

## A revision of the genus *Sphaerographium* and the taxa assigned to *Rhynchophoma* (anamorphic Ascomycetes)

by

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With 8 figures

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**Abstract:** The genus *Sphaerographium* Sacc. is monographed, and the taxa described under the earlier refuted generic name *Rhynchophoma* are revised. Three species are accepted in *Sphaerographium*. The new combination *Topospora raduloides* is proposed for *Rhynchophoma raduloides* Sacc. & Scalia, for which a detailed description is given. Thirty excluded or insufficiently known taxa with names in *Sphaerographium* or *Rhynchophoma* are discussed. Ten of these names are reduced into synonymy with other taxa.

**Key words:** Coelomycetes, *Corniculariella*, *Durandiella*, *Godronia*, *Sphaeronaema*, taxonomy, *Topospora*.

### Introduction

In the most recent comprehensive account of the coelomycetes, Sutton (1980) accepted some 370 generic names. For a number of generic names, only the original material or other representative collections of the type species could be studied at that time. One of these is the genus *Sphaerographium* Sacc., typified by *S. squarrosus* (Riess) Sacc. Sutton gave a modern generic description of this rather unknown and rarely collected genus. For the first time, details of conidiogenesis and conidiomatal anatomy were given. Sutton treated only the type species, and over 20 names previously included in the genus remained to be critically revised.

Recently, an isolate of a fungus from decaying petals of *Camellia sasanqua* from New Zealand was received for identification at CBS. It apparently was a member of *Sphaerographium*, but differed both ecologically and morphologically from the species thus far described in the genus. After further study, including the literature

on similar coelomycetes described in other genera, the *Camellia* fungus was compared with type material of *S. petiolicola* P. Karst. (Karsten 1905), a species with some resemblance in conidial morphology, that had been described from petioles of *Sorbus aucuparia* in Finland. As that fungus was found to represent a different taxon, the fungus from *Camellia* was described as a new species, *S. tenuirostrum* (Verkley 2001). Having already developed an interest in these anamorphs through my earlier work on inoperculate discomycetes, I decided to revise *Sphaerographium*. In spite of intensive searches in suitable habitats in a number of European countries during a period of over two years, I was unsuccessful in recollecting any material of this genus. Therefore, characters of the living state *in planta* could not be included in this study, and only for one species a culture is available. Similar forms were also repeatedly described in *Rhynchophoma* P. Karst. (Karsten 1884), a generic name that was synonymized with *Ceratostomella* Sacc. by Petrak (1953), because its type species was based on an unidentifiable *Ceratostomella* species. Therefore, names combined into *Rhynchophoma* were also revised in this study.

### Material and methods

Material was examined from the following herbaria: B, CUP, F, G, H, IMI, JE, K, LISE, NY, NYS, PAV, PAD, S, W (abbreviations according to Holmgren et al., 1990). All herbarium specimens were rehydrated in tap water and occasionally gently heated. Microscopic observations and measurements were done on hand sections and squash mounts in tap water. Drawings of the same mounts were made with a camera lucida. The description of *S. tenuirostrum* was based on fruitbodies grown on oatmeal agar, as described by Verkley (2001). The descriptions of the other taxa was based on material *in planta*.

## Taxonomic part

### The genus *Sphaerographium*

*Sphaerographium* Sacc., Syll. Fung. 3: 596. 1884.

Lectotype species – *S. squarrosum* (Riess) Sacc. [= *Sphaeronaema squarrosum* Riess], selected by Von Höhnelt (1915b).

*Pseudographium* Jacz., Nouv. Mém. Soc. Imp. Nat. Moscou 15: 370. 1898 [non Höhnelt 1915c].

Holotype species – *P. squarrosum* (Riess) Jacz. [= *Sphaeronaema squarrosum* Riess; see Jaczewski, p. 372].

? = *Cryptorhynchella* Höhn., Sitzungsber. Kaiserl. Akad. Wiss. Wien, Math.-Naturw. Cl., Abt. 1, 124: 100. 1915.

Type species – *C. lantanae* (Died.) Höhn. [= *Sphaerographium lantanae* Died.].

Conidiomata pycnidial, superficial or erumpent from the epidermis of the host, lacking a basal stroma, separate, solitary or gregarious, conical to short-cylindrical or the lower part more or less spherical, glabrous or with minute hyphal outgrowths from the surface of the conidiomatal wall, rostrate, unilocular, dark brown to black. Ostioles single, circular, at the tip of the usually gradually attenuated blunt beak. Conidiomatal wall in the lower part mainly composed of angular, brown cells, in the upper part of more elongated cells, the inner cells often with more thickened or gelatinized, hyaline walls. Conidiophores hyaline, smooth, unbranched or branched near the base,

septate, with acrogenous or acropleurogenous apertures; usually lining the whole inner conidiomatal wall. Conidiogenous cells discrete or integrated, determinate, phialidic, cylindrical, hyaline, smooth, periclinal thickening visible, collarete present or absent. Conidia hyaline, smooth, fusiform to broadly falcate, slightly pointed at the tip, narrowly truncate at the base, 0-septate (in *S. petiolicola*), or 1-3-euseptate and then usually seceding after formation of the first, median septum, eguttulate.

This generic description largely agrees with that given by Sutton (1980) for *Sphaerographium*, but there are two notable modifications. Firstly, the conidiogenous cells are not only integrated, but also discrete, as this was observed in all three species accepted here, including material of the type species, *S. squarrosom*. Secondly, mature (seceded) conidia can be 1-celled, as seen in *S. petiolicola*, 2-celled as in *S. tenuirostrum*, or 4-celled, as in the type species. Sutton (1980) described the conidia of *Sphaerographium* as '3-septate (1-2-septate in immature conidia)'.

When Saccardo (1884) erected the genus *Sphaerographium*, he included nine species, all originally described in *Sphaeronaema* Fr. : Fr., viz., *Sphaerographium loniceriae* (Fuckel) Sacc., *S. squarrosom* (Riess) Sacc., *S. capillare* (Ellis & Harkn.) Sacc., *S. hystricinum* (Ellis) Sacc., *S. echinatum* (Berk. & M.A. Curtis) Sacc., *S. stellatum* (Ellis) Sacc., *S. seriatum* (Berk. & M.A. Curtis) Sacc., *S. fraxini* (Peck) Sacc., and *S. microperae* (Cooke) Sacc. *Sphaerographium* was described as having vertical, conical or spiniform, rigid and black pycnidial conidiomata with filiform-fusoid, one-celled, hyaline conidia that are frequently guttulate and produced on conidiophores ('stipitellatae'). Saccardo (1884) reserved *Sphaeronaema* for species with hyaline, one-celled ovoid or oblong conidia. Species with two-celled conidia were placed in *Rhynchophoma* P. Karst. (Karsten 1884), and those with multi-celled, fusiform to falcate conidia in *Cornularia* Sacc. (Saccardo 1884) (= *Corniculariella* P. Karst.). At that time the diagnoses were, however, often very incomplete, even lacking details about the characters used for Saccardo's classification. Saccardo (1884) himself mentioned that the descriptions did not always allow to distinguish the truly pycnidial fungi from synnematal forms. In many cases, only the droplet of conidial slime at the tip of the fruitbody was subjected to microscopic examination, and no information was available regarding conidiogenesis or presence or absence of conidiophores. Moreover, the statements regarding the conidial septation were often vague or inaccurate.

Jaczewski (1898) included *Sphaerographium* and *Cornularia* Sacc. (= *Corniculariella* P. Karst.) in his wider concept for *Sphaeronaema*. He considered Saccardo's classification of these fungi too artificial, as it was only based on conidial characters. At the same time, he erected *Pseudographium* for *Sphaerographium squarrosom* and seven other species, a rather heterogeneous assemblage. Von Höhnel (1915c) emended the genus *Pseudographium* Höhn. (as 'Jacz. Char. em. v. H.' [non Jacz. 1898]; nom. illeg., Art. 53), and considered *P. persicae* (Schw.) Jacz. as the lectotype species. Two of the species originally included by Jaczewski were placed in other genera: *P. squarrosom* (Riess) Jacz. was designated by Von Höhnel (1915b) as lectotype of *Sphaerographium*, and *P. flavoviride* (Fuckel) Jacz. was considered to belong to *Stilbella*. However, since the lectotype species of *Sphaerographium* was also included in the original account of *Pseudographium*, the latter automatically became a syn-

onym of the former (Sutton 1977). Moreover, by the lectotypification of *Pseudo-graphium* with *S. persicae*, Von Höhnel (1915c) created a later homonym, *Pseudo-graphium* Höhn. Details of conidiogenesis and fruitbody anatomy were also not taken into consideration at that time.

Such microanatomical features later became the basis for modern coelomycete taxonomy, and Sutton (1980) thus accepted *Corniculariella* P. Karst., *Topospora* Fr. and *Sphaerographium* as separate genera for pycnidial or eustromatic ascomycetes with more or less differentiated beaks and complex conidiogenous systems. Many of these forms were originally described in *Sphaeronaema* Fr. : Fr. Sutton (1977) accepted the lectotypification of *Sphaeronaema*, with *S. cylindricum* (Tode : Fr.) Fr., as suggested by Petrak & Sydow (1923), which would preserve the established usage of *Sphaeronaema* in the sense of Saccardo (1884) and Jaczewski (1898). Nonetheless, the status of *Sphaeronaema* remains obscure, and Sutton (1980) did not treat the genus in his book. Many names published in *Sphaeronaema* still need to be revised.

Karsten (1884) described the genus *Rhynchophoma* P. Karst. as follows: conidiomata immersed or superficial, carbonaceous, quite slender, black, with a long, cylindrical rostrum; spores ellipsoid to ovoid, one-celled or spuriously (falsely) 1-septate, hyaline. Saccardo (1884) reserved *Rhynchophoma* for *Phoma*-like anamorphs with superficial or erumpent, subglobose, rostrate conidiomata and hyaline, two-celled, ovate-oblong conidia. As I was able to verify by personal observation, the original material of *Rhynchophoma crypta* P. Karst., the type species of the genus, only contains very old fruitbodies of some species of *Ceratostomella* Sacc., and *Rhynchophoma* was therefore correctly synonymized with *Ceratostomella* by Petrak (1953) and Sutton (1977). Other species assigned to *Rhynchophoma* were in part referred to *Sphaeronaema* and *Chaetosphaeronaema* Moesz, but still require critical assessment.

Von Höhnel (1915a) described the genus *Cryptorhynchella* Höhn. for *Sphaerographium lantanae* Died. as follows: pycnidia globose, immersed, black, with a long, hairy erumpent rostrum, the conidiomatal wall of parenchymatous tissue, conidiophores simple, short, conidia cylindrical, straight, with pointed ends, hyaline, one-celled or inconspicuously septate. Ainsworth & Bisby (1971) and also Sutton (1977, 1980) listed *Cryptorhynchella* as a possible synonym of *Sphaerographium*, but in view of the lack of original material of its type species, a more definite conclusion regarding its identity could not be reached (see below).

There are no confirmed connections of *Sphaerographium* with a teleomorph (see also the note under *S. squarrosus*). Molecular studies will be necessary to clarify the evolutionary relationships of these anamorphs, but no isolates are as yet available of two *Sphaerographium* species including the type species. The eustromatic counterparts of *Sphaerographium*, viz. *Corniculariella*, *Foveostroma* DiCosmo (syn. *Micropera* Lév.) and *Topospora*, have teleomorphs in families of the inoperculate discomycetes (Helotiales Nannf.), especially the families Helotiaceae Rehm nom. cons., and Dermateaceae Fr. High levels of homoplasy in the morphological characters could be expected in these coelomycetous anamorphs.

## Key to the species of *Sphaerographium*

- 1a. Conidia remaining 1-celled, rarely over 15 µm long; on petioles of *Sorbus*..... *S. petiolicola*  
1b. Conidia becoming 1-4-celled, mostly over 15 µm long.....2
- 2a. Conidia on average less than 20 µm long; on decaying petals of *Camellia sasanqua*.....  
..... *S. tenuirostrum*  
2b. Conidia on average more than 20 µm long; on twigs of *Lonicera* spp. .... *S. squarrosum*

## The species of *Sphaerographium*

### 1. *Sphaerographium petiolicola*

*Sphaerographium petiolicola* P. Karst., Acta Soc. Fauna Fl. Fenn. 27, (4): 15. 1905 [as *petiolicolum*].

Type – Finland, Northern Savonia, Kuopio, on a petiole of *Sorbus aucuparia*, O. Lönnbohm s.n., 4. VI.1904 (H, Herbarium P. A. Karsten 4590, holotype). For illustrations, see Verkley (2001).

Conidiomata in planta pycnidial, erumpent from the epidermis of the host, separate, solitary or gregarious, hemispherical, conical to short-columnar, rostrate, glabrous, unilocular, 50-150 µm diam, up to 200 µm high, dark brown to black. Ostioles single, circular, at the tip of a gradually attenuated, relatively wide and blunt beak. Conidiomatal wall in the lower part composed of an outer layer of brown, thick-walled, angular cells, and an inner layer of hyaline, thin-walled, angular, prismatic or irregular cells; in the upper part, the wall is composed of a homogeneous tissue of elongated hyphal cells. Conidiophores hyaline, smooth, branched near the base, septate, 15-35 × 1.4-2.5 µm, with acropleurogenous apertures. Conidiogenous cells discrete or integrated, determinate, phialidic, cylindrical, hyaline, smooth, mostly terminal and gradually tapering towards the apex, 13-17.5 × 1.4-1.8 µm, more rarely integrated, with an opening on a 2-6 µm long projection which arises directly below the upper septum; collarete evident or invisible. Conidia hyaline, pale whitish in mass after rehydration, white when dry, smooth, fusiform, broadly falcate, 0-septate, slightly pointed at the top, narrowly truncate at the base, with a single globular body in the center, (9-)12-15(-16) × 1.8-2.2 µm. No isolates are available of this species.

NOTE. – According to Von Höhnel (1915b), this could be a species of *Collonaemella* Höhn. [nom. dub. fide Sutton, 1977]. Verkley (2001), however, concluded that the original material represented a good species of *Sphaerographium*.

### 2. *Sphaerographium squarrosum*

Figs 1-5

*Sphaerographium squarrosum* (Riess) Sacc., Syll. Fung. 3: 597. 1884 ≡ *Sphaeronaemasquarrosum* Riess, Bot. Zeitg. 11: 133. 1853 ≡ *Pseudographium squarrosum* (Riess) Jacz., Nouv. Mém. Soc. Imp. Nat. Moscou 15: 371. 1898.

Type – Germany, Allendorf, April, on *Lonicera xylosteum* (not seen).

? = *Sphaerographium loniceriae* (Fuckel) Sacc., Syll. Fung. 3: 597. 1884 ≡ *Sphaeronaemaloniceriae* Fuckel, Jahrb. Nassauischen Vereins Naturk. 23-24: 275. 1870.

Type – Switzerland, Jura, on dead branches of *Lonicera xylosteum* (and *L. alpigena*?), P. Morthier, distributed in Fuckel, Fungi rhen. 2145 (G, syntype).

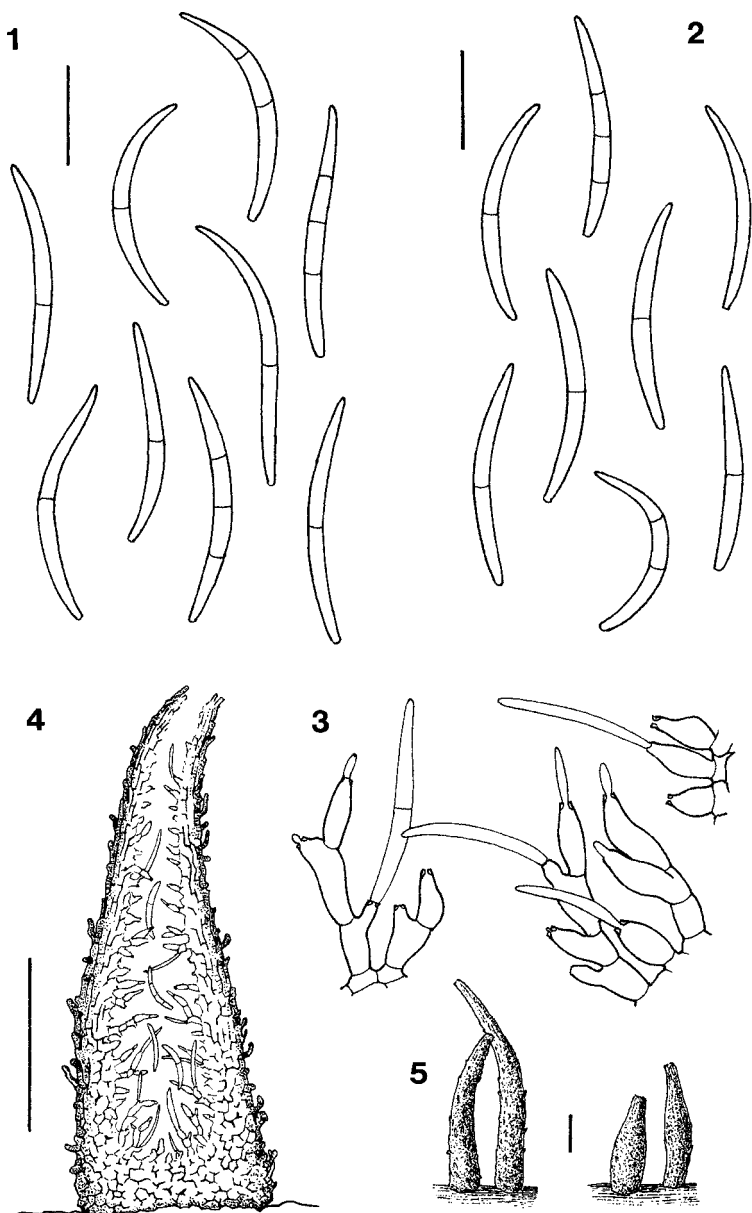


Fig. 1-5. *Sphaerographium squarrosum*. 1. W10442, on *Lonicera alpigena*. Conidia (bar = 10  $\mu$ m). 2-5. IMI 12163, on *Lonicera xylosteum* (NEOTYPE). 2. Conidia (bar = 10  $\mu$ m). 3. Conidiogenous cells (bar = 10  $\mu$ m). 4. Transverse section of conidioma (bar = 100  $\mu$ m). 5. Habit of conidiomata (bar = 100  $\mu$ m).

Conidiomata in planta pycnidial, superficial or erumpent from the epidermis of the host, separate, solitary or in small groups, cylindrical to conical, widest just below the middle or at the base, rostrate, glabrous or with minute hyphal outgrowths from the surface of the conidiomatal wall, unilocular, (75-)100-200  $\mu\text{m}$  diam, 200-400 (-550)  $\mu\text{m}$  high, dark brown to black. Ostiole single, circular, at the tip of a gradually attenuated, relatively narrow and blunt beak. Conidiomatal wall in the lower part composed of an outer layer of angular cells, with brown, strongly thickened and gelatinized walls, and an inner layer of angular, prismatic or irregular cells, with hyaline, quite thin walls in smaller fruitbodies, or also thickened and gelatinized walls in large fruitbodies; in the upper part, the conidiomatal wall is composed of more elongated hyphal cells, the outermost ones often with paler, less gelatinized walls. Conidiophores mostly formed in about the lower half of the conidiomatal cavity, hyaline, smooth, unbranched, or branched near the base, septate, with acropleurogenous apertures, 15-35  $\times$  2-3  $\mu\text{m}$ . Conidiogenous cells discrete, especially in the upper half of the conidiomatal cavity, but mostly integrated, determinate, phialidic, ampulliform to cylindrical, hyaline, smooth, widest around the middle or just below the aperture, terminal cells 8-12  $\times$  2-3  $\mu\text{m}$ , apertures of intermediate cells directly below the upper septum, sometimes on a 1-3(-4.5)  $\mu\text{m}$  long projection, collarete invisible. Conidia hyaline, pale whitish in mass after rehydration, appearing white in mass when dry, smooth, fusiform, (broadly) falcate, 1-3-septate, apically slightly pointed, narrowly truncate at the base, with some granular contents, (18-)22-26.5(-28.5)  $\times$  1.5-2  $\mu\text{m}$ . No isolates are available of this species.

ADDITIONAL SPECIMEN EXAMINED: AUSTRIA, Ybbsitz, on dead twig of *Lonicera xylosteum*, P. Lambert & P.P. Strasser s.n., s. dat., distributed in Kryptogamae exs. 2234 (IMI 12163, NEOTYPE, designated here). Same loc., substr., coll., distributed in Kryptogamae exs. 2234 (W 12187). ITALY, Süd-Tirol, Lago Nero near Gemänk, Schlüderbach, on *Lonicera alpigena*, K. v. Keissler s.n., VI.1925 (W 10442, sub *S. loniceræ*); Salzburg, on *Lonicera xylosteum*, K. v. Keissler s.n., VI.1914 (W 11678). SWEDEN, Upland, Bondkyrka parish, 'Vårdsåtra skog' near Upsala, on *Lonicera xylosteum*, S. Lundell s.n., 21.V.1935 & 27.IV.1936, distributed in S. Lundell & J.A. Nannfeldt, Fungi exs. Suecici 787 (W 12589).

NOTES – The conidiomata of this species vary considerably in size and shape between collections. For example, the fruitbodies in the specimen W10442 on *Lonicera alpigena* are cylindrical, and often the upper part is bent, while in W11678 and IMI 12163 (the only specimen cited by Sutton 1980), both on *L. xylosteum*, they are much more compact, conical to almost obpyriform. Especially in cylindrical conidiomata, the conidiogenous cells are mostly discrete, while conidiophores are sparse and confined to the bottom of the locule. Von Höhnel (1915b) suspected that the form on *Lonicera alpigena* may be specifically distinct. Conidial morphology is very similar in all the collections cited above, and I therefore regard them as conspecific. The conidia form a single, median septum before secession, and the second and third septa are formed later.

Von Höhnel (1915b), who lectotypified *Sphaerographium* with *S. loniceræ* (Fuckel) Sacc., investigated original material in Fungi rhen. 2145, a collection from *Lonicera xylosteum*. He mentioned the presence of a brownish, small 'hyphostroma' at the base and that the locules are confined to the upper 2/5 part of the fruitbodies. However, in the specimens I have seen a stromatic base is lacking, although in the larger

fruitbodies the basal wall may be quite thick and expanded in circumference. Moreover, the locules reach much deeper than do those in the small fruitbodies, i.e., almost to the level of the substratum. It is possible that the material studied by Von Höhnelt was formed under relatively unfavorable conditions.

Fuckel (1870) assumed that *Sphaeronaema lonicerae* was the anamorph of *Dothiora lonicerae* Fuckel, an ascomycete described from *Lonicera alpigena*. His description of this anamorph was actually based on material collected on *Lonicera alpigena* and *L. xylosteum*. The presumed teleomorph on *L. xylosteum*, however, was later described as a new species, *Dothiora xylostei* Fuckel, because of differences in the ascospores (Fuckel 1871: 332). In his monographic study of Dothioraceae, Froidevaux (1972) only accepted *Dothiora phaeosperma* Froidevaux on *Lonicera* spp., for which he reported a connection with a *Dothichiza* anamorph, with eustromatic fruitbodies and ovoid to oblong conidia, 3-(6)-9.5 × 2.5-(3)-4.5 µm. That anamorph is more like the *Sclerophoma* anamorphs of *Sydowia* Bres. and it is incompatible with Fuckel's original description of *Sphaeronaema lonicerae*. Froidevaux (1972) examined a specimen of Fungi rhen. 2145 (*Sphaeronaema lonicerae*) from G, probably not the same one studied here, and concluded that it only contained an unidentifiable anamorph of a member of the Diaporthaceae. Unfortunately, the only specimen of *Sphaeronaema lonicerae* I was able to obtain did not contain any anamorph. However, based on the description given by Fuckel, *S. lonicerae* is almost certainly a *Sphaerographium*, and therefore I list it as a possible synonym of *S. squarrosom*. Jaczewski (1898) already indicated that this name was a synonym of *Sphaeronaema squarrosom* Riess.

Unfortunately, no type material of *S. squarrosom* could be located. IMI 12163, a collection from the type host, was used by Sutton (1980) to compile his generic description of *Sphaerographium*. In accordance with Art. 9.6 of the ICBN, a neotype can be designated as long as all original material is missing. Therefore, I propose to neotypify *S. squarrosom* with IMI 12163.

### 3. *Sphaerographium tenuirostrum*

*Sphaerographium tenuirostrum* Verkley, Mycologia 93: 205-211. 2001.

Type – New Zealand, Auckland, Blockhouse Bay, ex decaying petal of *Camellia sasanqua*, 10.IX.1999, C.F. Hill, 'National Plant Pest Reference Laboratory no. 775-A' (dried culture on oatmeal agar, herbarium CBS 6575, holotype; living culture CBS 102494).

Conidiomata in vitro pycnidial, superficial on the agar surface or immersed, separate or aggregated and the walls then partly fused, spherical to hemispherical, rostrate, glabrous, unilocular, 0.2-0.6 µm diam, black. Ostioles single, or sometimes 2-3, on the tip of a 100-300 µm long, slender neck, which is black at the base, and paler brown towards the apex; sometimes placed on a minute papilla. Conidiomatal wall composed of two layers: an outer layer of angular cells with brown, up to 1 µm thick walls, with intercellular dark brown deposits, and an inner layer of globose to angular cells with hyaline, thin walls. Conidiophores hyaline, smooth, scarcely branched near the base, septate, with acropleurogenous apertures, 20-50 × 1.5-2.5 µm.



Conidiogenous cells discrete or integrated, determinate, phialidic, cylindrical, hyaline, smooth, the intermediate cells with an opening immediately below the upper septum, the terminal cells gradually tapering towards the apex and  $8-15 \times 1.8-2.6 \mu\text{m}$ , with a minute periclinal wall thickening, collarette invisible. Conidia hyaline, pale whitish in mass, smooth-walled, fusiform, falcate, medianly 1-septate, with a somewhat pointed apex and a similar or narrowly truncate base, containing mostly 2 vacuoles in each cell, lacking guttules,  $(12-15-18(-19) \times 1.8-2.0(-2.2) \mu\text{m}$ .

Illustrations and descriptions of colonies on malt, oatmeal and cornmeal agars were given by Verkley (2001).

### Excluded taxa

The revised species, once described or combined in *Sphaerographium* or *Rhynchophoma*, are listed below in alphabetical order of the epithet. Accepted binomials are in bold. In some cases, the original material proved to be too poor for a positive identification, but sufficient to exclude it from *Sphaerographium*.

*Rhynchophoma alni* Tognini, Atti Ist. Bot. Pavia, Nuova Ser., 5: 12, Tab. 1, Fig. 14-15. 1899.

Type – Italy, Toscana, on corticated trunk of *Alnus glutinosa*, in August (PAV, permanent slide, type) = ***Melanconis alni*** Tul. & C. Tul.

NOTE – The permanent slide contains thick sections of the immersed, clustered fruitbodies of *Melanconis alni*. The asci have completely vanished in this material ('basidiis obsoletis' in the diagnosis). Therefore, *R. alni* is a new synonym of *Melanconis alni*.

*Sphaerographium avenaceum* C.E. Fairm., in Millspaugh & Nuttall, Publ. Field Mus. Nat. Hist., Bot. Ser. 5 (no. 212): 331. 1923.

Type – U.S.A., California, Santa Catalina Isl., ridge above Reservoir, Avalon, on dead leaves of *Avena barbata*, L. W. Nuttall 858, 11.IX.1920 (CUP-F 5067 (31-98), type).

NOTE – Millspaugh & Nuttall (1923) found *S. avenacearum* to be 'sparingly present' in the type material. Unfortunately, I could not find this species any more in the specimen, only numerous fruitbodies of species of *Phoma*, *Puccinia*, and also *Cladosporium* sp. The drawing in pencil which is included in the package depicts a single cylindrical spore with a cellular apical appendage, reminding of conidia of the graminicolous *Monochaetiellopsis themedae* (Kandasw. & Sundar.) B. Sutton & DiCosmo (teleom. *Hypnotheca graminis* Tommerup), but that fungus does not form pycnidial conidiomata as far as is known.

*Sphaerographium capillare* (Ellis & Harkn.) Sacc., Syll. Fung. 3: 597. 1884 = *Sphaeronaema capillare* Ellis & Harkn., Bull. Torrey Bot. Club 8 (5): 51. 1881 = *Pseudographium capillare* (Ellis & Harkn.) Jacz., Nouv. Mém. Soc. Imp. Nat. Moscou 15: 375. 1898.

Type – U.S.A., Pennsylvania, Bethlehem, on dead bark of 'chestnut logs' (*Castanea* sp.), October (NY, syntype).

NOTE – A specimen of *Sphaeronaema capillare* received from NY contains 6 pieces of bark glued to a piece of paper, with a handwritten note: '*Sphaeronaema capillare* Ell. In cracks in the bark on Chestnut logs. Bethlehem Pa. Oct. 1880 Spor. cyl. .001' long Ell. & Hark.' This is probably original material. The fruitbodies which are composed of a blackish, globose immersed part and an often extremely long, sometimes even two-pronged neck, do not contain any spores. Ellis & Harkness

(l.c.) described them as 'cylindric, obtuse, more or less bent or curved', but the given size is incompatible with this and was probably misprinted.

*Rhynchophoma crypta* P. Karst., Hedwigia 23 : 19. 1884.

Type – Finland, Åbo region, Turku, Ruissalo, in decayed wood of *Tilia ulmifolia* (Herb. P. A. Karsten 1003, H, syntype).

NOTE – Petrak (1953) studied the same type material and concluded that it only contained very old fruitbodies of some species of *Ceratosomella* (see above), perhaps *C. subpilosa* (Fuckel) Sacc., an observation that I confirm. Its ascomata are surrounded by numerous very dark brown hyphae, and filled with hyaline, continuous, ellipsoid ascospores, mostly 9-12 × 3.0-3.5 µm (6-8 × 3-4 µm, according to Karsten, l.c.).

*Sphaerographium dombeyae* Sousa Dias & Sousa Da Câmara, Agron. Lusit. 14: 119. 1952.

Type – Portugal, Lisboa, Hortus Botanicus of the Science faculty, on branches of *Dombeya* sp., M. R. de Sousa Dias 1594, I.1951 (LISE 58214, holotype).

NOTE – The type contains numerous old conidiomata of a *Phomopsis* anamorph. The conidia described by the authors are the abundant, curved and hooked β-conidia, which could belong to the ubiquitous *Diaporthe eres* Nitschke. However, no α-conidia and no teleomorph could be observed and I am unable to identify this material to species level.

*Sphaerographium fraxini* (Peck) Sacc., Syll. Fung. 3 : 598. 1884 ≡ *Sphaeronaema fraxini* Peck, Annual Rep. New York St. Mus. 29: 71. 1878 = *Corniculariella spina* (Berk. & Ravenel) DiCosmo (DiCosmo 1978); teleomorph *Durandiella fraxini* (Schw. : Fr.) Seaver, fide Groves (1954).

NOTE – I have not seen original material, but concur with DiCosmo (1978), who classified this taxon in *Corniculariella*.

*Sphaerographium hystricinum* (Ellis) Sacc., Syll. Fung. 3 : 597. 1884 ≡ *Sphaeronaema hystricinum* Ellis, Bull. Torrey Bot. Cl. 6: 106. 1876 ≡ *Chondropodium hystricinum* (Ellis) Höhn., Sitzungsber. Kaiserl. Akad. Wiss. Wien Math.-naturw. Cl., Abt. 1, 125: 46. 1916 ≡ *Corniculariella hystricina* (Ellis) DiCosmo, Canad. J. Bot. 56: 1672. 1978.

Type – U.S.A., New Jersey, New Field, on dead *Viburnum* sp., J.B. Ellis, s.n., 23.II.1875 (NY, holotype).

Note – DiCosmo (1978) studied the original material from NY, and referred it to *Corniculariella*. The genetic connection of this anamorph to the discomycete *Dermea viburni* J.W. Grov. was demonstrated by Groves (1940) using culture methods. The type material is on *Viburnum* sp., but the species also occurs on *Rhododendron viscosum* (= *Azalea viscosa*). I could not find any record of the teleomorph on *Rhododendron*, and the type material of *Dermea crypta* Cooke still needs to be reinvestigated (Verkley 1999). In any case, having seen these anamorphs on both host plants, I agree with DiCosmo (1978) that they are morphologically indistinguishable.

ADDITIONAL SPECIMENS EXAMINED: U.S.A.; New Jersey, Newfield, on bark of *Viburnum*, J.B. Ellis, s.n., III.1881, distributed in C. Roum., Fungi gall. exs. Cent. XIII, 121, and also IV.1879, distributed in Ellis, N. Amer. Fungi 337 (NY); same loc., on *Rhododendron viscosum*, J.B. Ellis, s.n., 'Hieme' 1875, distributed in Thüm., Mycoth. univ. 787 (NY, syntype?); Same substr., loc. unknown, R.A. Harper, s.n., VI.1877 (NY); New York, Baroga, on *Viburnum* sp., C.H. Peck, s.n., s. dat. (NY, sub '*Sphaeronaema viburni*'); West Virginia, Fayette Co., Glade Creek, on unident. substr., L.W. Nuttall 481, 4.V.1894 (NY, sub *Dermea viburni* J.W. Grov.).

*Sphaerographium induratum* Syd., in Sydow & Sydow, Ann. Mycol. 11: 63. 1913.

Type – Japan, Mino prov., Kawaue-mura, on *Aralia edulis*, K. Hara, s.n., 17.VI.1912 (S, syntype).

NOTE – The original material in S only contains numerous ascomata of a species of *Gnomonia* or a similar Diaporthaceae, in which I could only observe sterile tissues. The hyaline inner tissue of these ascomata easily breaks into separate hyphal cells, which Sydow must have mistaken for conidia, as is suggested by the drawing given in Sydow & Sydow (1913).

*Rhynchophoma laevirostris* P. Karst., Meddeland. Soc. Fauna Fl. Fenn. 11: 154. 1884 ≡ *Sphaeronema laevirostre* (P. Karst.) Berl. & Voglino, Syll. Fung. IV a: 316. 1886.

Type – Finland, Tammela, Mustialia, on wood of *Populus tremula* (Herb. P.A. Karsten 3881, H, syntype).

NOTE – The type material contains numerous long-rostrate, mostly empty ascomata of a species of *Ceratocystis* Ellis & Halst., with ascospores  $4-6 \times 2 \mu\text{m}$ , which is compatible with Karsten's diagnosis of *R. laevirostris*. Jaczewski (1898) erroneously considered this species as a true *Sphaeronema* anamorph with small, unicellular conidia.

*Sphaerographium lantanoides* Peck, Annual Rep. New York St. Mus. 38: 96. 1885.

Type – U.S.A., New York, Adirondack Mts., Grassy Pond, on dead branches of *Viburnum lantanoides*, C.H. Peck, s.n., VI.1884 (NYS, syntype) = anamorphic *Durandiella viburnicola* (Seaver) J.W. Grov.

Note – The type specimen examined contains well-developed conidiomata of *Durandiella viburnicola* with typical subfiliform conidia, which are pointed at both ends and form 1 to 4 septa. *Corniculariella hystericina* (Ellis) DiCosmo, the anamorph of *Dermea viburni* J.W. Grov., forms rather similar conidiomata, yet the locules of that species are confined to the upper part of the fruitbody (DiCosmo 1978, Groves 1940, 1946).

ADDITIONAL SPECIMENS EXAMINED – U.S.A., New York: Adirondack Mts., Grassy Pond, on *Viburnum alnifolium*, C.H. Peck, s.n., VI.1884 (paratype?); Essex Co., Aiden Lain, on *Viburnum alnifolium*, C.H. Peck, s.n., VII.1884.

*Sphaerographium microperae* (Cooke) Sacc., Syll. Fung. 3: 598. 1884 ≡ *Sphaeronaemamicroperae* Cooke, Grevillea 7: 33. 1878.

Type – U.S.A., Georgia, Darien, 'on pustules of *Micropera* sp.', on *Prunus persica* (*P. dulcis*?), Ravenel's Amer. Fungi 2394 (K (M) 86105, syntype).

NOTE – The short diagnosis given by Cooke (1878) is as follows: 'Peritheciis in pustulis Microperae nitulantibus, elongatis, supra attenuatis, rectis, vel curvulis, atris in sporis arcte fusiformibus, curvulis, continuis, hyalinis (.04  $\mu\text{m}$  long).' The package received from K contains three pieces of bark. 'Peach' and 'Amygdalus' are indicated as hosts on the label. Present are fruitbodies of a *Cytospora*, and conidiomata of a *Foveostroma* anamorph of a *Dermea* sp., most likely *D. padi*. These conidiomata are distinctive, black, beaked, conical to cylindrical, protruding from cracks in the bark. Most have rather deep-lying cavities and, although some contain only a cavity in the upper beak-like protrusion, these are filled with the same kind of conidia as are found in the fruitbodies with deep-lying cavities. The conidia are typical of *Foveostroma* (syn. *Micropera*): curved, subfiliform, continuous or 1-celled, and mostly  $20-35(-40) \times 2.2-2.8 \mu\text{m}$ . No other fungus could be found which would agree with the original diagnosis. *Sphaeronaema microperae* is obviously just based on parts of its presumed fungal host, a species of *Dermea*, and the name is therefore excluded from *Sphaerographium*.

*Sphaerographium niveum* Dearn. & House, Bull. New York St. Mus. 266: 89. 1925.

Type – U.S.A., New York, Essex Co., Newcomb, on dead branches of *Rhamnus alnifolia*, H.D. House, s.n., 8.VI.1922 (NYS, syntype) = *Dermea morthieri* (Fuckel) Nannf.

Note – Groves (1947) has already listed the name as a synonym for the anamorph of *Pezizula morthieri* (Fuckel) J. W. Grov. He presumed that Dearness & House had not seen the teleomorph. This may be the case, but within the package of the syntype received from NYS, there is a smaller

package annotated with 'Note the black *Patinella* on this', which contains well-developed apothecia of *D. morthieri*. These apothecia agree with the type material of *Cenangium morthieri* Fuckel, which I investigated earlier (Verkley 1999), and they also confirm my earlier opinion that this species belongs in *Dermea* rather than in *Pezicula*. A detailed description of the holomorph is given by Groves (1947). The nomenclature of the anamorph is unsettled, and at least three names antedate *S. niveum*, viz. *Sphaeria micula* Fr. 1828: Fr., *Micula mougeotii* Duby 1844, and *Atractium therryanum* Sacc. 1879, but these have not been critically revised, and since Groves (l.c.) confirmed the genetic connection with *D. morthieri* by culture work, this has become rather academic.

*Rhynchophoma radula* (Berk. & M.A. Curtis) Sacc., Syll. Fung. 3 : 414. 1884  $\equiv$  *Sphaeronaema radula* Berk. & M.A. Curtis, Grevillea 2: 177. 1874.

Type – U.S.A., South Carolina, on *Acer rubrum*, 'no. 1088' (K(M) 86101) = anamorphic *Godronia cassandrae* (P. Karst.) P. Karst.

NOTE – Jaczewski (1898) accepted the name under *Sphaeronema*. The conidiomata, which are quite variable in shape, lack a preformed ostiole, opening by tearing of the upper wall tissue. The conidiogenous cells are integrated in acropleurogenous conidiophores, mostly 10-25  $\times$  1.5-2.5  $\mu\text{m}$ , or discrete, cylindrical or slightly inflated just below the apex, phialidic, with a distinct collarette or at least a conspicuous periclinal thickening. They produce medianly one-septate, hyaline, straight to slightly curved, fusoid conidia with a pointed tip and a distinct basal scar. *Godronia cassandrae* is a plurivorous species, and several earlier names are available for its anamorph.

**Topospora raduloides** (Sacc. & Scalia) Verkley, comb. nov.

Figs 6-8

*Rhynchophoma raduloides* Sacc. & Scalia, in Saccardo, Peck & Trelease, The Fungi of Alaska. In Trelease & Peck (Ed.), Harriman Alaska Expedition, Volume 5, Cryptogamic Botany: p. 20, Pl. 5, Fig. 17. 1904.

Type – Alaska, Silka, on branches of *Ribes laxiflorum* with *Godronia* '*Urceolo*', Trelease, s.n., 14.VI.1899 (PAD, syntype).

NOTE – The conidiomata in the type received from PAD are well-preserved and a detailed description is given below.

Conidiomata in planta pycnidial, single, occasionally up to three together, erumpent from a basal stroma, cylindrical, lageniform to cornuiform, slightly narrowed at the base, from about the middle attenuated gradually or somewhat abruptly towards a blunt beak, provided with a single, central and well-differentiated ostiolium, black, mostly 1.0-1.5  $\mu\text{m}$  high and 0.3-0.6  $\mu\text{m}$  wide, with a single locule reaching deep into the base. Conidiomatal wall composed of an outer layer of pale brown textura oblita, with pockets of darker intercellular material in the lateral wall and base, and an inner layer of textura epidermoidea with hyaline, thickened walls in the base, and more elongated hyphae with thinner walls in the lateral wall and around the narrow opening. Conidiophores arising from the inner layer of the conidiomatal wall (except around the opening), cylindrical, hyaline, smooth, septate, branched, with acrogenous or acropleurogenous apertures, mostly 20-55  $\times$  1.2-2.5  $\mu\text{m}$ . Conidiogenous cells integrated, determinate, phialidic, cylindrical, often slightly inflated around or above the middle, with a distinct periclinal thickening and collarette, mostly 8-20  $\times$  1.2-2.5  $\mu\text{m}$ . Conidia ellipsoid, rounded at both ends, medianly 1-euseptate, (7.5-)8.2-9.5(-10.2)  $\times$  (2.2-)2.4-2.8(-3.0)  $\mu\text{m}$  (NT), 'pale rose' in mass (fresh; Saccardo & Scalia, l.c.). Microconidia not observed.

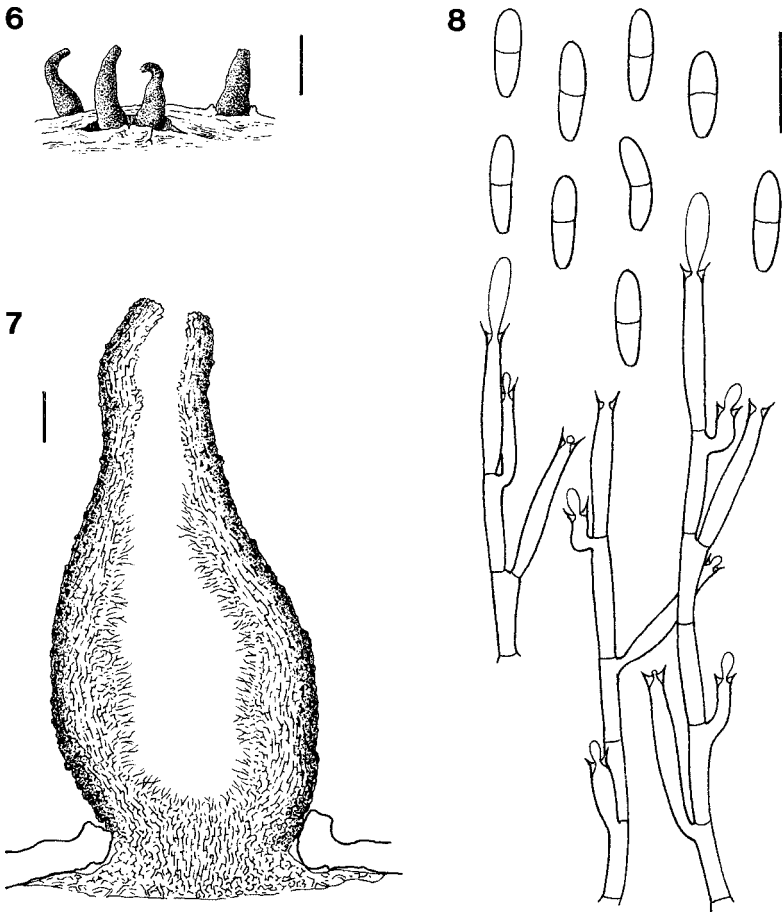


Fig. 6-8. *Rhynchophoma raduloides* (PAD, syntype). 6. Habit of conidiomata (bar = 500  $\mu$ m). 7. Transverse section of conidioma (bar = 100  $\mu$ m). 8. Conidiophores and conidia (bar = 10  $\mu$ m).

On the basis of the structure of the pycnidial wall, the well-developed ostiolum, and conidiogenesis, *Rhynchophoma raduloides* belongs in *Topospora* Fr. According to Sutton (1980), conidia are 3-euseptate in *Topospora*, but I see no reason to exclude species with two-celled conidia that are otherwise very similar in morphology.

In the type material, *T. raduloides* is accompanied by apothecia of a species of *Godronia*. This is most likely its teleomorph, as the outer walls of the apothecia have the same anatomy as the pycnidial walls, and the stromata on which both morphs are seated seem to be continuous. But in order to confirm this, culture work is necessary. *Topospora raduloides* differs clearly from any of the known anamorphs of *Godronia* spp. on *Ribes* or other hosts. Groves (1965) monographed *Godronia* and accepted 24 species in the genus, two of which have a topospora-like anamorph, viz. *G. confertus*

(Hone) J.W. Grov. (anamorph unnamed), on *Prunus* spp., and *G. uberiformis* J.W. Grov., on *Ribes* spp., anamorph *Topospora uberiformis* (Fr.: Fr.) Fr., the type species of the genus *Topospora*. The fungus from *Prunus* differs from *T. raduloides* by much larger conidia that are greenish in mass (Groves 1965). *Topospora uberiformis* also has larger conidia (15-20 × 2.5-4.0 µm, fide Groves 1965; 17-22 × 3-3.5 µm, fide Sutton 1980) which become 3-4-septate.

*Sphaerographiumseriatum* (Berk. & M.A. Curtis) Sacc., Syll. Fung. 3: 598. 1884 ≡ *Sphaeronaema seriatum* Berk. & M.A. Curtis, Grevillea 2: 178. 1874.

Type – U.S.A., Massachusetts, on *Betula* sp., C.J. Sprague 4896 (K, 4898, paratype?) = *Gelatinosporium betulinum* Peck; teleom. *Durandiella seriata* (Fr.: Fr.) J.W. Grov.

NOTE – Jaczewski (1898) accepted this name under *Sphaeronema*. Von Höhnel (1915b), however, had already suggested that this species belongs in *Gelatinosporium* Peck, while Groves (1954) listed *Sphaeronaema seriatum* under names for the anamorph of *Durandiella seriata* (Fr.: Fr.) J.W. Grov. Original material appears to have remained unstudied thus far. No date is indicated on the sheet received from K, on which is written ‘*Sphaeronema seriatum*, B & C 4898 in *Betula*, Massachusetts, C.J. Sprague’, and a minute drawing in pencil was made of the conidiomatal wall and conidia. The number ‘4898’ differs from the one cited after the diagnosis, and it is unclear whether this material represents paratype material, or that the number was just wrongly printed. The material received from K contains several well-developed fruitbodies, which can be identified as anamorphic *Durandiella seriata*, for which *Gelatinosporium betulinum* is the correct name (Groves 1954; DiCosmo 1978).

*Sphaerographiumstellatum* (Ellis) Sacc., Syll. Fung. 3: 598. 1884 ≡ *Sphaeronaemastellatum* Ellis, Bull. Torrey Bot. Club 6: 107. 1876 ≡ *Micropera stellata* (Ellis) Jacz., Nouv. Mém. Soc. Imp. Nat. Moscou 15: 366. 1898.

Type – U.S.A., New Jersey, Gloucester Co., Newfield, on dead stems of *Ilex glabra*, J.B. Ellis s.n., 20.V.1875, also distributed in Ellis & Everh., N. Amer. Fungi second ser., 2170 (NY, with handwritten notes) = *Dermea peckiana* (Rehm) J.W. Grov.

NOTE – Apart from well-developed conidiomata, the lectotype also contains a few apothecia of *Dermea peckiana* (Rehm) J.W. Grov. Groves (1946) demonstrated by culture work that this is the teleomorph. According to this author, *Micropera stellata* is the correct name for the anamorph, and *Micropera nemopanthis* Peck is an additional synonym. Sutton (1980) followed DiCosmo, who placed *Micropera* Lév. in the synonymy of *Foveostroma* DiCosmo, but at the same time also pointed out that *Micula* Duby could possibly have priority. Pending the definitive assessment of that generic name, no formal combinations are proposed. This species also occurs on *Nemopanthus* (Groves 1937, 1946).

ADDITIONAL MATERIAL EXAMINED. U.S.A., New Jersey, Gloucester Co., Newfield, on *Ilex glabra*, J.B. Ellis s.n., 6.X.1875 (NY).

*Sphaeronaematrachelium* Lév., Ann. Sci. Nat., Bot., Sér. 3, 5: 280. 1846 ≡ *Rhynchophomatrachelia* (Lév.) Sacc., Syll. Fung. 3: 414. 1884 ≡ *Cytospora trachelia* (Lév.) Jacz., Nouv. Mem. Soc. Imp. Nat. Moscou 15: 360. 1898.

NOTE – In the original diagnosis, Lévillé (l.c.) briefly described the spores as very small, ovate, and two-celled. Jaczewski (1898) investigated original material in Paris and described the typical Valsoid anatomy of the fruitbodies, and the spores as ovoid, inequilateral, subhyaline (brownish in mass) and unicellular, 5-6 × 1.5-2 µm. He concluded that it was a member of the anamorph genus *Cytospora* (*Valsaceae*), and made the necessary combination.

*Sphaerographiumhystricinum* var. *viburni* Dearness & House, Bull. New York St. Mus. 197: 35. 1917.

Type – U.S.A., New York, Babylon, Long Isl., on stems of *Viburnum cassinoides*, H.D. House s.n., 20.IV.1916 (NYS, ‘type’) = *Corniculariella hystricina* (Ellis) DiCosmo.

NOTE – Groves (1940, 1946) already listed the name as a synonym of *Sphaeronaemahystricinum* (= *Corniculariellahystricina*), the anamorph of *Dermatea viburni*. He did not mention having seen the type. After examining the material, I agree with Groves on its identity.

### Further inapplicable names

No original material of the following names could be obtained. On the basis of the available description, none can be regarded as a possible threat to any names of the accepted species in *Sphaerographium*.

*Sphaerographium abditum* Sacc. & Scalia, in Saccardo, Peck & Trelease, The Fungi of Alaska. In Trelease & Peck (Ed.), Harriman Alaska Series, Volume 5, Cryptogamic Botany: p. 18, Pl. 6, Fig. 27. 1910 (1904).

Type – U.S.A., Alaska, Kodiak, within dead stems of *Heracleum* sp., associated with *Leptosphaeria doliolum*, Trelease 737, s. dat. (not in PAD).

NOTE – The spores described as aseptate and  $50-72 \times 1-1.5 \mu\text{m}$ , place it outside *Sphaerographium*

*Sphaerographium anomalum* Sousa Da Câmara & A.T. Vasconc., Agron. Lusit. 14: 256. 1952.

Type – Portugal, near Sacavém, on *Lonicera implexa*, T. de Vasconcelos, s.n., 1951 (not in LISE, according to Dr M.C. Lopes probably lost).

*Sphaerographium coluteae* Richon, Cat. Champ. Marne: 390. 1889 [depicted in Richon, 1896].

Type – France, Dép. Marne, gardens at St. Amand, on young branches of *Colutea arborescens*, winter (not available; location of deposition unknown).

NOTE – No description, diagnosis or type material could be traced, only a drawing of two spores in Richon (1896, p. 109, Fig. 8), which are cylindrical, curved, aseptate and, according to the figure caption,  $25 \mu\text{m}$  long and hyaline.

*Sphaerographium coryli* Richon, Cat. Champ. Marne: 390. 1889 [depicted in Richon, 1896].

Type – France, Dép. Marne, gardens at St. Amand, on *Corylus avellana* (not available; location of deposition unknown).

NOTE – In Trotter (1972: 1176), it is indicated that this name could be a synonym of *Coronium umbrinum* Bonorden (*Fusicoccum umbrinum* (Bonorden) Berl. & Vogl.). It could indeed be the anamorph of a member of the Botryosphaeriaceae.

*Sphaerographium echinatum* (Berk. & M.A. Curtis) Sacc., Syll. Fung. 3: 597. 1884  $\equiv$  *Sphaeronaema echinatum* Berk. & M.A. Curtis, in Berkeley, Grevillea 2: 84. 1873.

Type – U.S.A., Mountains of New York, on twigs of *Rhododendron* sp., no. 4464 (not in K, L, CUP).

NOTE – Jaczewski (1898) did not see original material either, and listed it with some hesitation among his *Sphaeronaema* spp.

*Rhynchophoma fulica* O. Rostrup, Dansk Bot. Arkiv 2, (5): 30. 1916 (Fig. 17).

Type – Denmark, on pyxides and seeds of *Plantago lanceolata*, S. Vedbaek (not in C).

NOTE – The description and the drawing presented by Rostrup suggest teleomorph material of a *Plagiostoma* sp. (Valsaceae), rather than a conidial fungus.

*Sphaerographium lantanae* Died., Kryptogamenfl. Mark Brandenburg 9: 539. 1915 (Fig. 30, p. 432) ≡ *Cryptorhynchella lantanae* (Died.) Höhn., Sitzungsber. Kaiserl. Akad. Wiss. Wien, Math.-naturw. Cl., Abt. 1, 124: 88. 1915.

Type – Germany, Thüringen, Arnstadt, on withering leaves of *Viburnum lantana*, H. Diedicke, s.n., V.1907 (not in B, JE).

NOTE – Von Höhnel (1915a) studied Diedicke's original material and erected the genus *Cryptorhynchella* for this species. Ainsworth & Bisby (1971), and later also Sutton (1977, 1980) considered this generic name as a possible synonym of *Sphaerographium*. I am of a similar opinion, even though the original material could not be located. Dr Zündorf of Herbarium Hausknecht kindly informed me that there is an empty envelope labeled '*Sphaerographium lantanae* Died., auf *Viburnum lantana*, Arnstadt (Thür.) 19.V.07 Leg. Diedicke' among the collections of the Herbarium H. Diedicke deposited in JE, which perhaps once contained type material. It could be anamorphic *Durandiella viburnicola* (Seaver) J.W. Grov. or *Dermea viburni* J.W. Grov.

*Rhynchophoma lapsanae* Gucevicz, Nov. Sist. Niz. Rast. 11: 180. 1974 [as '*lampsanae*'].

Type – U.S.S.R., Tauria, Hortus Botanicus Nikitensis, on *Lapsana communis*, S.A. Gucevicz, s.n., 1946 (not seen).

NOTE – As shown in the illustration by Gucevicz (l.c.), only the long rostrum breaks through the host tissue, which excludes it from *Sphaerographium*.

*Sphaerographium lignicola* Naumov, J. Petrograd Agron. Inst. 2: 68. 1920 [as '*lignicolum*'].

Type – Russia, on dead wood of *Picea excelsa* (= *P. abies*), associated with *Ceratostomella defectiva* Naumov (not seen).

NOTE – The description indicates a teleomorph of Ophiostomataceae, rather than *Sphaerographium*.

*Rhynchophoma platani* Berl. & Roum., Rev. Myc. Toulouse 9 (36): 163. 1887.

Type – Portugal, near Coimbra, on dead, decorticated wood of *Platanus* sp., 'Winter 1886' (not seen).

NOTE – According to the diagnosis given by Berlese & Roumeguère (1887), this fungus forms immersed fruitbodies with a globose basal part and a long and slender rostrum (3 to 4 times the diameter of the base), and brownish, medianly 1-septate spores, 8-10 × 4-6 µm. These features exclude the name from *Sphaerographium*.

*Rhynchophoma retroflexa* Georgescu & Badea, Analele Inst. Cercet. Exp. Forest. (1935-1936), Ser. 1, 2: 58. 1937.

Type – Romania, on cones of *Picea excelsa* (not seen).

Note – No diagnosis or material could be obtained.

*Sphaerographium syringae* Richon, Cat. Champ. Marne: 390. 1889.

Type – France, dép. Marne, gardens at St. Amand, on twigs of *Syringa vulgaris*, winter (not available).

Note – Richon described this fungus as follows: fruitbodies spherical, diplodia-like, spores aculeiform, formed from equally long conidiophores united in fascicles. According to Richon (1896), these spores are aseptate, hyaline and 25 µm long (and probably only 3 µm wide).



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## References

- AINSWORTH, G.C. & G.R. BISBY (1971): Dictionary of fungi. Ed. 6. - Commonwealth Mycological Institute, Kew.
- BERLESE, A.N. & C. ROUMEGUÈRE (1887): Contributiones ad Floram mycologicam Lusitaniae. - Rev. Mycol. Toulouse **9** (36): 161-165.
- COOKE, M.C. (1878): Ravenel's American fungi. - Grevillea **7**: 32-35.
- DEARNESS, J. & H.D. HOUSE (1925): New or noteworthy species of fungi. IV. - Bull. New York St. Mus. **266**: 57-98.
- DICOSMO, F. (1978): A revision of *Corniculariella*. - Canad. J. Bot. **56**: 1665-1690.
- FROIDEVAUX, L. (1972): Contribution à l'étude des Dothioracées (Ascomycètes). - Nova Hedwigia **23**: 679-734.
- FUCKEL, K.W.G.L. (1870): Symbolae mycologicae. Beiträge zur Kenntnis der rheinischen Pilze. - Jahrb. Nassauischen Vereins Naturk. **23-24**: 1-459.
- FUCKEL, K.W.G.L. (1871): Symbolae mycologicae. Nachtrag 1. - Jahrb. Nassauischen Vereins Naturk. **25-26**: 287-346.
- GROVES, J.W. (1937): Three Dermateaceae occurring on *Nemopanthus*. - Mycologia **29**: 66-80.
- GROVES, J.W. (1940): Some *Dermatea* species and their conidial states. - Mycologia **32**: 736-751.
- GROVES, J.W. (1946): North American species of *Dermea*. - Mycologia **38**: 351-431.
- GROVES, J.W. (1947): *Pezizula morthieri* on *Rhamnus*. - Mycologia **39**: 328-333.
- GROVES, J.W. (1954): The genus *Durandiella*. - Canad. J. Bot. **32**: 116-144.
- GROVES, J.W. (1965): The genus *Godronia*. - Canad. J. Bot. **43**: 1195-1276.
- HÖHNEL, F. von (1915a): Fragmente zur Mykologie no. 903. Über *Sphaerographium lantanae* Diedicke. - Sitzungsber. Kaiserl. Akad. Wiss. Wien, Math.-naturw. Cl., Abt. 1, **124**: 87-88.
- HÖHNEL, F. von (1915b): Fragmente zur Mykologie no. 912. Über *Sphaerographium Saccardo*. - Sitzungsber. Kaiserl. Akad. Wiss. Wien, Math.-naturw. Cl., Abt. 1, **124**: 100-103.
- HÖHNEL, F. von (1915c): Fragmente zur Mykologie no. 921. Über die Gattung *Pseudographium* Jaczewski. - Sitzungsber. Kaiserl. Akad. Wiss. Wien, Math.-naturw. Cl., Abt. 1, **124**: 115-118.
- HOLMGREN, P.K., N. HOLMGREN & L.C. BARNETT (1990): Index herbariorum Part 1: The herbaria of the world. Eighth ed. - New York Bot. Garden, New York.
- JACZEWSKI, A. (1898): Monographie du genre *Sphaeronaema* Fries. - Nouv. Mém. Soc. Imp. Nat. Moscou **15**: 278-386.
- KARSTEN, P.A. (1884): Fragmenta mycologica. IX. - Hedwigia **23**: 18-20.
- KARSTEN, P.A. (1905): Fungi novi nonnullis exceptis in fennia lecti. - Acta Soc. Fauna Fl. Fenn. **27**, (4): 1-16.
- MILLSPAUGH, C.F. & L.W. NUTTALL (1923): Flora of Santa Catalina Island. - Publ. Field Mus. Nat. Hist., Bot. Ser. 5, no. **212**: 314-357.

PETRAK, F. (1953): Ergebnisse einer Revision der Grundtypen verschiedener Gattungen von Askomyzeten und Fungi Imperfecti IV. - *Sydowia* **7**: 295-308.

PETRAK, F. & H. SYDOW (1923): Kritisch-systematische Originaluntersuchungen über Pyrenomyzeten, Sphaeropsideen und Melanconieen. - *Ann. Mycol.* **21**: 349-384.

RICHON, C. (1889): Catalogue raisonné des champignons qui croissent dans le Département de la Marne. - Société des Sciences et Arts, Vitry, France.

RICHON, C. (1896): Les stations naturelles des champignons et leurs spores. - Société des Sciences et Arts, Vitry, France.

SACCARDO, P.A. (1884): *Sylloge fungorum omnium hucusque cognitorum*. Vol 3. - Padua.

SYDOW, H. & P. SYDOW (1913): *Novae fungorum species IX*. - *Ann. Mycol.* **11**: 54-65.

SUTTON, B.C. (1977): *Coelomycetes 6. Nomenclature of generic names proposed for coelomycetes*. - *Mycol. Pap.* **141**: 1-253.

SUTTON, B.C. (1980): *The Coelomycetes. Fungi imperfecti with pycnidia, acervuli and stromata*. - Commonwealth Mycological Institute, Kew, UK.

TROTTER, A. (1972): *Sylloge fungorum omnium hucusque cognitorum*. Vol 26. - New York, London.

VERKLEY, G.J.M. (1999): A monograph of the genus *Pezicula* and its anamorphs. - *Stud. Mycol.* **44**: 1-180.

VERKLEY, G.J.M. (2001): On *Sphaerographium petiolicola* and a new species, *S. tenuirostrum*, taxa from a rarely collected genus of coelomycetes. - *Mycologia* **93**: 205-211.

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