

Two new cercosporoid hyphomycetes

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Cercospora herniariae sp. nov., recently found in Brandenburg (Germany) on *Herniaria glabra*, and *Pseudocercospora daphniphylicola* sp. nov., collected in Jiangxi (China) on *Daphniphyllum pentandrum*, are described, illustrated, and discussed in relation to comparable species.

Zusammenfassung: Braun, U., Kummer, V. & Hönig, L. 2015: Zwei neue cercosporoide Hyphomyzeten. *Schlechtendalia* **28**: 71–75.

Die kürzlich in Brandenburg (Bundesrepublik Deutschland) auf *Herniaria glabra* gefundene *Cercospora herniariae* sp. nov. und die in Jiangxi (China) auf *Daphniphyllum pentandrum* entdeckte *Pseudocercospora daphniphylicola* sp. nov. werden beschrieben, illustriert und hinsichtlich vergleichbarer Arten diskutiert.

Key words: *Cercospora herniariae*, *Pseudocercospora daphniphylicola*, taxonomic novelties.

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Cercosporoid fungi (*Mycosphaerellaceae*, *Capnodiales*, *Ascomycota*) represent one of the largest groups of mostly plant pathogenic, leaf-spotting hyphomycetes, including numerous species causing economically relevant diseases of cultivated plants (Chupp 1954, Crous & Braun 2003). The whole group comprised more than 6.000 names. Nevertheless the registration of the diversity of these fungi is far from being complete. Even the discovery of new species in Central Europe cannot be excluded as exemplified in this paper. Two new cercosporoid species recently found in Brandenburg (Germany) and in Jiangxi (China), respectively, are described, illustrated and discussed.

Cercospora herniariae U. Braun & V. Kumm., sp. nov.
Mycobank, MB815052.

Figs 1–2

Diagnosis: Differs from all other *Cercospora* species on caryophyllaceous hosts in having short, 0–3(–4)-septate conidiophores, (5–)10–60 × 2.5–6 µm, minute conidiogenous loci, 1–2(–2.5) µm diam., and narrowly obclavate-cylindrical to acicular-filiform conidia, 1.5–3(–3.5) µm wide, with narrow hila, (1–)1.5–2.5 µm diam.

Leaf spots amphigenous, circular, subcircular to slightly irregular, 1–2 mm diam., finally sometimes entire leaves discoloured, yellowish, ochraceous to brownish, margin indefinite or with narrow darker border, occasionally with narrow to moderately wide darker halo. Caespituli amphigenous, punctiform, scattered to dense, dark brown to blackish. Mycelium internal. Stromata almost lacking to well-developed, 10–60 µm diam., substomatal to intraepidermal, medium brown, composed of swollen hyphal cells, circular to somewhat angular-irregular in outline, 2–6 µm diam., brown, wall slightly thickened. Conidiophores in small, divergent to moderately large and dense fascicles, arising from stromata, through stomata or erumpent, erect, straight to strongly geniculate-sinuuous, subcylindrical to usually somewhat attenuated towards the tip, unbranched or only rarely branched, (5–)10–60 × 2.5–6 µm, 0–3(–4)-septate, at first subhyaline, later pale to medium brown or olivaceous-brown throughout or usually paler towards the tip, wall thin to slightly thickened (< 1 µm wide), smooth; conidiogenous cells integrated, terminal or conidiophores reduced to conidiogenous cells, 10–30 µm long, sympodially proliferating, with a single terminal to usually several distinct conidiogenous loci, 1–2(–2.5) µm diam., thickened and darkened. Conidia solitary, shorter conidia narrowly obclavate-cylindrical, longer conidia acicular to filiform, straight to curved, (15–)20–80 × 1.5–3(–3.5) µm, 1–7-septate, colourless, thin-walled, smooth, apex acute or subacute, occasionally subobtuse, base truncate or slightly obconically truncate, (1–)1.5–2.5 µm wide, hila thickened and darkened.

Holotype: Germany, Brandenburg, Landkreis Dahme-Spreewald, Märkisch Buchholz, Köthen, 52°04'22" N, 13°47'22" E, c. 55 m alt., on *Herniaria glabra* L., Caryophyllaceae, 26 June 2015, V. Kummer (HAL 2942 F).



Fig. 1: *Cercospora herniariae*. Type material, symptoms (leaf spots). Bar – 1 cm.

Notes: Within the genus *Cercospora* Fresen., there are several plurivorous, morphologically rather uniform species which can be referred to as *C. apii* s. lat. complex (Crous & Braun 2003, Groenewald et al. 2013). Species belonging to this complex are characterised by having rather long, more or less brown conidiophores with distinct, large conidiogenous loci, about 2–4 μm diam., and consistently acicular long conidia, about 2–4.5 μm wide. Collections on new hosts belonging to this morphological type should only be described when the identity as new species has been proven on the base of cultures and molecular sequence analyses. Otherwise they should simply be referred to as *C. apii* s. lat. (Crous & Braun 2003, Braun et al. 2013). The present species on *Herniaria* is morphologically quite distinct from the *C. apii* complex in having short conidiophores with minute conidiogenous loci and narrow conidia, ranging from narrowly obclavate-cylindrical to acicular-filiform, with narrow hila. There are only few *Cercospora* spp. on caryophyllaceous genera. *Cercospora dianthi* A.S. Mull. & Chupp (nom. inval., Art. 39.1), recorded on *Dianthus* spp. and *Pseudostellaria davidii* (Franch) Pax from

Brazil, Cuba, El Salvador, and Japan (Chupp 1954, Crous & Braun 2003), is morphologically quite distinct from *C. herniariae* and belongs to the *C. apii* complex. *C. lychnidis* H.C. Greene (Greene 1959), only known from the type material on *Silene coronaria* (Desr.) Clairv. ex Rchb. collected in Wisconsin, USA (type material deposited in WIS examined), forms long, brown, pluriseptate conidiophores, about $100\text{--}350 \times 4\text{--}5 \mu\text{m}$, with large conidiogenous loci, $2\text{--}3 \mu\text{m}$ wide, and acicular conidia, $70\text{--}260 \times 2.5\text{--}4 \mu\text{m}$, hila $2\text{--}3 \mu\text{m}$ wide. This species belongs to the *C. apii* complex as well. *C. drymariae* Katsuki on *Drymaria cordata* (L.) Willd. ex Schult. Known from India, Japan, and Venezuela (Katsuki 1965, Crous & Braun 2003) differs from *C. herniariae* in having much broader conidiophores, $4\text{--}8 \mu\text{m}$ wide, larger conidiogenous loci, $2\text{--}3 \mu\text{m}$ diam., and broader conidia, $3\text{--}4 \mu\text{m}$ wide. Type material has not been examined, but two collections on *Drymaria cordata* from India and Venezuela (K(M)IMI 135133, 361314b).

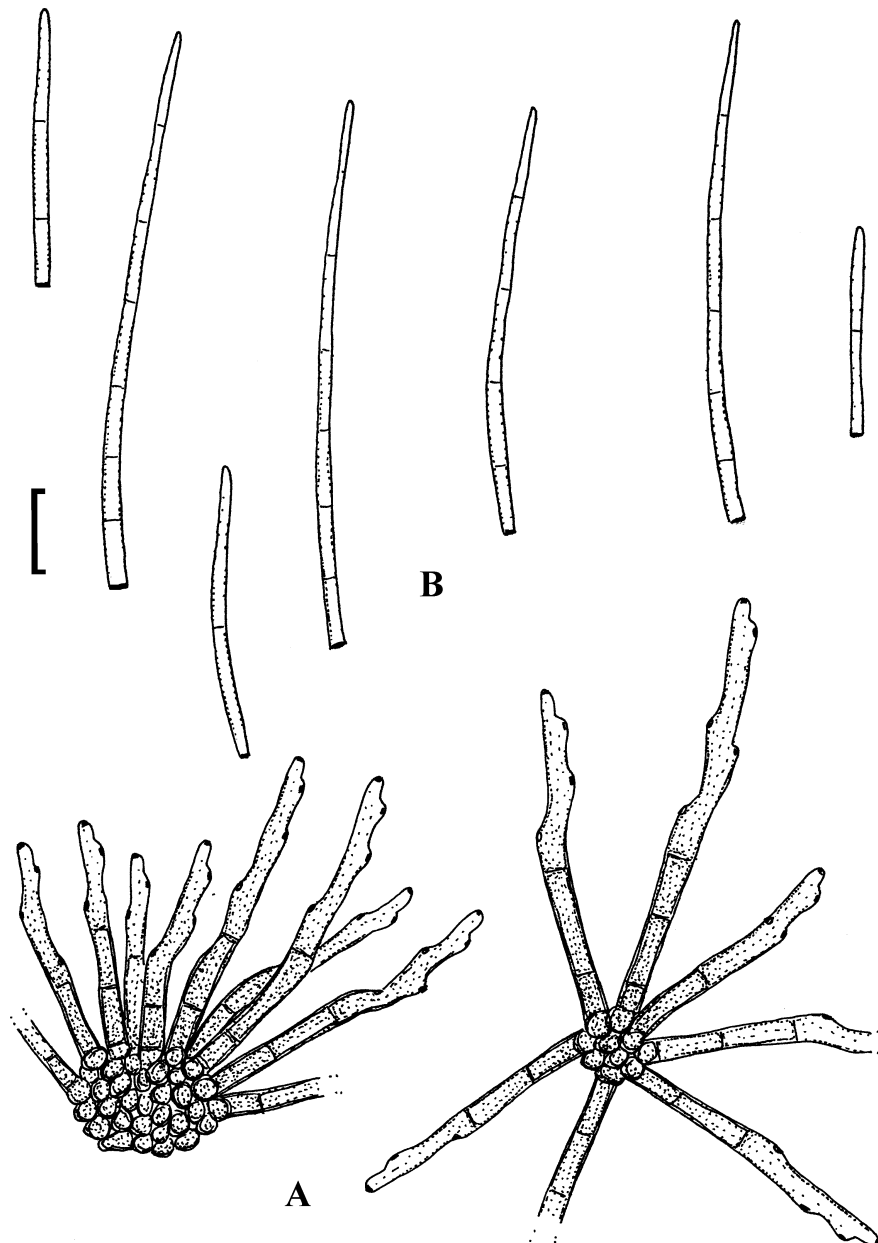


Fig. 2: *Cercospora herniariae* (based on type material), A – Conidiophore fascicles, B – Conidia. Bar – $10 \mu\text{m}$. U. Braun del.

Pseudocercospora daphniphylicola U. Braun & Hönig, **sp. nov.**
MycoBank, MB815053.

Fig. 3

Diagnosis: Differs from *Pseudocercospora daphniphylli* in having internal mycelium, conidiophores consistently formed in fascicles, and shorter, broader, pigmented conidia, 15–60 × 3–4.5 μm, 1–7-septate.

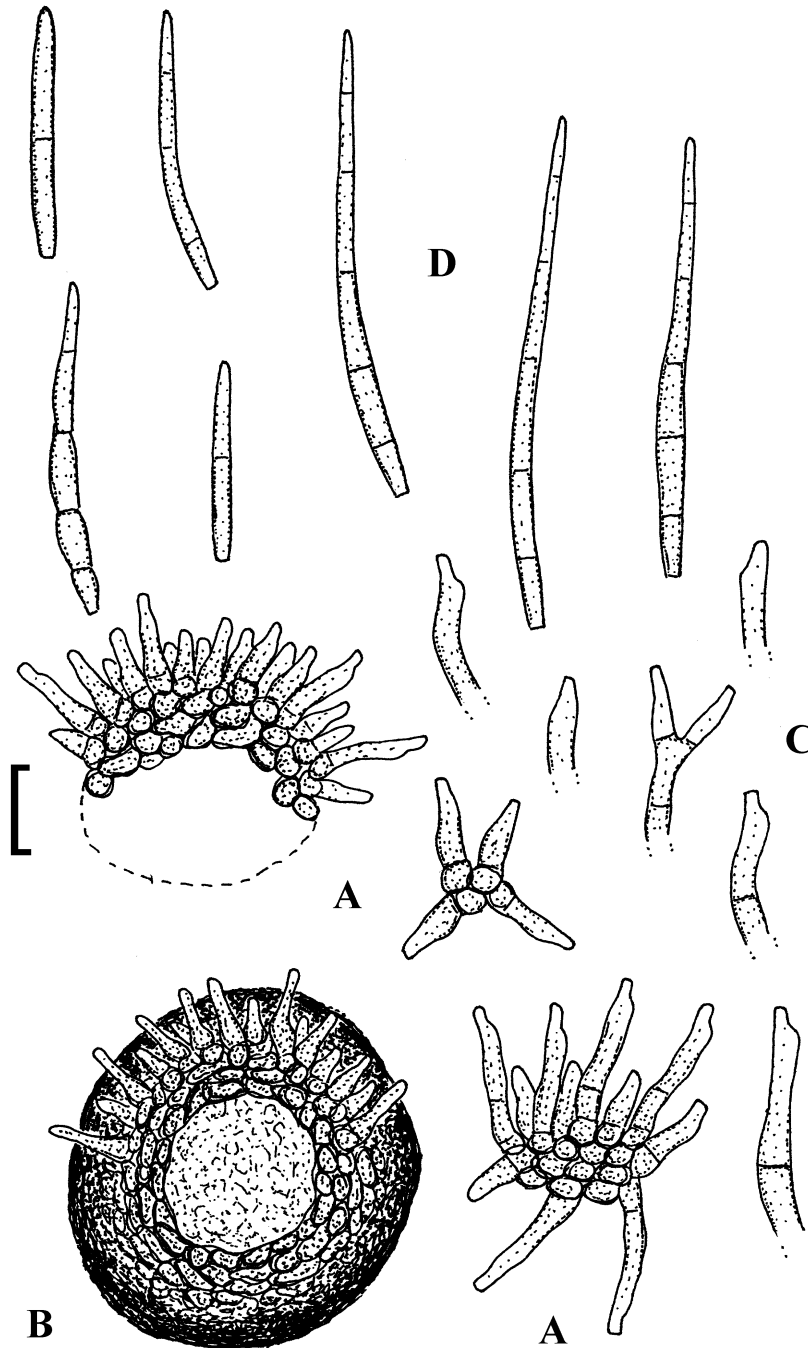


Fig. 3: *Pseudocercospora daphniphylicola* (based on type material), A – Conidiophore fascicles, B – Immature pycnidium-like fruiting body with conidiophores, C – Conidiophore, D – Conidia. Bar – 10 μm. U. Braun del.

Leaf spots amphigenous, conspicuous, variable, angular-irregular, 3–10 mm diam., dark brown or paler brown with dark brown border. Caespituli amphigenous, distinctly punctiform on the upper leaf surface, scattered, blackish, less distinct or indistinct below. Mycelium internal. Stromata lacking to moderately large below, 10–30 μm diam., larger on the upper leaf surface, to 70 μm diam., shape variable, subglobose to irregular, substomatal, intraepidermal to

immersed, olivaceous-brown, cells 2–5 µm diam., circular to somewhat angular-irregular in outline. Conidiophores in small to rather large, divergent to moderately dense fascicles, arising from stromata, through stomata or erumpent, occasionally arising from immature, pycnidium-like fruiting bodies, erect, straight to somewhat curved-sinuuous, subcylindrical, conical to moderately geniculate-sinuuous, unbranched or occasionally once branched, 5–30 × 2.5–4 µm, 0–1(–3)-septate, subhyaline, pale olivaceous, olivaceous to pale olivaceous-brown in mass, thin-walled, smooth; conidiogenous cells integrated, terminal or conidiophores reduced to conidiogenous cells, 5–20 µm long, conidiogenous loci inconspicuous or visible as truncate tip, unthickened and not darkened. Conidia solitary, obclavate-cylindrical, straight to somewhat curved, 15–60 × 3–4.5 µm, 1–7-septate, occasionally constricted at the septa, subhyaline to pale olivaceous, thin-walled, smooth, apex obtuse to subacute, base short obconically truncate, 1.5–2 µm wide, hila unthickened, not darkened, occasionally with short to moderately long, narrowly subcylindrical germ tubes arising laterally near the base.

Holotype: China, Jiangxi Province, Xingangshan, subtropical forest site of the BEF-China Project, Site B, 1123, 29.1250° N, 117.9085° E, on *Daphniphyllum pentandrum* Hayata (= *D. oldhamii* (Hemsl.) K. Rosenthal), *Daphniphyllaceae*, April 2014, L. Hönig (HAL 2688 F).

Notes: *Pseudocercospora daphniphylli* (Katsuki & Tak. Kobay.) Deighton (= *Cercospora daphniphylli* Katsuki & Tak. Kobay. (Katsuki & Kobayashi 1982, Deighton 1987) on *Daphniphyllum macropodum* Miq. collected in Japan differs from *P. daphniphyllicola* in forming superficial hyphae with solitary conidiophores. Furthermore, the conidia are longer and narrower, 30–125 × 2–3.3 µm, hyaline, and up to 12-septate.

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