

## Cercosporoid hyphomycetes on *Barringtonia* spp.

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Cercosporoid hyphomycetes on *Barringtonia* spp. are discussed. *Pseudocercospora barringtoniae-acuteangulae* sp. nov. and *P. barringtoniigena* sp. nov. are described and illustrated.

Keywords: *Pseudocercospora*, cercosporoid hyphomycetes.

Braun & al. (1999) described *Pseudocercospora barringtoniicola* U. Braun & Mouch., based on material on *Barringtonia speciosa* from Tahiti, French Polynesia, and discussed the taxonomic status of *Cercospora barringtoniae* Syd. & P. Syd. Type material of the latter species has been re-examined, and found to belong to *Cercospora* s. str., because of its conspicuously thickened and darkened loci (scars) in the conidiogenous cells and conidial hila, as well as sub-hyaline conidia. Hence, the combination *Pseudocercospora barringtoniae* (Syd. & P. Syd.) N. Khan & S. Shamsi (Khan & Shamsi, 1983: 110), based on material of *Barringtonia acuteangula* from Bangladesh, is misapplied. Various collections on *Barringtonia acuteangula*, deposited at IMI, have been examined and compared with type material of *Pseudocercospora barringtoniicola*. The fungus on *Barringtonia acuteangula* is distinguished from the latter species by absent or small stromata, and very long, pluriseptate conidiophores. It represents a new species which is described here as *Pseudocercospora barringtoniae-acuteangulae* sp. nov.

Based on Chinese material on *Barringtonia yunnanensis*, Liu and Guo (1982) referred *Cercospora barringtoniae* to *Pseudocercospora*, which is, however, a misapplied combination. The Chinese fungus has, therefore, to be reassessed and described as a new species. Furthermore, a collection of a cercosporoid hyphomycete on

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*Barringtonia asiatica* from Futuna, a South Pacific island, also belongs in *Pseudocercospora*. It differs from *P. barringtoniicola* and *P. barringtoniae-acuteangulatae* in having large, pustulate to crustose stromata and narrower conidia, and is described here as *P. barringtoniigena* sp. nov.

***Pseudocercospora barringtoniae-acuteangulatae* U. Braun & Mouch., sp. nov. – Fig. 1.**

A *P. barringtoniicola* stromatibus nullis vel minutis et conidiophoris longis et pluriseptatis differt.

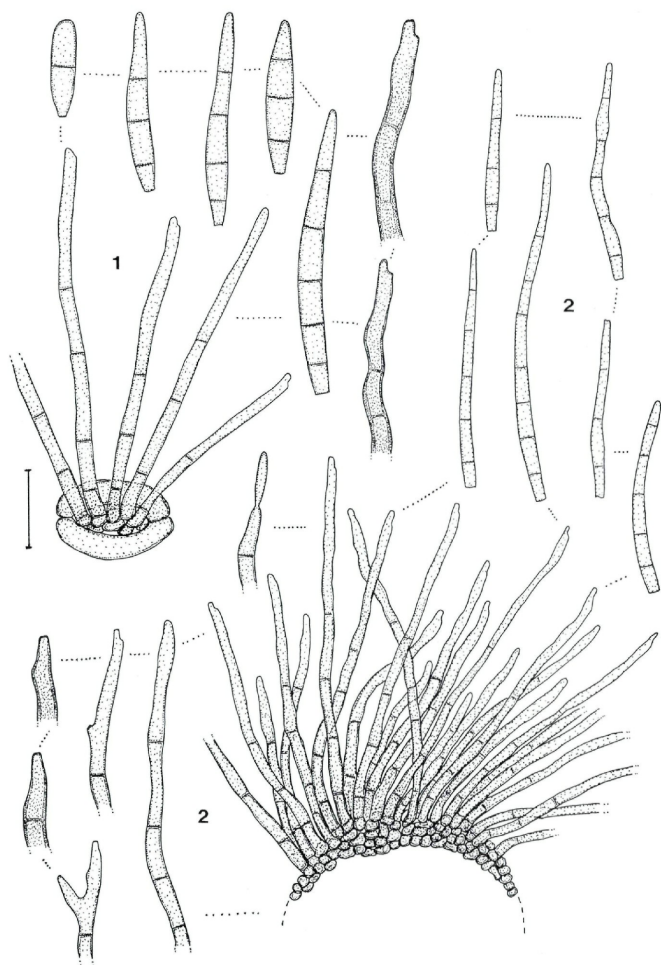
Holotypus. – *in foliis vivis Barringtoniae acuteangulatae* Gaertn. (Lecythidaceae), India, Uttar Pradesh, Gorakhpur, 21 January 1988, S. Chandra KSC 21 (IMI 330830).

Paratypi. – *in foliis vivis Barringtoniae acuteangulatae*, India, Uttar Pradesh, Gorakhpur, 13 December 1989, A. S. Moses (IMI 337596); Bangladesh, Dhakar, 11 March 1976, Quyyum 40 (IMI 262433).

Leaf spots indistinct to distinct, at first visible as small angular-irregular to subcircular discolorations, 1–2 mm diam., dull grey-olivaceous to brown, margin indefinite, later confluent, forming large patches, sometimes with a purplish border. – Caespituli hypophyllous, rarely epiphyllous, finely punctiform to subeffuse, loose to dense, grey-olivaceous to brown. – Mycelium internal; stromata lacking or very small, composed of a few swollen hyphal cells, brown, substomatal. – Conidiophores in small fascicles, mostly in groups of 2–8, loose, arising from internal hyphae or substomatal hyphal aggregations, emerging through stomata, erect, straight, subcylindrical to geniculate-sinuuous in the upper half, unbranched,  $30\text{--}185 \times (3\text{--})4\text{--}7 \mu\text{m}$ , pluriseptate (usually 2–6 septa), olivaceous to medium brown, paler towards the apex, wall somewhat thickened, smooth. – Conidiogenous cells integrated, terminal,  $10\text{--}40 \mu\text{m}$  long, occasionally becoming intercalary, proliferation sympodial, loci (scars) inconspicuous, occasionally subdenticulate. – Conidia solitary, obclavate (-subcylindric),  $20\text{--}70\text{--}(85) \times (4\text{--})4.5\text{--}7\text{--}(8) \mu\text{m}$ , 1–6(–7)-septate, pale olivaceous to olivaceous brown or light brown, thin-walled, smooth, apex obtuse, base obconically truncate, hila  $1.5\text{--}2.5 \mu\text{m}$  wide, unthickened, not darkened.

***Pseudocercospora barringtoniigena* U. Braun & Mouch., sp. nov. – Fig. 2.**

A *P. barringtoniicola* caespitulis punctiformibus, pustuliformibus vel crustaceis, conidiophoris longis et conidiis  $1.5\text{--}5 \mu\text{m}$  latis differt.



Figs 1-2. - Conidiophore fascicles, conidiophores, conidia. - 1. *Pseudocercospora barringtoniae-acutangulae*. - 2. *Pseudocercospora barringtoniigena*. - Bar = 20  $\mu$ m (drawn by U. Braun).

Holotypus. – *in foliis vivis Barringtoniae asiaticae* Kurz (Lecythidaceae), Ile de Futuna, 5 July 1962, F. Cohic, W.F. 62-180 (PC).

Leaf spots amphigenous, subcircular to somewhat irregular, 1–10 mm diam. or confluent, forming large patches, up to 40 mm diam., pale brown to pale medium brown, later medium to dark brown with abundant fructification, margin indefinite to distinct, narrow to moderately wide, often somewhat raised, brownish, occasionally red or purple-brown, sometimes with an ochraceous to brownish halo. – *Caespituli* amphigenous, punctiform, later often confluent, forming dense, crustose layers, medium to dark brown. – *Mycelium* internal; *stromata* amphigenous, immersed to somewhat erumpent, 20–80  $\mu\text{m}$  diam., subcircular in outline, dark brown, composed of swollen hyphal cells, 2–10  $\mu\text{m}$  wide. – *Conidiophores* in loose to dense, occasionally subsynnematus fascicles, arising from *stromata*, erumpent, erect, straight, filiform to geniculate-sinuuous, often with swellings and constrictions, rarely branched, 20–200  $\times$  3–7  $\mu\text{m}$ , pluriseptate throughout, olivaceous to medium dark brown throughout or tips paler; wall somewhat thickened, smooth. – *Conidiogenous* cells integrated, terminal, occasionally intercalary, 10–60  $\mu\text{m}$  long; loci (scars) inconspicuous, occasionally subdenticulate and subconspicuous (slightly refractive), proliferation sympodial, rarely percurrent. – *Conidia* solitary, filiform-subacicular, obclavate-subcylindric, 20–90  $\times$  1.5–5  $\mu\text{m}$ , 2–8-septate, hyaline, subhyaline, pale green-olivaceous, smooth, apex subacute or subobtuse, base truncate, occasionally slightly obconically truncate, hila 1–2.5  $\mu\text{m}$  wide, unthickened, not darkened.

The cercosporoid hyphomycetes occurring on *Barringtonia* can be distinguished as follows:

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|-----|---|---|
| 1.  | Loci (scars) and hila conspicuous, thickened and darkened ....  | 2 |
| 1.* | Loci (scars) and hila inconspicuous, not darkened ( <i>Pseudocercospora</i> ) .....   | 3 |
| 2.  | Conidia catenate; on <i>Barringtonia yunnanensis</i> , China .....  |   |
|     | ..... <i>Phaeoramularia</i> sp.   |   |
|     | [misapplied name: <i>Ph. barringtoniae</i> (Syd. & P. Syd.) X. J. Liu & Y. L. Guo <i>sensu</i> Liu & Guo (1982)]                |   |
| 2.* | Conidia solitary, narrowly obclavate-subcylindric, filiform, subhyaline; on <i>Barringtonia luzoniensis</i> , Philippines ..... |   |
|     | ..... <i>Cercospora barringtoniae</i>   |   |

3. Stromata large, 20–80  $\mu\text{m}$  diam.; caespituli punctiform, pustulate to crustose; conidia filiform-acicular to narrowly obclavate-subcylindrical, 20–90  $\times$  1.5–5  $\mu\text{m}$ ; on *Barringtonia asiatica*, Futuna .....  
..... *Pseudocercospora barringtoniigena*
- 3.\* Stromata smaller or caespituli subeffuse to punctiform, but not pustulate-crustose; conidia obclavate-subcylindrical, 4–8  $\mu\text{m}$  wide; on other hosts ..... 4
4. Stromata absent or very small, composed of a few swollen hyphal cells, substomatal; conidiophores 30–185  $\mu\text{m}$  long, pluriseptate (usually 2–6 septa); on *Barringtonia acutangula*, Bangladesh, India ..... *Pseudocercospora barringtoniae-acutangulae*
- 4.\* Stromata well-developed, 30–60  $\mu\text{m}$  diam., substomatal to intraepidermal; conidiophores shorter, 10–50  $\mu\text{m}$  long, 0–2(–3)-septate; on *Barringtonia speciosa*, Tahiti (French Polynesia) .....  
..... *Pseudocercospora barringtoniicola*

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