Cercosporoid hyphomycetes on *Barringtonia* spp.

Uwe Braun and Jean Mouchacca

Martin-Luther-Universität, FB. Biologie, Institut für Geobotanik und Botanischer Garten, Neuwerk 21, 06099 Halle (Saale), Germany

Museum National d'Histoire Naturelle, Laboratoire de Cryptogamie, 12 rue Buffon, 75005 Paris, France


Cercosporoid hyphomycetes on *Barringtonia* spp. are discussed. *Pseudocercospora barringtoniae-acutangulae* 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 acutangula* from Bangladesh, is misapplied. Various collections on *Barringtonia acutangula*, deposited at IMI, have been examined and compared with type material of *Pseudocercospora barringtoniicola*. The fungus on *Barringtonia acutangula* is distinguished from the latter species by absent or small stromata, and very long, plurisepatate conidiophores. It represents a new species which is described here as *Pseudocercospora barringtoniae-acutangulae* 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

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

**Pseudocercospora barringtoniae-acutangulae** 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 acutangulae* Gaertn. (Lecythidaceae), India, Uttar Pradesh, Gorakhpur, 21 January 1988, S. Chandra KSC 21 (IMI 330830).

**Paratypi.** – *in foliis vivis Barringtoniae acutangulae*, 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-sinuous in the upper half, unbranched, 30–185 × (3–)4–7 μm, pluriseptate (usually 2–6 septa), olivaceous to medium brown, paler towards the apex, wall somewhat thickened, smooth. – Conidiogenous cells integrated, terminal, 10–40 μm long, occasionally becoming intercalary, proliferation sympodial, loci (sears) inconspicuous, occasionally subdenticulate. – Conidia solitary, obclavate (–subcylindric), 20–70(–85) × (4–)4.5–7 (–8) μm, 1–6(–7)-septate, pale olivaceous to olivaceous brown or light brown, thin-walled, smooth, apex obtuse, base obconically truncate, hila 1.5–2.5 μm 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 1.5–5 μm latis differt.

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 μm diam., subcircular in outline, dark brown, composed of swollen hyphal cells, 2–10 μm wide. — Conidiophores in loose to dense, occasionally subsynnematous fascicles, arising from stromata, erumpent, erect, straight, filiform to geniculate-sinuous, often with swellings and constrictions, rarely branched, 20–200 × 3–7 μm, plurisepitate throughout, olivaceous to medium dark brown throughout or tips paler, wall somewhat thickened, smooth. — Conidiogenous cells integrated, terminal, occasionally intercalary, 10–60 μm long; loci (scars) inconspicuous, occasionally subdenticulate and subconspicuous (slightly refractive), proliferation sympodial, rarely percurrent. — Conidia solitary, filiform-subcylindric, obclavate-subcylindric, 20–90 × 1.5–5 μm, 2–8-septate, hyaline, subhyaline, pale green-olivaceous, smooth, apex subacute or subobtuse, base truncate, occasionally slightly obconically truncate, hila 1–2.5 μm wide, unthickened, not darkened.

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

1. Loci (scars) and hila conspicuous, thickened and darkened .... 2
1.* Loci (scars) and hila inconspicuous, not darkened (Pseudo-cercospora) .......................................................... 3

2. Conidia catenate; on Barringtonia yunnanensis, China ............
   .......................................................... Phaeoramularia sp.
   [misapplied name: Ph. barringtoniae (Syd. & P. Syd.) X. J. Liu & Y. L. Guo sensu Liu & Guo (1982)]
2.* Conidia solitary, narrowly obclavate-subcylindric, filiform, sub-hyaline; on Barringtonia luzoniensis, Philippines ...........................
   .......................................................... Cercospora barringtoniae

76
3. Stromata large, 20–80 μm diam.; caespituli punctiform, pustulate to crustose; conidia filiform-acicular to narrowly obclavate-subcylindric, 20–90 × 1.5–5 μm; on *Barringtonia asiatica*, Futuna ........................................... *Pseudocercospora barringtoniigena*  
3.* Stromata smaller or caespituli subeffuse to punctiform, but not pustulate-crustose; conidia obclavate-subcylindric, 4–8 μm wide; on other hosts ................................................................. 4

4. Stromata absent or very small, composed of a few swollen hyphal cells, substomatal; conidiophores 30–185 μm long, pluriseptate (usually 2–6 septa); on *Barringtonia acutangula*, Bangladesh, India .......................... *Pseudocercospora barringtoniae-acutangulae*  
4.* Stromata well-developed, 30–60 μm diam., substomatal to intraepidermal; conidiophores shorter, 10–50 μm long, 0–2–(3)-septate; on *Barringtonia speciosa*, Tahiti (French Polynesia) .............  
................................................................. *Pseudocercospora barringtoniicola*

**Acknowledgments**

The present study was undertaken as part of the multidisciplinary project Land Biodiversity in New Caledonia of the Muséum National d’Histoire Naturelle, Paris, France, which supported J. Mouchacca in all respects.  
Prof. Ph. Morat and Dr. M. Schmid of the Laboratoire de Phanérogamie, Muséum National d’Histoire Naturelle, are gratefully acknowledged for their help in the identification of the plant-host of the South Pacific studied specimen. Prof. P. Crous kindly accepted to review the manuscript.

**References**


Liu, X.-J. & Y.-L. Guo (1982). Studies on some species of the genus *Phaeo-

*(Manuscript accepted 18th May 2000)*