

## 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 cardiae* Agarwal & Sharma gen. et sp. nov.

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

Symptoms of the disease:

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

The causal organism:

Pycnidia superficial, setose, 160—180  $\mu$  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  $\mu$  long, 4—7  $\mu$  wide at the base, 4.5  $\mu$  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)  $\times$  3—5.5 (—6), average 5.5  $\times$  4.5  $\mu$ .

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

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The noteworthy features of the fungus are:

1. Pycnidium separate, superficial, shield shaped, astomus, setose.
2. Pycnidiospore hyaline, single celled, obovate, noncatenulate, developed in an inverted hymenium.

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

### ***Pycnothera* gen. nov.**

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

### ***Pycnothera cardiae* sp. nov.**

Pycnidia superficial, stenose, 160—180  $\mu$  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  $\mu$  long, 4—7  $\mu$  wide at the base, 4.5  $\mu$  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)  $\times$  3—5.5 (—6)  $\mu$ , average 5.5  $\times$  4.5  $\mu$ .

Pycnidia superficialia, minuta, clypeiformia vel lenticularia atro-brunnea, vel fere opaca in centro, omino clausa, setosa; pariete pseudoparenchymatico; conidia hyalina, continua, non catenulata, in conidiophoris obsoletis orta.

### ***Pycnothera cardiae* sp. nov.**

Pycnidia superficialia, dispersa 100—180  $\mu$  diam, clausa nec ostiolata, setosa, scutata vel leniter convexa, lenticularia, brunnea ad marginem fere atro-brunnea, obscura in centro, glabra; pariete pseudoparenchymatico, setae 1—5.5 (—6)  $\mu$ , plerumque 1—2, brunneae vel obscurae, superne attenuatae, in apic interdum leniter inflatae ad basim tumidae 32—300  $\mu$  longae, ad basim 4—7  $\mu$  in apice 4.5  $\mu$  latae; pycnosporae globosae vel obovoideae ad basim truncatae 3.5—6.5 (6—8)  $\times$  3—3.5.

Hab. — In folii viventibus *Cardiae mixae* L., Bohani, Nagpur Prope, Jabalpur, mense Dec. 1968, leg. N. D. Sharma. Typus positus 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 oliivaceous, septate, constricted, upto 6.5  $\mu$  wide; pycnidia scattered, subglobose to pyriform, papillate, sessile, sometimes shortly stalked, olivaceous, ostiolate, 60—150  $\mu$  in diameter, upto 160  $\mu$  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  $\times$  3—7.5  $\mu$ , average 6.5  $\times$  5.5  $\mu$ .

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  $\mu$  were kept together and others with pycnidiospores less than 4  $\mu$  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. Mr. Ellis of the Commonwealth Mycological Institute, Kew. This appears to be an undescribed species and is, therefore, presented here as a new species.

Mycelium superficiale ex hyphis ramosis, olivaceis, septatis ad septa constrictis ad 6,5  $\mu$  crassis compositum; Pycnidia dispersa, globosa, subglobosa vel piriformia, papillata interdum breviter stipitate, brunnescentia, ostiolata, 60—150  $\mu$  diam, et usque ad 160  $\mu$  alt., glabra; pariete membranaceo, pseudoparenchymatico ex e cellululis polygomalibus composito; conidia obclavata vel obpiriformia, uniguttulata, hyalina 6.5—9  $\times$  3—7.5  $\mu$ .

Hab. Supercrecens *Microxyphium alangi* et super pilis ex foliis viventibus *Alangii lamarckii* Thw., Nagpur prope, januarii 1969, leg. N. D. Sharma.

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

189. *Coniella citrii* 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 lighther 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  $\mu$  in diameter; conidiophores simple, filiform, subhyaline, in groups to the base; conidia pale yellow to straw coloured, single celled, Fusiform to elliptic-fusiform, straight or curved, epispore thin smooth and eguttate, 8—10  $\times$  3.5  $\mu$ , average 18  $\times$  3.5  $\mu$ .

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 Sahnî (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*.

Pycnidia obscure brunnea, innato-erumpentia, globosa vel subglobosa, papillata; 105—180  $\mu$  diam.; pariete crassiusculo, e stratis cellularum 3—4 composito; conidiophora simplicia, filiformia subhyalina gregatim ad basim orta; conidia passide lutea vel straminea, ellipsoidea vel ellipsoideo-fusiformia, recta vel leniter curvula, episporio, levi, eguttulata 8—19  $\times$  3—4.5  $\mu$ .

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

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

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

On living leaves of *Cordyline terminales* (Lilliaceae) 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, upto 8.5  $\mu$  thick, subhyaline et margin, 40—236  $\mu$  in diameter; conidiophores indistinct; pycnidiospores elliptical to bacillar, hyaline, catenulata, sessile, 2.5—4.5  $\times$  2—3  $\mu$ , average 3.5  $\times$  2.5  $\mu$ .

The genus *Catenulaster* is so far 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  $\mu$ ) than those in the type species (90—110  $\mu$ ). *Catenulaster* has not so far been reported from India. *Cordyline terminales* is a new host record for *Catenulaster*. This fungus is, therefore, being described here as new species. The species has been named after the late Prof. A. C. Batista who created the genus *Catenulaster*.

Pycnostromata superficialia, epiphylla facile secedentia, orbicularia, scutellata, brunnea, glabra, pseudostiolata; pariete pseudoparenchymatico, crasso in margine subhyalino usque ad 8,5  $\mu$ , 40—236  $\mu$  diam.; conidiophora non visa; pycnidiosporae ellipsoideae vel bacillares, continuae, hyalinae, 2,5—4,5  $\times$  2—3  $\mu$ , plerumque 3,5  $\times$  2,5  $\mu$ .

In folii viventibus *Cordyline terminalae* Cunth., College campus in India mense Decembri 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, upto 160  $\mu$  in diameter; conidiophores hyaline, short, cylindrical, 4—8  $\times$  1,5—2,5  $\mu$ , average 6  $\times$  2  $\mu$ ; conidia hyaline to subhyaline, single celled, allantoid, 3,5—6  $\times$  1,8—2,8  $\mu$ ; average 4,5—2,5  $\mu$ .

There are only eight species of *Cytospora* described from India so far Sahni (1968) described *Cytospora grevilleae* on leaves of *Grevillea robusta* from Jabalpur. So far there is no record 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.

Stromata dispersa, nigrescentia matrici omnino innata, ambitu orbicularia, depresso-globosa, loculis nonnullis subglobosis usque ad 160  $\mu$  diam. praedita; conidiophora breviscula, cylindratae, 4—8  $\times$  1,5—2,5  $\mu$ ; conidia allantoida, continua, hyalina vel subhyalina, 3,5—6  $\times$  1,8—2,8  $\mu$ , plerumque 4,5  $\times$  2,5  $\mu$ .

In foliis viventibus *Cedrelae toonae* Roxb., Pachmarhi, Octobri, 1968, leg. N. D. Sharma.

Typus lectus in positus in Herb. I. M. I. Kew, sru numero 140897.

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

On living leaves of *Mangifera indica* L. (Anacardaceae), Govind Bhavan, July 1969, leg. N. D. Sharma.

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 in colour. Black pycnidia appear as pinhead sized spots in the necrotic region.

The causal organism:

Stroma dark brown to almost black, carbonous, coriaceous, dorso-ventrally flattened, circular, bearing 3—4 pycnidial cavities, upto 800  $\mu$  in diameter; pycnidial cavities globose to subglobose, astomous, upto 40—230  $\mu$  in diameter; conidiophores hyaline, filiform, 10—16  $\times$  1—2  $\mu$ , average 14  $\times$  1.5  $\mu$ ; conidia hyaline, 1-celled, ovoid to elliptic or allantoid, 1.5—3.5  $\times$  1—1.8  $\mu$ , average 3  $\times$  1.3  $\mu$ .

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.

Stromata atro-brunnea vel brunnea, applanata, carbonacea, orbicularia, 3—4 loculis praedita usque ad 800  $\mu$  diam.; loculi globosi vel subglobosi, non ostiolati 40—230  $\mu$  diam.; conidiophora filiformia 10—16  $\times$  1—2  $\mu$ . Plerumque 14  $\times$  1.5  $\mu$ ; conidia ovoidea vel allantoidea, continua 1.5—3.5  $\times$  1—1.8  $\mu$ , plerumque 3  $\times$  1.3  $\mu$ .

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

Typus lectus ad positus in Herb. I. M. I. sub numero 143243.

### Summary

The present paper describes six foliicolous Deuteromycetes from Jabalpur which include *Pycnothera cardiae* gen. et sp. nov. on *Cardia mixa* L.; *Asbolisia indicis* sp. nov. on *Alangium lamarckii* Thw., *Coniella citrii* sp. nov. on *Citrus medica* L., *Catenulaster batistae* sp. nov. on *Cordylone terminales* Cunth., *Cytospora cedrelina* sp. nov. on *Cedrela toona* Roxb. and *Cytospora mangiferae* sp. nov. on *Mangifera indica* L.

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