Symptoms of the disease:

Disease starts as brown spots from margin towards midrib. The lesions are irregular. Sometimes zonations of brown and grey colour present. Stromata appear as black pinhead spots on the lesions. Coalescence of spots seldom takes place.

The causal organism:

Pycnidia stromatic, stroma black, completely embedded in the host tissue, depressed globose, bearing 2 — pycnidia; pycnidial cavities subglobose, up to 160 μ n diameter; conidiophores hyaline, short, cylindrical, 4—8 × 1.5—2.5 μ, average 6 × 2 μ; conidia hyaline to subhyaline, single celled, allantoid, 3.5—6 × 1.8—2.8 μ; average 4.5—2.5 μ (Fig. 9—10).

There are only eight species of *Cytospora* described from India so far (S a h n i 1968). S a h n i (1968) described *Cytospora grevilleae* on leaves of *Grevillea robusta* from Jabalpur. So far there is no record of any *Cytospora* on *Cedrela* or on any other member of the family Meliaceae. The present fungus is, therefore, being described here as a new species, *Cytospora cedrelina.*

Cytospora cedrelina sp. nov.

Pycnidia stromatica, stroma atrum, in hospis contextu perfecte inclusa, depresso-globosa, 2 — pycnidia ferentia; cavernae pycnidi ales subglobosae, usque ad 160 μ diam., conidiophori hyalini, breves, cylindrici, 4—8 × 1.5—2.5 μ, mediat 6 × 2 μ; conidia hyalina vel subhyalina, unicellularia, allantoidea, 3.5—6 × 1.8—2.8 μ; mediat 4.5—2.5 μ.

In foliis viventibus *Cedrelae toonae* Roxb., Pachmarhi, Octobri 1968, leg. N. D. S h a r m a.

Typus lectus depositus in Herb. I. M. I., Kew, sub numero 140897.

192. **Cytospora mangiferae** Agarwal & Sharma sp. nov.

On living leaves of *Mangifera indica* L. (Anacardaceae), Govind Bhavan, July 1969, leg. N. D. S h a r m a.

Symptoms of the disease:

Disease usually starts from leaf apex or margins and proceeds downwards or inwards. The affected tissues become necrotic with light brown colour. Black pycnidia appear as pinhead sized spots in the necrotic region.

The causal organism:

Stroma dark brown to almost black, carbonaceous, coriaceous, dorsiventrally flattened, circular, bearing 3—4 pycnidial cavities, up to 800 μ in diameter; pycnidial cavities globose to subglobose, astomous, up to 40—230 μ in diameter; conidiophores hyaline, filiform, 10—16 × 1—2 μ, average 14 × 1.5 μ; conidia hyaline, 1-celled, ovoid to elliptic or allantoid, 1.5—3.5 × 1—1.8 μ, average 3 × 1.3 μ. (Fig. 11—12).

The present *Cytospora* does not match with any of the described species. The genus has not so far been reported on *Mangifera indica.* The present fungus is, therefore, described here as a new species.

Cytospora mangiferae sp. nov.

Atro-brunnea vel fereatra, carbonaceus, coriaceus, dorsiventraliter complanata, circularis, 3—4 cavernae pycnidiales ferens, usque ad 800 μ in diam.; cavernae pycnidiales, globosae vel subglobosae, astomae usque ad 40—230 μ in diam.; conidiophori hyalini, filiformes, 10—16 × 1—2 μ, mediat 14 × 1.5 μ; conidia hyalina, unicellularia, ovoidea vel ellipsoidea aut allantoidea, 1.5—3.5 × 1—1.8 μ, mediat 3 × 1.3 μ.

Hab. In foliis viventibus *Mangiferae indicae* L., Govind Bhavan, julio 1969, leg. N. D. Sharma.

Typus lectus depositus in Herb. I. M. I. sub numero 143243.

Summary

The present paper describes six foliicolous Deuteromycetes from Jabalpur which include *Pycnothera cordiae* gen. et sp. nov. on *Cordia myxa* L., one new genus; *Asbolisia indica* sp. nov. on *Alangium lamarckii* Thw., *Coniella citri* sp. nov. on *Citrus medica L.*, *Catenulaster batistae* sp. nov. on *Cordyline terminales* Kunth., *Cytospora cedrelina* sp. nov. on *Cedrela toona* Roxb. and *Cytospora mangiferae* sp. nov. on *Mangifera indica* L., five new species.

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