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Taxonomic revision of the genus *Cladosporium* s. lat.
7. Descriptions of new species, a new combination and further new data

Uwe Braun & Konstanze Schubert

Abstract: Braun, U. & Schubert, K. (2007): Taxonomic revision of the genus *Cladosporium* s. lat. 7. Descriptions of new species, a new combination and further new data. Schlechtendalia **16**: 61–76.

The new species *Cladosporium asperistipitatum*, *C. caraganae*, *C. leguminicola*, *C. melospermae*, *C. rhododendri* and *C. subobtectum* are described and illustrated. *Cladosporium salicis* is assigned to the genus *Fusicladium*, *C. fusisporum* is reduced to synonymy with *Passalora chionanthi*, and a collection on the Mediterranean *Euphorbia wulfenii*, originally deposited as *Cladosporium* sp., is recorded as *Fusicladium* cf. *fasciculatum* from Italy.

Zusammenfassung: Braun, U. & Schubert, K. (2007): Taxonomische Revision der Gattung *Cladosporium* s. lat. 7. Beschreibungen neuer Arten, eine Neukombination und weitere neue Informationen. Schlechtendalia **16**: 61–76.

Die neuen Arten *Cladosporium asperistipitatum*, *C. caraganae*, *C. leguminicola*, *C. melospermae*, *C. rhododendri* und *C. subobtectum* werden beschrieben und abgebildet. *Cladosporium salicis* wird in die Gattung *Fusicladium* gestellt, *C. fusisporum* ist ein Synonym von *Passalora chionanthi* und eine Kollektion auf der mediterranen Art *Euphorbia wulfenii*, ursprünglich abgelegt als *Cladosporium* sp., wird aus Italien als *Fusicladium* cf. *fasciculatum* angegeben.

Key words: Anamorphic fungi, cladosporioid hyphomycetes, taxonomy, new species, new combinations.

Introduction

Based on reassessments of morphological characters, including the structure of the conidiogenous loci and conidial hila, combined with molecular sequence analyses, the heterogeneous hyphomycete genus *Cladosporium* Link has recently been revised and confined to *Davidiella* Crous & U. Braun anamorphs characterised by having coronate scars, i.e., composed of a convex central dome surrounded by a raised periclinal rime (David 1997, Braun et al. 2003). Owing to the new circumscription of *Cladosporium*, it is now much easier to check the generic affinity of the around 770 names assigned to this genus (Dugan et al. 2004). In the course of monographic studies, results of examinations of numerous type and non-type collections of *Cladosporium* species, including reassessments, redescriptions, introductions of new taxa and commentaries on excluded species, have already been published in a series of papers (Crous et al. 2006; Schubert 2005a; Schubert & Braun 2004, 2005a,b; 2007; Schubert et al. 2006). Furthermore, Heuchert et al. (2005) revised fungicolous *Cladosporium* species, and Schubert (2005b) monographed biotrophic foliicolous taxa of this genus. Additional new species, a new combination, a reassessment and a new record are presented in this contribution.

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Materials and Methods

Herbarium specimens have been examined by standard light microscopy (Olympus BX50, Hamburg, Germany). Measurements have been carried out in distilled water using oil immersion. Stains were not used since all structures of *Cladosporium* species are usually distinctly pigmented and thus clearly visible. Drawings were carried out free hand. The collections examined are deposited at HAL, MA, NY, NYS, SIENA (abbreviations according to HOLMGREN et al. 1990).

Descriptions of new species, a new combination, a new synonym and a new record

1. ***Cladosporium asperistipitatum*** U. Braun & K. Schub. (MB 510452), **sp. nov.**

Fig. 1

Differt a *C. gentianae* lesionibus distinctis et conidiis longioribus, ad 30 µm, saepe 0–1-septatis, sine luminibus distinctis.

Holotype: on living leaves of *Aesculus californica* (Hippocastanaceae), USA, California, Contra Costa Co., Orinda, 30 Oct. 1932, L. Bonar (F 1167622).

Leaf spots large, usually marginal, 5–30 mm wide, brown, with somewhat raised margin, occasionally with diffuse purplish to brown halo. *Colonies* amphigenous, faintly punctiform to effuse, dark brown to blackish. *Mycelium* internal. *Stromata* lacking or small, 10–30 µm diam., substomatal to intraepidermal, brown, composed of swollen hyphal cells, 3–13 µm diam., walls thickened. *Conidiophores* solitary or in small fascicles, arising from internal hyphae or stromatic hyphal cells, erumpent or emerging through stomata, erect, straight to slightly geniculate-sinuous, unbranched or occasionally branched, 10–60 × 2.5–9 µm, continuous to septate, pale olivaceous to medium olivaceous-brown, wall thickened, up to 2 µm wide, above all in the lower half, and distinctly two-layered; conidiogenous cells integrated, terminal, 10–30 µm long; conidiogenous loci (1–)1.5–2(–2.5) µm diam., somewhat thickened, darkened and protuberant. *Conidia* catenate, in simple or branched chains, subglobose, ellipsoid-ovoid, fusiform, limoniform to subcylindrical, 4–30 × 3–7 µm, 0–2(–4)-septate, pale olivaceous to olivaceous-brown, walls thin to slightly thickened, < 1 µm wide, faintly to distinctly verruculose, ends obtuse, rounded to attenuated, apex with 1–3 hila, base with a single hilum, 1–2 µm diam., distinctly coronate, slightly protuberant; microcyclic conidiogenesis not observed.

Cladosporium gentianae Lobik is morphologically close to *C. asperistipitatum*, but differs in having quite distinct lesions and somewhat shorter, mostly 0–1-septate conidia, frequently with distinct lumina, which render the conidia seemingly very thick-walled. *C. praecox* (Niessl) U. Braun is an additional superficially similar species on *Tragopogon orientale*, but easily distinguishable by its thin-walled, one-layered, smooth conidiophores (Schubert 2005b).

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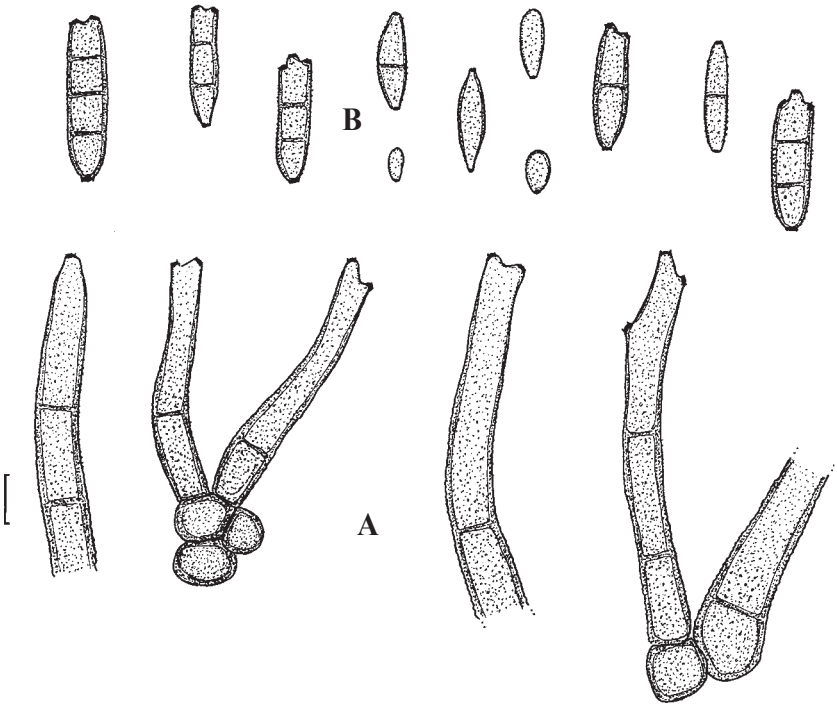


Fig. 1: *Cladosporium asperistipitatum* (from the holotype). A – fascicle of conidiophores, B – conidia. Bar = 10 µm. (U. Braun del.).

2. ***Cladosporium caraganae*** K. Schub., U. Braun & H.D. Shin (MB 510496), **sp. nov.** **Fig. 2**

Differt a *C. cladosporioide* hyphis laxe vel dense aggregatis, conidiis leniter latioribus, (2.5–)3.5–6.5(–7.5) µm, 0–4(–5)-septatis.

Holotype: on dead but not fallen leaves of *Caragana sinica* (Fabaceae), South Korea, Jinju, Gazwa Arboretum, Forestry Research Institute, 15 Oct. 2003, H.D. Shin (HAL 2008 F).

Leaf spots amphigenous, on the upper leaf surface subcircular to irregular, about 2 mm diam., grey to blackish, below forming blackish patches, not distinctly limited, somewhat dendritic towards margins. *Colonies* hypophyllous, effuse, dense, grey to dark olivaceous-brown, velvety. *Mycelium* internal, subcuticular to intraepidermal, later also external; hyphae unbranched or branched, 2–7 µm wide, septate, often slightly to distinctly constricted at septa, sometimes with swellings, up to 9(–13) µm wide, subhyaline to pale olivaceous or olivaceous-brown, smooth, walls mostly thickened, cells often with small oil droplets or appearing granulated, forming loose to dense hyphal aggregations. *Stromata* lacking. *Conidiophores* solitary, arising from superficial hyphae, laterally from creeping hyphae or terminally from ascending hyphae,

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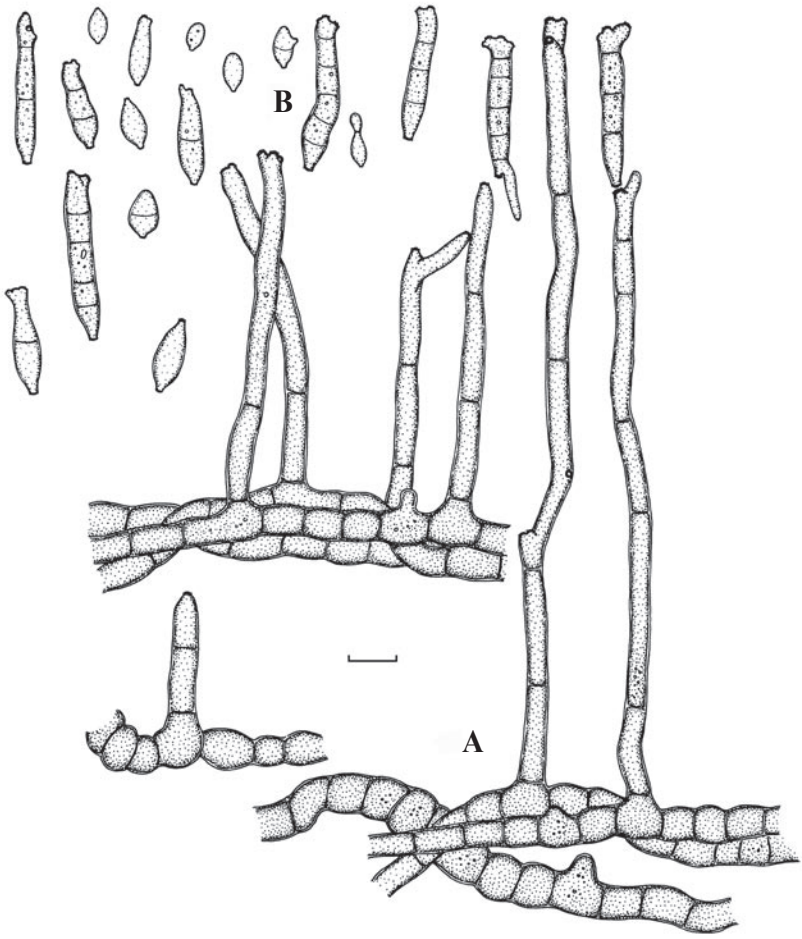


Fig. 2: *Cladosporium caraganae* (from the holotype). A – conidiophores arising from hyphae, B – conidia. Bar = 10 µm. (K. Schubert del.).

erect, straight to slightly flexuous, non-nodulose, sometimes distinctly geni-culate towards the apex, unbranched, occasionally apically branched, 30–200(–250) × 3–6(–7) µm, septate, occasionally slightly constricted at septa, pale olivaceous or olivaceous-brown, paler towards the apex, sometimes almost hyaline, smooth, sometimes slightly rough-walled, walls thickened, up to 1 µm wide, thinner-walled towards the apex. *Conidiogenous cells* integrated, terminal but also intercalar, cylindrical-oblong, 10–55 µm long, sometimes geniculate, proliferation sympodial, with a single or usually several denticulate conidiogenous loci, often crowded, protuberant, 1.5–2.5(–3) µm

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wide, thickened and somewhat darkened-refractive. *Conidia* catenate, in unbranched or branched chains, straight, ellipsoid, fusiform or cylindrical, 5–35(–55) × (2.5–)3.5–6.5(–7.5) µm, 0–4(–5)-septate, occasionally slightly constricted at septa, subhyaline, pale olivaceous or olivaceous-brown, smooth, walls unthickened or somewhat thickened, slightly attenuated towards the base, cells with oil droplets appearing granular, hila 1–2 µm wide, thickened and darkened-refractive; microcyclic conidiogenesis occurring.

This leaf-spotting fungus is morphologically similar to *C. cladosporioides* (Fresen.) G.A. de Vries, *C. psoraleae* M.B. Ellis and *C. vignae* M.W. Gardner but can easily be distinguished from the latter species by having 0–4-septate conidia. Furthermore, *C. cladosporioides* usually does not form loose to dense hyphal aggregations and possesses somewhat narrower conidia, mostly 3–5 µm wide.

3. *Cladosporium fusisporum* Berk. & M.A. Curtis, in herb.

= ***Passalora chionanthi*** (Ellis & Everh.) U. Braun.

Material examined: on stems of *Chionanthus* sp. (Oleaceae), USA, Alabama, ex herb. Curtis (NYS), as *Cladosporium fusisporum* Berk. & M.A. Curtis.

The examination of material deposited as '*C. fusisporum*' at NYS clearly showed that this name is a synonym of *Passalora chionanthi*.

4. ***Cladosporium leguminicola*** U. Braun & K. Schub. (MB 510453), **sp. nov.**

Fig. 3

Differt a *C. cladosporioide* stromatibus bene evolutis, 10–60, interdum ad 150 µm diam., conidiophoris fasciculatis, brevioribus et latioribus, 10–70 × 3–7 µm, conidiis 0–3-septatis, verruculosis, ramoconidiis nullis.

Holotype: on pods of *Phaseolus vulgaris* (Fabaceae), Spain, Churriana (Málaga), C. Blívar et E. Rijoa, 18 June 1917, Gonz. Fragoso 2906 (MA 06450-52), as '*C. pisi*'.

On necrotic pods, lesions lacking. *Colonies* dark brown to blackish, effuse to dense, forming subcircular to irregular speckles. *Mycelium* immersed. *Stromata* small to well-developed, 10–60 µm diam., later enlarged or confluent, up to 150 µm diam., yellowish brown, pale to medium brown or medium to dark olivaceous-brown, cells circular to somewhat angular-irregular in outline, 3–7 µm diam. *Conidiophores* in small to large, loose to dense fascicles, arising from stromata, erect, straight to somewhat curved or slightly sinuous, but usually non-geniculate, unbranched, 10–70 × 3–7 µm, 0–3-septate, wall thin to slightly thickened, ≤ 1 µm, pale olivaceous to medium olivaceous-brown, smooth or almost so to verruculose; conidiogenous cells integrated, terminal or conidiophores reduced to conidiogenous cells, 10–30 µm long, coronate conidiogenous loci 1.5–2.5 µm wide and 1 µm high. *Conidia* solitary or in unbranched chains, ellipsoid-ovoid, subcylindrical, ramoconidia not seen, 5–26 × 3–5.5 µm, 0–3-septate, subhyaline to pale olivaceous or olivaceous-brown, thin-walled, verruculose, ends obtuse, rounded to somewhat attenuated, hila distinct, slightly protuberant, 1.5–2 µm diam.; microcyclic conidiogenesis lacking.

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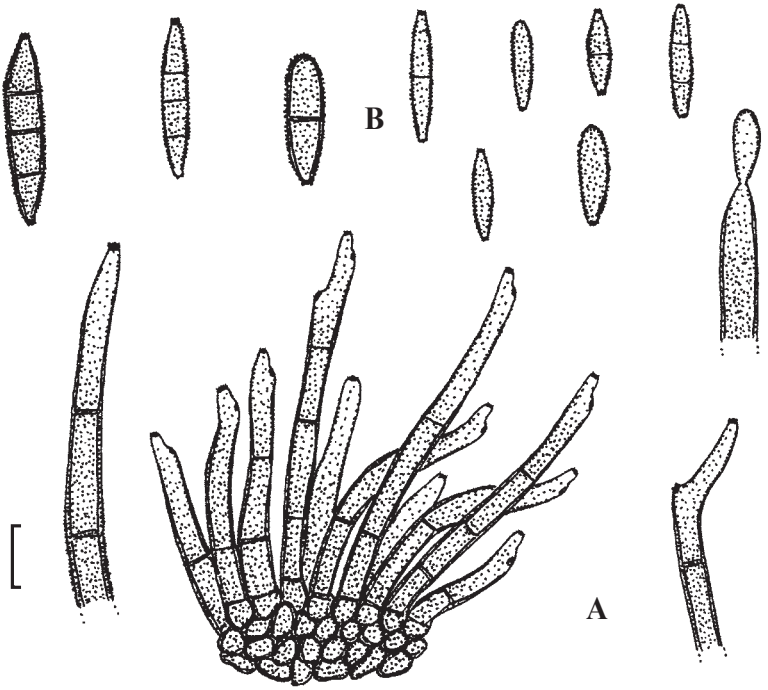


Fig. 3: *Cladosporium leguminicola* (from the holotype). A – fascicle of conidiophores, B – conidia. Bar = 10 µm. (U. Braun del.).

The type collection of this species was deposited at MA as *Cladosporium pisi* Cugini & Macch. The latter species was described to have small subhyaline conidia, 4.5–5.5 × 4–4.5 (terminal) and 7–9 × 2.5–4.5 µm (lateral), respectively (SACCARDO 1892: 601). These measurements rather agree with those of *C. cladosporioides*, which is common on pea. FRAGOSO (1927) recorded the collection on *Phaseolus vulgaris* as *C. pisi*, but simply copied the original description of the latter species, which is not in full agreement with the fungus on bean. *C. cladosporioides* is quite distinct from *C. leguminicola* by lacking stromata, usually much longer, filiform, non-fasciculate conidiophores with terminal, non-geniculate conidiogenous cells and, above all, usually smooth-walled, 0–1-septate conidia. The true *C. pisicola* W.C. Snyder, often confused with the common *C. cladosporioides*, is a leaf-spotting fungus, characterised by having integrated, often intercalary, distinctly geniculate conidiogenous cells and 0–3-septate conidia. It is distinct from *C. leguminicola* by its geniculate conidiophores with intercalary conidiogenous cells, smooth conidia and lacking stromata.

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5. ***Cladosporium melospermae*** K. Schub. & U. Braun (MB 510497), **sp. nov.**

Fig. 4

Differt a *C. variabili* conidiis brevioribus, 9–35 µm longis, 0–1(–2)-septatis, sine lesionibus distinctis.

Holotype: on leaves of *Melosperma andicola* (Scrophulariaceae), Argentina, Mendoza, San Rafael, entre Calmu-co y Barrancas, 15 Feb. 1942, Covas, No. 462, ex herb. A. Ruiz Leal, Nr. 10797, Flora de la Prov. Mendoza (LPS 14053).

On leaves and inflorescences (sepals), without conspicuous leaf spots, but sometimes with pale brownish discolorations, somewhat faded. *Colonies* amphigenous, punctiform, scattered to effuse, brownish, sometimes velvety. *Mycelium* internal, subcuticular to intraepidermal; hyphae branched, (3–)5–10 µm wide, septate, not constricted at the septa, pale brown to pale medium brown or somewhat olivaceous-brown, sometimes subhyaline, smooth or almost so, walls more or less thickened, forming aggregations. Stromata small, substomatal to intraepidermal, 15–60 µm diam., few layers deep, composed of swollen hyphal cells or hyphal aggregations, cells 8–15 µm diam., medium brown, smooth, thick-walled. *Conidiophores* solitary or usually in small loose fascicles, arising from hyphal aggregations or stromata, emerging through stomata or erumpent through the cuticle, erect, straight to flexuous, cylindrical, geniculate-sinuous towards the apex and often coralloid at the apex, non-nodulose, unbranched, occasionally branched, 20–145 × 4.5–8 µm, 0–5-septate, not constricted at the septa, medium brown, somewhat paler towards the apex, smooth to verruculose, walls thickened, up to 1(–1.5) µm thick, often distinctly two-layered, base often somewhat swollen. *Conidiogenous cells* integrated, terminal or intercalary, cylindrical, often geniculate-sinuous, coralloid, proliferation distinctly sympodial, with a single or few conidiogenous loci situated on small shoulders or small lateral projections, protuberant, coronate but dome and rim often flat and not distinctly differentiated, 2–3 µm wide, thickened and somewhat darkened-refractive. *Conidia* solitary or in short unbranched, rarely branched chains, straight, obovoid, broadly ellipsoid to subcylindrical or somewhat irregular, 9–35 × (8.5–)10–15 µm, 0–1(–2)-septate, septum somewhat in the upper or lower half, sometimes slightly constricted, medium brown, coarsely verrucose, ornamentation up to 1 µm high, thick-walled, apiculate, base sometimes attenuated, stalk-like, cells sometimes with large oil drops, hila more or less protuberant, truncate, dome and rim flat, dome often not higher than the surrounding rim, 2–3 µm wide, thickened, somewhat darkened-refractive; microcyclic conidiogenesis occurring.

Cladosporium melospermae, occurring on living leaves and inflorescences of the endemic host species *Melosperma andicola*, is morphologically close to *C. variabile* (Cooke) G.A. de Vries but the later species, which causes distinct leaf spots on spinach, is easily distinguishable by having longer, (6.5–)10–45(–55) µm, 0–4(–5)-septate conidia. *Cladosporium mimulicola* U. Braun known from North America on *Mimulus* sp., is quite distinct by having shorter and narrower conidiophores arising from superficial hyphae, smooth and narrower conidia, (2.5–)3–5(–6.5) µm, and narrower conidiogenous loci and hila (SCHUBERT 2005b). Type material of *C. digitalicola* Z.Y. Zhang, T. Zhang & W.Q. Pu, a species also recorded from a member of the

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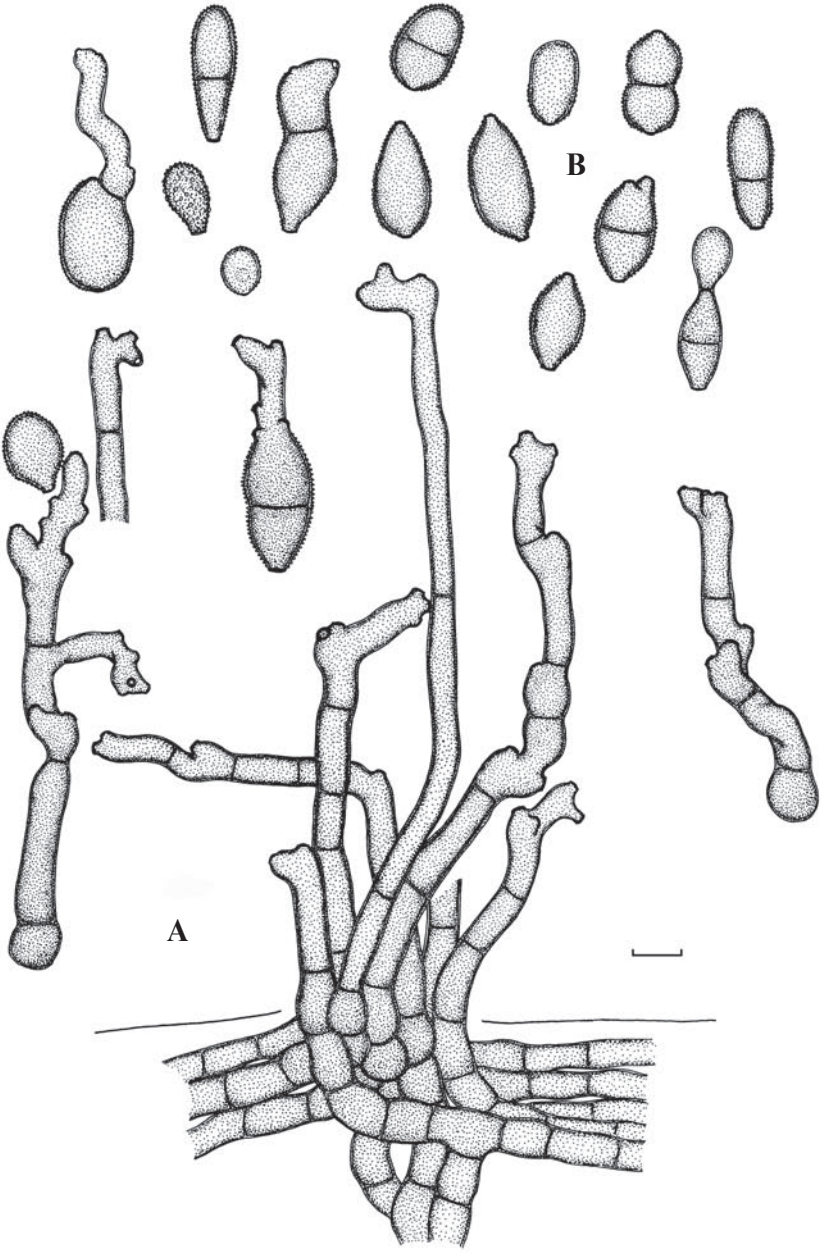


Fig. 4: *Cladosporium melospermae* (from the holotype). A – conidiophores, B – conidia. Bar = 10 µm. (K. Schubert del.).

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Scrophulariaceae, could not be examined. Therefore, its status remains still uncertain, but conidia are described to be shorter, 0–4-septate, and conidiophores longer and narrower, 45–502 × 4.0–7.9 µm (ZHANG, WEI & ZHANG 1998).

6. ***Cladosporium rhododendri*** K. Schub. (MB 510499), **sp. nov.** **Fig. 5**

Differt a *C. jacarandicola* conidiis saepe 0–1-septatis.

Holotype: on *Rhododendron* sp. (Ericaceae), Germany, Sachsen-Anhalt, Halle (Saale), Pyrastraße, 11 Jun. 2004, D. Seidel, mixed infection with *C. herbarum* (HAL 1834 F).

On living leaves, leaf spots amphigenous, irregular in shape and variable in size, often arising at leaf margins and extending towards the midrib, dark brown to somewhat greyish brown, on the upper leaf surface often covered by the whitish grey, membranous detached cuticle. *Colonies* hypophyllous, scattered, low, in dense tufts, pale olivaceous, velvety. *Mycelium* internal, subcuticular to intraepidermal. *Stromata* absent to well-developed, 20–50 µm diam., composed of subglobose to somewhat oblong, densely aggregated cells, 5–9 µm diam., pale to medium olivaceous-brown, smooth, thick-walled. *Conidiophores* in small to large, loose to dense fascicles, arising from swollen hyphal cells or stromata, usually emerging through stomata, occasionally erumpent through the cuticle, erect, straight to slightly flexuous, unbranched, occasionally branched at the base, often somewhat geniculate-sinuous, without intercalary swellings, 15–80 × 3–6 µm, mostly up to 50 µm long, 0–5-septate, not constricted at the septa, pale olivaceous to medium olivaceous-brown throughout or sometimes slightly paler towards the apex, smooth, walls slightly thickened, somewhat swollen at the base and slightly attenuated towards the apex. *Conidiogenous cells* integrated, terminal and intercalary, cylindrical, 8–30 µm long, proliferation sympodial, with several conidiogenous loci, often crowded and situated on small shoulders, protuberant, 1–1.5(–2) µm diam., well differentiated in a central convex dome and a periclinal rim, thickened, slightly darkened-refractive. *Conidia* catenate, usually in branched chains, straight to slightly curved, subglobose, obovoid, limoniform, ellipsoid, fusiform, subcylindrical, 1.5–18 × (1–)2–5 µm, 0–1(–2)-septate, septum more or less median and not constricted, very pale olivaceous to pale olivaceous-brown, smooth or almost so to minutely verruculose or irregularly rough-walled, walls only slightly thickened, apex rounded or somewhat attenuated, hila protuberant, slightly convex, 0.5–1.5(–2) µm diam., dome and raised rim conspicuous, thickened, slightly darkened-refractive; occasionally with microcyclic conidiogenesis.

C. rhododendri pertains to a group of leaf-spotting *Cladosporium* species characterised by relatively short, fasciculate conidiophores usually emerging through stomata, as e.g., *C. praecox* [conidia larger, above all wider, (6.5–)12–26(–31) × 4–8 µm, faintly to conspicuously verruculose-echinulate], *C. orchidearum* Cooke & Massee [conidia wider, 4–7 µm, 0–3-septate, usually verruculose, and loci wider, 1.5–2.5 µm], *C. agoseridis* U. Braun & Rogerson [conidiophores wider, (3–)4–10(–13) µm, conidia larger and, above all, wider, (10–)12–40(–50) × (5–)6–13(–15) µm, densely verrucose] and *C. lupiniphilum* U. Braun [conidiophores wider, 3–8 µm, conidia larger and, above all, wider, 6–28 × 4–8 µm] (BRAUN 1998, 2000; BRAUN & ROGERSON 1995; ELLIS

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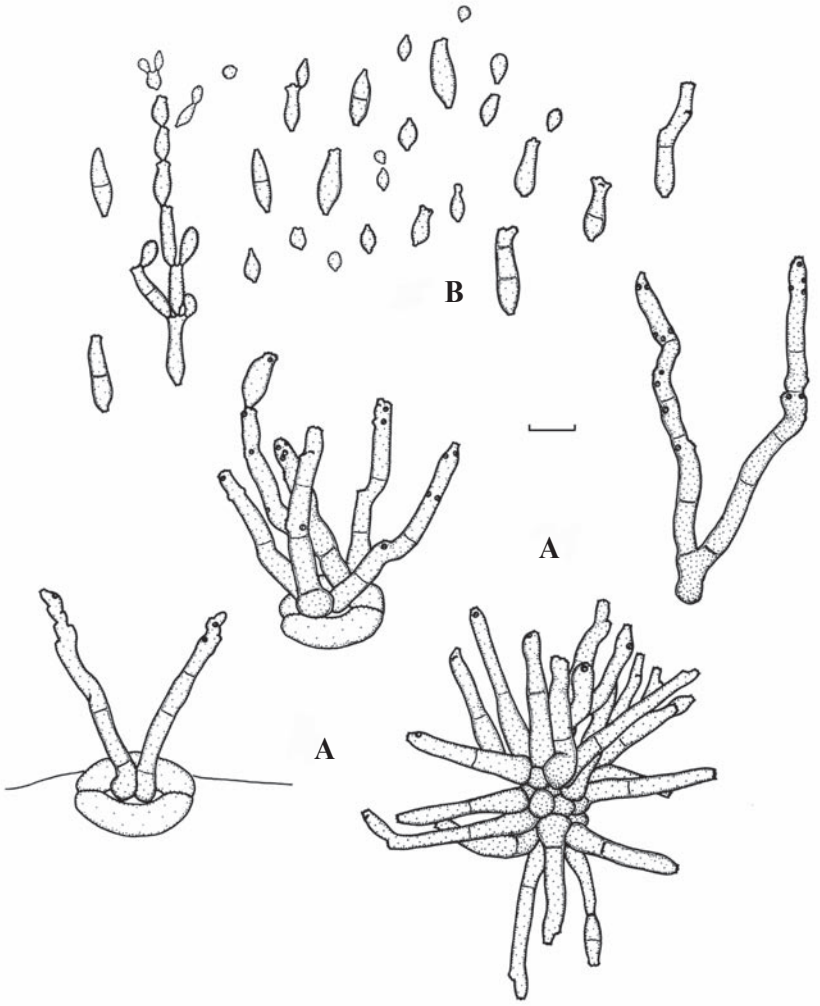


Fig. 5: *Cladosporium rhododendri* (from the holotype). A – conidiophores, B – conidia. Bar = 10 µm. (K. Schubert del.).

1976; SCHUBERT & BRAUN 2004). It is morphologically also close to *C. jacarandicola* K. Schub., U. Braun & C. F. Hill, described from New Zealand on living leaves of *Jacaranda mimosifolia*, which is, however, distinguished by having 0–3-septate conidia (SCHUBERT & BRAUN 2004).

The hyphomycete found on a herbarium sample deposited under the name '*Cladosporium rhododendri*' (in herb., on *Rhododendron* sp., Switzerland, Bern,

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Berner Oberland, vom Faulhorn, 7/58, B 70-6700, without any author and collector) does not belong in *Cladosporium* s. str. and must be excluded, although the generic affinity of this fungus is not yet clear.

7. ***Cladosporium subobtectum*** U. Braun & K. Schub. (MB 510454), **sp. nov. Fig. 6**

Differt a *C. obtecto* conidiophoris longioribus, ad 100 µm, locis et hilis angustioribus, 1–2 µm diam., et conidiis angustioribus, 2.5–6(–8) µm latis, persaepe verruculosis.

Holotype: on *Euonymus* sp. cult. (Celastraceae), USA, California, Santa Clara Co., Stanford University, 26 Oct. 1901, C.F. Baker, Pacific Slope Fungi 31 (NY).

Leaf blotches large, yellowish to whitish, straw-coloured, later darkened, margin indefinite or with a narrow dark border. *Colonies* amphigenous, subeffuse, dark brownish or olivaceous-brown. *Mycelium* internal and external, superficial hyphae branched, 2–8 µm wide, septate, thin-walled (< 1 µm), subhyaline to pale olivaceous-brown, often with swellings and constrictions. *Stromata* lacking. *Conidiophores* solitary, arising from superficial hyphae, lateral, occasionally terminal, erect, straight, subcylindrical-filiform to somewhat geniculate-sinuous, unbranched, often narrowed and paler towards the apex, 20–100 × 3–6 µm, septate, thin-walled (≤ 1 µm), pale olivaceous to medium olivaceous-brown or brown, almost smooth to distinctly verruculose; conidiogenous cells integrated, terminal as well as intercalary, 10–25 µm long, proliferation sympodial, occasionally percurrent, conidiogenous loci 1–2 µm diam., distinctly coronate. *Conidia* in simple or branched chains, ramoconidia rare, secundary ramoconidia abundant, conidia subglobose, ellipsoid-ovoid, fusiform, subcylindrical, 5–28 × 2.5–6(–8) µm 0–4-septate, pale olivaceous to medium olivaceous-brown, occasionally darker, thin-walled (≤ 1 µm), verruculose, ends rounded to attenuated, hila 1–2 µm diam., often denticle-like; microcyclic conidiogenesis not observed.

The new species *C. subobtectum* is a leaf-spotting hyphomycete, which is morphologically close to *C. obtectum* Rabenh. ex Cooke (SCHUBERT 2005b), a species causing lesions on *Artemisia maritima*. However, the latter species is distinguished from *C. subobtectum* by having much shorter conidiophores, larger conidiogenous loci and conidial hila and wider, often smooth conidia. The saprobic *C. astroideum* Ces. is another similar species, which differs from *C. subobtectum* in having much wider, (3–)4–11 µm, thick-walled (0.5–1.5 µm), smooth to verruculose conidia, often with distinct lumina that render them seemingly very thick-walled.

8. *Fusicladium* cf. *fasciculatum* Cooke & Ellis

Material examined: on *Euphorbia wulfenii* (Euphorbiaceae), Italy, Sienna, botanical garden, 3 April 1925, leg. ? (SIENA), as *Cladosporium* sp.

The *Fusicladium* collection on *Euphorbia wulfenii*, originally deposited as *Cladosporium* sp., is very sparse. The very long conidiophores, 80–100 µm, and the ovoid conidia, ca. 15 × 6 µm, agree well with the North and South American *F. fasciculatum* (DEIGHTON 1967, SCHUBERT et al. 2003). This is the first report of this species from Europe on the new Mediterranean host species *Euphorbia wulfenii*.

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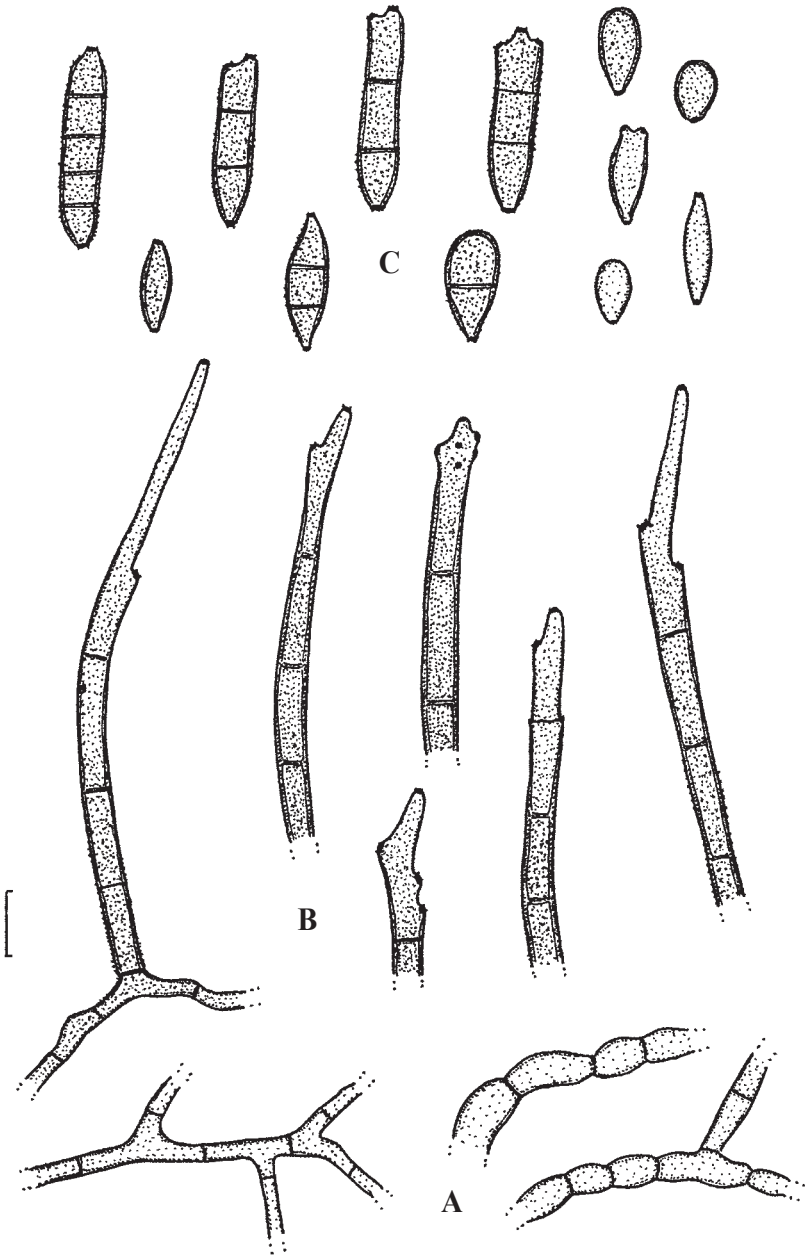


Fig. 6: *Cladosporium subobtectum* (from the holotype). A – hyphae, B – fascicle of conidiophores, C – conidia. Bar = 10 µm. (U. Braun del.).

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9. ***Fusicladium salicis*** (Moesz & Smarods) U. Braun & K. Schub. (MB 510455), **comb. nov.** **Fig. 7**

Bas.: *Cladosporium salicis* Moesz & Smarods, in Moesz, Magyar Bot. Lapok 31: 42, 1932.

Material examined: on *Salix cinerea* (Salicaceae), Latvia, Prov. Vidzeme, Distr. Riga, Adaži, 23 May 1937, J. Smarods, in O. Behr, Pl. rar. nov. 134 (HAL), topotype material of *C. salicis*.

Lesions on living branches, subcircular to somewhat irregular, brown, 2–10 mm wide, margin indefinite. Colonies punctiform-pustulate, subcircular to oblong in outline, 0.2–10 mm diam., sometimes larger when oblong or confluent, dark brown. Mycelium internal. Stromata well-developed, large, immersed to erumpent, up to about 500 µm diam., sometimes even larger when oblong or confluent, composed of swollen hyphal cells, subcircular to somewhat angular-irregular in outline, up to 18 µm diam., walls somewhat thickened. Conidiophores in large to very large, sporodochial fascicles, arising from stromata, erumpent, subcylindrical to flexuous, geniculate-sinuous, simple or branched, 20–150 × 2.5–10 µm, continuous to usually pluriseptate, often somewhat constricted at the septa, pale olivaceous-brown to brown, medium to dark olivaceous-brown in mass, wall thin to somewhat thickened; conidiogenous cells integrated, terminal, occasionally intercalary, determinate or sympodial, 10–30 µm long, with a single or two conidiogenous loci, truncate to slightly convex, 3–5 µm wide, unthickened, not darkened. Conidia in simple or branched chains, ellipsoid-ovoid, subcylindrical, doliiform, (12–)15–45(–50) × (5–)6–8(–10) µm, 0–3-septate, usually not constricted at the septa, occasionally with slight constrictions, pale olivaceous to olivaceous-brown, thin-walled, smooth, apex obtuse to truncate, base truncate, hila 3–5 µm wide, unthickened, not darkened.

SCHUBERT et al. (2003) monographed the genus *Fusicladium* Bonord. emend. (incl. *Pollaccia* E. Bald. & Cif. and *Spilocaea* Fr.). Based on a proposal by BRAUN et al. (2002), the name *Fusicladium* is now conserved (MCNEILL 2006: 202). Several species of the latter genus are known to occur on hosts of the genus *Salix*. *F. catenosporum* (Butin) Ritschel & U. Braun and *F. saliciperdum* (Allesch. & Tubeuf) Tubeuf are two typical pollaccia-like *Fusicladium* species on willows, easily distinguishable from *F. salicis* by having short conidiophores with unilocal, determinate to percurrent conidiogenous cells. The conidia in *F. catenosporum* are produced in branched chains, whereas those of *F. saliciperdum* are formed singly. The rather broad conidia of *F. salicis* resemble those of the anamorph of *Venturia chlorospora* (Ces.) P. Karst., which is only known from culture (NÜESCH 1960, SIVANESAN 1977, SCHUBERT et al. 2003). However, *V. chlorospora* is, as far as known, a foliicolous species. *Fusicladium* sp. on leaves of *Salix purpurea* in North America (ONDŘEJ 1973) is characterised by its long conidiophores, 40–95(–130) µm, which are, however, formed in small, non-sporodochial fascicles. Furthermore, well-developed stromata are lacking and the conidia are narrower, 3–4(–5) µm wide (ONDŘEJ 1973, SCHUBERT et al. 2003).

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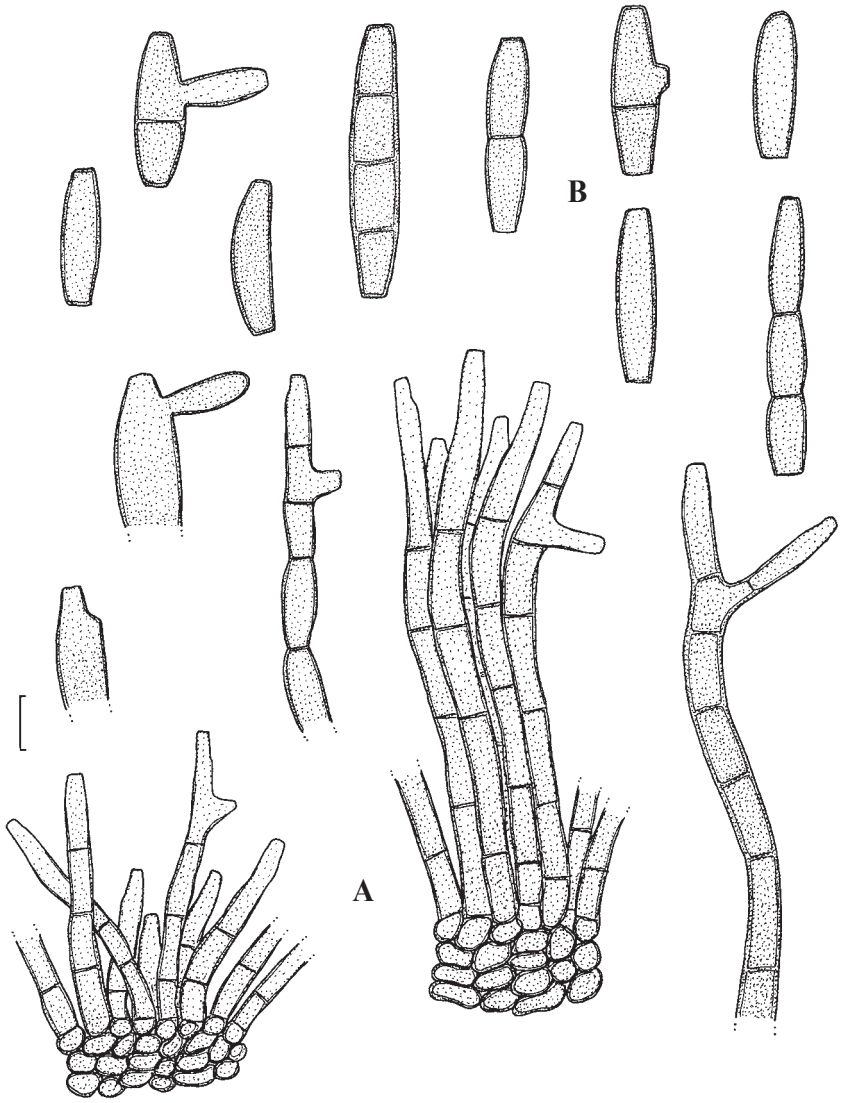


Fig. 7: *Fusicladium salicis* (from the topotype). A – conidiophores, B – conidia. Bar = 10 µm. (U. Braun del.)

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