

## Phytoparasitic Hyphomycetes from Utah (USA) – II

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*Cladosporium agoseridis* sp. nov. is described and the new combination *Passalora platyspora* is introduced. Some species new to North America and new hosts are recorded.

Keywords: Hyphomycetes, USA, Utah, new records, *Cladosporium agoseridis*, *Passalora platyspora*.

During various excursions in Utah, USA, the senior author collected numerous phytopathogenic hyphomycetes. A *Cladosporium* on *Agoseris glauca* turned out to be a new species. It is described as *Cladosporium agoseridis*. Furthermore, the following new host plants and fungal species new to North America are recorded: *Thermopsis montana* [new host plant of *Cercostigmia thermopsidis* (Earle) U. Braun], *Cladosporium aecidiicola* Thüm. (new to North America), *Perideridia gairdneri* [new host for *Passalora punctum* (Delacr.) S. Petzoldt], *Ramularia lycopi* Hollós on *Lycopus asper* (new to North America, new host). The new combination *Passalora platyspora* (Ell. & Holway) U. Braun is introduced. The present part continues the paper published by Braun & Rogerson (1993).

***Cercostigmia thermopsidis*** (Earle) U. Braun, *Crypt. Bot.* 4: 108 (1993).

= *Cercospora thermopsidis* Earle, *Bull. New York bot. Gard.* 2: 348 (1902).

= *Stigmia earlei* Deighton, *Mycol. Pap.* 151: 8 (1983).

Material examined. – USA: Utah, San Juan Co., Manti-La Sal National Forest, west of Monticello, on *Thermopsis montana* Nutt., Aug. 28, 1988, C. T. Rogerson 88-123 (NY, HAL). Washington Co., Dixie National Forest, north side of Pine Valley Mountains, Whipple Creek Trailhead, Aug. 22, 1991, C. T. Rogerson 91-66 (NY, HAL).

This is the first record of *C. thermopsidis* from Utah and *Thermopsis montana* is a new host species (cf. Farr & al., 1989). There

is a third collection on this host from Arizona [Cochise Co., Coronado National Forest, Rustler Park Campground, west of Portal, Aug. 22, 1994, C. T. Rogerson 94-50 (NY, HAL)].

***Cladosporium aecidiicola*** Thüm., Mycotheca universalis 173 (1876).

**Material examined.** – USA: Utah, Wasatch Co., Uinta National Forest, Soldier Creek Bay, near Aspen Grove Recreation Site, on aecia of *Puccinia grindeliae* Peck on leaves of *Chrysothamnus viscidiflorus* var. *lanceolatus* (Nutt.) Greene [det. (host plant): N. H. Holmgren], Sept. 8, 1994, C. T. Rogerson 94-51 (NY, HAL).

According to Ellis (1976), this species was only known from Europe. The host is new.

***Cladosporium agoseridis*** U. Braun & Rogerson sp. nov. – Fig. 1.

Maculae amphigenae, suborbiculares vel irregulares, 1–3 mm diam. vel confluentes, griseo-brunneae, saepe zonatae, margine tenui atriore brunneo cinctae. Caespituli amphigeni, punctiformes vel subeffusi, brunnei. Mycelium immersum. Hyphae brunneae, septatae, ramosae, ca. 3–10  $\mu\text{m}$  latae, interdum aggregatae, inflatae, ca. 5–15  $\mu\text{m}$  latae, subcuticulares vel intraepidermales. Conidiophora solitaria vel laxe subfasciculata, erumpentia, simplicia, 20–60 x 3–10  $\mu\text{m}$ , erecta, subcylindrica vel curvata, geniculata-sinuosa, saepe apicem versus attenuata, pallide flavida, olivacea vel brunnea, modice crassitunicata, levia. Cicatrices conidiales conspicuae, prominentes, incrassatae, fuscae. Conidia catenata vel ramificata, subglobosa, ellipsoidea-ovoidea, subcylindrica, (10–)12–30(–50) x (5–)6–13(–15)  $\mu\text{m}$ , 0–1(–3) septata, pallide flavida, olivacea vel brunnea, dense verrucosa, modice crassitunicata; hila prominentia, incrassata, fusca.

**Holotypus.** – USA: Utah, Washington Co., northwest side of Pine Valley Mountain, northeast of Diamond Valley, vicinity of Mud Spring, on *Agoseris glauca* (Pursh) Raf. (Asteraceae), June 7, 1994, C. T. Rogerson 94-49 (NY). Isotypus: HAL.

**Leaf spots** amphigenous, subcircular or somewhat irregular, 1–3 mm diam. or confluent and larger, greyish brown, often somewhat zonate, surrounded by a narrow darker margin or marginal line, finally large leaf segments or entire leaves discoloured, brown, necrotic. – **Caespituli** amphigenous, punctiform to subeffuse, brown. – **Mycelium** internal; hyphae brown, septate, branched, ca. 3–10  $\mu\text{m}$  wide, forming small subcuticular to intraepidermal aggregations of inflated hyphal cells, ca. 5–15  $\mu\text{m}$  wide, brown. – **Conidiophores** solitary or in small loose groups or fascicles, arising from internal hyphae or hyphal aggregations, erumpent, simple, 20–60 x 3–10  $\mu\text{m}$ , straight and subcylindric to curved, geniculate-sinuuous, often wider near the base and attenuated towards the apex, pale yellowish, olivaceous to brown, wall somewhat thickened, smooth; conidial scars conspicuous, prominent, thickened

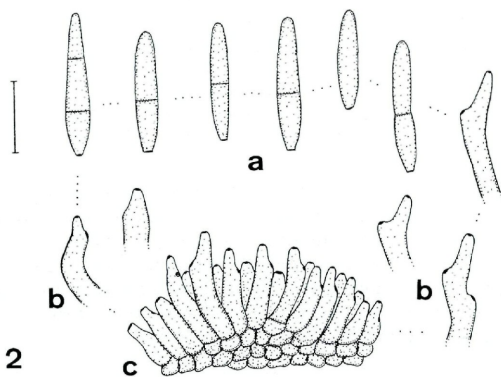
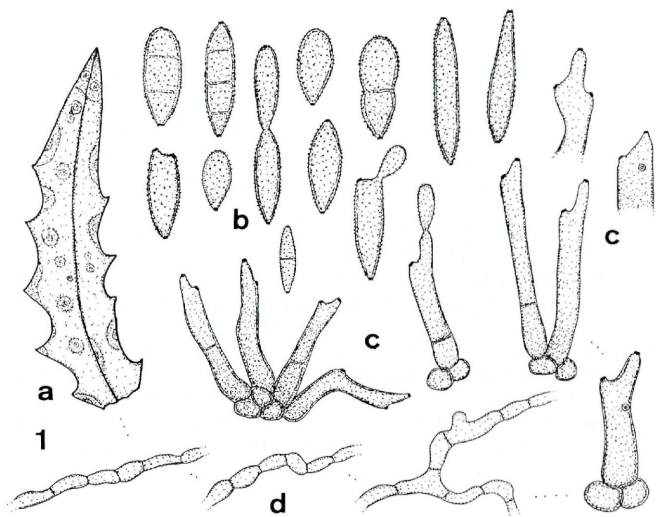


Fig. 1. - *Cladosporium agoseridis* sp. nov. - a. lesions. - b. conidia. - c. conidiophores. - d. hyphae.

Fig. 2. - *Passalora punctum* on *Perideridia gairdneri*. - a. conidia. - b. conidiophores. - c. fascicle of conidiophores. - Bar = 20  $\mu$ m. U. Braun del.

and darkened (*Cladosporium* type). – Conidia catenate, often in branched chains, subglobose, ellipsoid-ovoid, subcylindric, (10–)12–30(–50) x (5–)6–13(–15)  $\mu\text{m}$ , 0–1(–3)-septate, pale yellowish, olivaceous to brown, wall densely verrucose, somewhat thickened; hila prominent, thickened and darkened (*Cladosporium* type).

*C. agoseridis* is biologically distinct from *C. herbarum* (Pers.) Link, *C. macrocarpum* Preuss, *C. cladosporioides* (Fres.) de Vries and other saprobic species. The new species is phytopathogenic and causes definite leaf spots. *C. herbarum* and *C. macrocarpum* are morphologically distinguished by much longer nodulose conidiophores and much narrower conidia, mostly 2–5  $\mu\text{m}$  wide. The conidiophores of *C. variabilis* (Cooke) de Vries are similar, but the conidiophores are much longer, often nodulose and tortuous, and spirally coiled aerial hyphae are present. *C. obtectum* Rabenh. (on *Artemisia*, Asteraceae, Sardinia) and *C. gynoxidicola* Petr. (on *Gynoxys*, Asteraceae, Ecuador) are distinguished by having frequently branched conidiophores. The latter species is rather *Mycovellosiella*-like (Ellis, 1971, 1976). Shaw (1973) recorded *Cladosporium* spec. on *Agoseris glauca* from Washington. This record seems to belong to the present species.

***Passalora punctum*** (Delacr.) S. Petzoldt, in Arx, Plant Pathogenic Fungi: 288, Berlin, Stuttgart 1987 (sub „*puncta*“). – Fig. 2.  
= *Cercosporidium punctum* (Delacr.) Deighton, Mycol. Pap. 112: 47 (1967).

Material examined. – USA: Utah, Weber Co., Wasatch Mts., Coldwater Canyon, east of Ogden, on *Perideridia gairdneri* (Hook. & Arnott) Mathias (Apiaceae), Aug. 14, 1990, C. T. Rogerson 90-94 (NY, HAL).

This collection is characterized as follows:

Conidiomata punctiform, large, sporodochial; stromata substomatal, large, 30–100  $\mu\text{m}$  diam. – Conidiophores very numerous, in dense fascicles, usually curved, 8–40 x 3–9  $\mu\text{m}$ , continuous or with a single basal septum, olivaceous brown, partly geniculate. – Conidia subcylindric (–obclavate), 25–45 x (4–)5–7(–9)  $\mu\text{m}$ , hyaline or subhyaline, smooth.

*Perideridia gairdneri* has been recorded from North America as host of *Cercosporidium depressum* (Berk. & Br.) Deighton (= *Passalora depressa* (Berk. & Br.) Sacc.) and *Cercosporidium punctiforme* (G. Winter) Deighton (Farr & al., 1989). The latter species differs, however, by having distinctly septate conidiophores and verruculose conidia (distinctly verruculose in the lower half). *Passalora depressa*

is characterized by non-geniculate conidiophores and faintly pigmented conidia.

The genus *Cercosporidium* has been reduced to synonymy with *Passalora* (Arx, 1983; Deighton, 1990; Braun, 1995). *Passalora platyspora* is the correct name for *Cercosporidium punctiforme* in this genus:

***Passalora platyspora*** (Ell. & Holway) U. Braun comb. nov.

- Bas.: *Cercospora platyspora* Ell. & Holway, J. Mycol. 3: 16 (1887).  
= *Didymaria platyspora* (Ell. & Holway) Ell. & Ev., North American Fungi, Second Ser., 2873 (1893).  
= *Fusicladium depressum* var. *platysporum* (Ell. & Holway) J. J. Davis, Parasitic fungi of Wisconsin: 113 (1942).  
= *Fusicladium punctiforme* G. Winter, in Rabenh., Fungi europaei et extraeuropaei 3582 (1886), non *Passalora punctiformis* Otth, Mitt. naturf. Ges. Bern: 66 (1868).  
= *Cercosporidium punctiforme* (G. Winter) Deighton, Mycol. Pap. 112: 45 (1967).  
= *Passalora winteriana* U. Braun, Nova Hedwigia 55: 214 (1992).

***Ramularia lycopi*** Hollós, Annls Mus. nat. Hung. 5: 467 (1907).

Material examined. – USA: Utah, Weber Co., North Fork County Park, along Cutler Creek, east side of Wasatch Mts., northwest of Liberty, on *Lycopus asper* Greene (Lamiaceae), Aug. 16, 1989, C. T. Rogerson 89-108 (NY, HAL).

This species is new to North America and the host plant is also new.

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