

= *Eurotium insigne* G. Winter, in Rabenh., Fungi Europaei no. 1732, 1874

= *Lysipenicillium insigne* Bref., Unters. Gesamtgeb. Mykol. 14: 210, 1908.

= *Lilliputia insignis* (G. Winter) Dennis & Wakefield, Trans. Brit. Mycol. Soc. 29: 145, 1946.

= *Roumegueriella muricospora* Speg., in Roumeguère & Spegazzini, Rev. Mycol. (Toulouse) 2: 18, 1880.

= *Cephalotheca francisci* D. Sacc., Malpighia 12: 206, 1898.

= *Lilliputia gaillardii* Boud. & Pat., Bull. Soc. Mycol. France 14: 144, 1900.

= *Mycogala macrospora* Jaap, Verh. Bot. Ver. Brandenb. 52: 19, 1910.

= *Gliocladium prolificum* Bainier, Bull. Trimestriel Soc. Mycol. France 26: 385, 1910.

= *Gliocladium borysseviczii* Pidopl., Mikrobiol. Zhurn. 12(2): 36, 1950 (also Gribnaya Fl. grub. Kormov: 197, 1953).

Anamorph: *Gliocladium*-like.

Ascomata superficial, without a stroma, solitary or in groups of 2–3, irregularly globose, 450–640 µm diam, dark yellow to reddish brown, non-ostiolate; ascomatal wall thin, of indistinct cells, becoming brittle and breaking down at maturity to expose the ascospores. Interthecial elements lacking. Asci irregularly saccate, 46–66 × 24–35 µm, evanescent at maturity. Ascospores globose, 16–23 µm diam, hyaline, smooth when young, becoming densely echinulate.

HABITAT.— On various kinds of detritus including goose dung, damp paper, mushroom compost, nematodes, decaying seaweed, and rotting grass clippings.

DISTRIBUTION.— Belgium, England, France, Germany, India, Ireland, Japan (Udagawa *et al.*, 1994), Mexico, Taiwan (Yaguchi *et al.*, 1997), United States (California, Maine).

TYPES.— GERMANY. 'Auf Gänsemist in meinem Pilz-Cultur-Kasten. Halle a/S. im Juli 1873', Rabenhorst, Fungi Europaei no. 1732 (BPI, isotype of *Eurotium insigne*, none with good ascomata); Schleswig-Holstein: Reinbek bei Bergedorf, 'auf abgeschnittenem, faulendem Gras, 25 X. 1908, leg. Otto Jaap,' Jaap, Fungi Selecti Exs. no. 3961 (BPI, isotype of *Mycogala macrospora*). BELGIUM. Malmedy, 'in foliis et ramentis dejectis putrescentibus prope Malmedyanum et recentissime, aut. 1879, proxime Toloxam lectis' (isotype of *Roumegueriella muricospora*, not seen). FRANCE. Angers, 'dans la tannée ancienne d'une serre à Palmiers, inter frustulis caldario Andegavensi, Aprili 1900,' Revisio Reliquiae Libertianae (FH – Patouillard 4575, holotype of *Lilliputia gaillardii*).

ADDITIONAL SPECIMENS EXAMINED.— IRELAND. Rathmines Co., Dublin, on [herbivore] dung, 23 May 1935, S.W. Webb (BPI, as *Mycogala macrospora*). SWITZERLAND. Isolated from female *Globodera rostochiensis* buried in soil (CBS 346.85).

ILLUSTRATIONS.— Bainier (1910, Pl. 21, anamorph only); Brefeld (1912, Taf. VII, Figs. 1–7, as *Lysipenicillium insigne*); Hughes (1951, Fig. 12, as *Lilliputia rufula*; Pl. I, Fig.

5–9, as *Chaetomium rufulum*, *Cephalotheca francisci*, *Eurotium insigne*, *Gliocladium prolificum*, and *Lilliputia gaillardii*); Rabenhorst (1874, as *E. insigne*); Udagawa *et al.* (1994, Fig. G).

NOTES.— Hughes (1951) and Malloch & Cain (1972) accounted for the various synonyms of *Roumegueriella rufula*. Hughes (1951) illustrated the variability in ascospore size and presented a detailed account of the specimens of the fungus known up to that time. The anamorph was described in detail by Bainier (1910) as *Gliocladium prolificum*.

A second species was described in *Roumegueriella* as *R. pulchella* Udagawa *et al.* (1994). Although similar to *R. rufula*, *R. pulchella* is differentiated by the small, ellipsoid ascospores, 6.5–8 × 4–5 µm, and the lack of an anamorph.

SELINIA P. Karst., Meddeland. Soc. Fauna Fl. Fenn. 1: 57, 1876

[= *Hypocreopsis* G. Winter, Hedwigia 14: 26, 1875, non P. Karst. 1873]. — Type: *S. pulchra* (G. Winter) P. Karst. = *Hypocreopsis pulchra* G. Winter.

= *Winteria* Sacc., Michelia 1: 281, 1878. Type: *Winteria pulchra* '(G. Winter)' Sacc., a nomenclatural synonym of *S. pulchra* (G. Winter) P. Karst.

= *Seliniana* O. Kuntze, Revis. Gen. Pl. 2: 869, 1891. — Type: *Seliniana pulchra* '(G. Winter)' O. Kuntze, a nomenclatural synonym of *S. pulchra* P. Karst.

Ascomata immersed in stromata, up to five immersed in each stroma, stromata of two parts, external part reddish-brown, of non-descript, small, heavily pigmented cells, internal tissue of *textura epidermoidea*, thin-walled. Ascomata becoming crumpled, ostiolate, with a white, granular opening. Asci clavate, 8-spored. Ascospores ellipsoid, unicellular, hyaline, thick-walled, smooth. Anamorph phialidic. On dung.

NOTES.— *Selinia* was described as a new name for *Hypocreopsis* G. Winter 1875, a later homonym of *Hypocreopsis* P. Karst. 1873. Winter considered his new genus to be similar to *Hypocrea* but differentiated by the few ascomata in each stroma, the distinct form of the asci and ascospores, and the presence of numerous paraphyses. Although paraphyses are described, they were not seen in the specimens examined of *S. pulchra*. Despite the soft-textured, light to bright-colored ascomata, several characteristics of the genus *Selinia* are unusual for members of the *Hypocreales*, specifically the thick-walled ascospores with nerve-like markings

Plate 14. a–f. *Selinia pulchra*. a. Ascomata on natural substratum. b. Median section of ascomata. c. Section of stroma surrounding ascomata. d. Close-up of ascomatal apex. e. Asci with ascospores. f. Asci with ascospores in fluorescence microscopy. a–f. F 48-978 – FLAS. Scale bars: a, b = 500 µm; c, e, f = 50 µm; d = 100 µm.

on the inner wall and gelatinous epispore and occurrence on dung. In addition to *Selinia pulchra*, three other species are accepted in the genus as discussed by Khan & Krug (1989).

***Selinia pulchra*** (G. Winter) P. Karst., Meddeland. Soc. Fauna Fl. Fenn. 1: 57. 1876. — Plate 14, a–f.

[= *Hypocreopsis pulchra* G. Winter, Hedwigia 14: 26. 1875, non *Hypocreopsis* P. Karst. 1873].

= *Winteria pulchra* (G. Winter) Sacc., Michelia 1: 281. 1878.

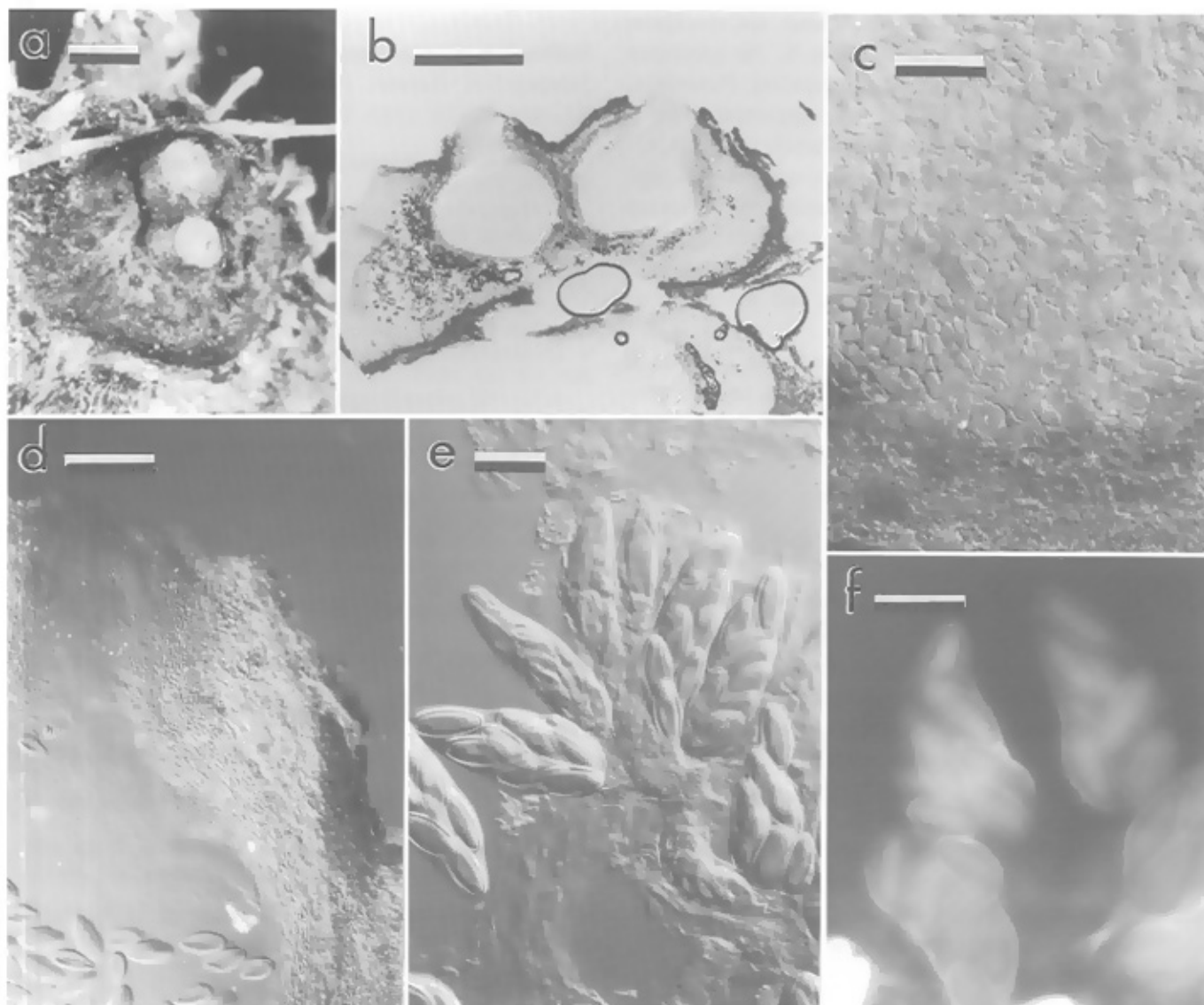
= *Seliniana pulchra* (G. Winter) O. Kuntze, Revis. Gen. Pl. 2: 869. 1891.

Stroma evident as small, less than 1 mm diam, amorphous, tar-like, blackened areas scattered on the substratum, consisting of two parts, external part rufous, ca 50  $\mu\text{m}$  thick, of non-descript, small, heavily pigmented cells, several cell-layers thick; internal tissue *textura epidermoidea*, cells 7–10  $\mu\text{m}$  diam, thin-walled, compact; ascomatal wall ca 40  $\mu\text{m}$  thick, of about 10

layers of fusiform to rectangular cells, 15–20  $\mu\text{m}$  long  $\times$  4–7  $\mu\text{m}$  diam, walls 1.5–2.5  $\mu\text{m}$  thick, hyaline; merging at the exterior with the surrounding stroma. Ascomata immersed in stroma, evident as a white, granular margin around the ostiolar opening, up to five ascomata in each stroma, apex protruding, venter remaining immersed in the stroma; papilla of vertically elongate cells, becoming progressively narrower toward the ostiolar canal, periphyses arising from and merging with elements of the papilla. Paraphyses not seen among the mature asci. Asci clavate, apex simple, 8-spored. Ascospores ellipsoid, 45–56(–60)  $\times$  20–24  $\mu\text{m}$ , hyaline, smooth.

**HABITAT.**— On dung of herbivores including cow, deer, hare, horse, opossum, and sheep.

**DISTRIBUTION.**— Argentina (Ranalli & Mercuri, 1995), Canada (Ontario); Chile (Udagawa, 1980), Denmark (Læssøe, 1995), Germany, Netherlands (von Arx & Müller, 1955; Larsen, 1971), Japan (Udagawa, 1980), New Zealand (Bell, 1975, 1983), United States (Florida, Maine).



KEY TO THE SPECIES OF *SELINIA*

1. Ascospores more than 45  $\mu\text{m}$  long ..... 2  
 1. Ascospores less than 45  $\mu\text{m}$  long ..... 3
2. Ascospores 45–50  $\times$  20–25  $\mu\text{m}$  ..... *S. intermedia*  
 2. Ascospores 48–64  $\times$  20–26  $\mu\text{m}$  ..... *S. pulchra*
3. Ascospores 25–30  $\times$  12–13  $\mu\text{m}$  ..... *S. antarctica*  
 3. Ascospores (26–)32–39(–41)  $\times$  (12–)14–18(–22)  $\mu\text{m}$  ..... *S. africana*

TYPE.— ENGLAND: Shrewsbury, on sheep dung, W. Phillips, G. Winter, issued as C.B. Plowright, Sphaeriacei Britannici 100 (B – authentic specimen of *Hypocreopsis pulchra*).

SPECIMEN EXAMINED.— UNITED STATES: Florida, off Mill-hopper Road, 10 mi. NW of Gainesville, on cow dung in pasture, 7 May 1970, J.W. Kimbrough (FLAS-F 48-978).

ILLUSTRATIONS.— von Arx & Müller (1955, Figs. 1, 2); Bell (1983, Fig. 35), Dennis (1978, Pl. 31D); Læssøe (1995, p. 52–53); Udagawa (1980, Figs. 8, 21).

NOTES.— According to the original description, the type specimen of *Selinia pulchra* was found 'auf trockenem Schafkoth am Galgenberg bei Halle a. S.' No specimen agreeing with these data has been located. Plowright, Sphaeriacei Britannici no. 100 was apparently examined by Winter and is considered authentic material. Although unusual in having large, thick-walled, non-septate ascospores, developmental studies by Mercuri (pers. comm.) revealed the presence of apical paraphyses characteristic of hypocrealean fungi. Ranalli & Mercuri (1995) report an anamorph and were able to produce fertile ascomata in culture.

Three additional species are included in *Selinia*, *S. africana* Khan & Krug, *S. antarctica* Speg., and *S. intermedia* Speg., as reviewed by Khan & Krug (1989). *Selinia intermedia* may be a synonym of *S. pulchra*.

**STILBOCREA** [*'Stilbocera'*] Pat., Bull. Soc. Mycol. France 16: 186. 1900.

Type: *S. dussii* Pat., a synonym of *S. macrostoma* (Berk. & M.A. Curtis) Höhn.

Ascomata immersed in a hyphal stroma that forms a continuous or discontinuous layer. Ascomata globose to ellipsoid or ovoid, pale yellow to orange, becoming red-brown or dark olive-green with age. KOH–, walls relatively thick, more than 25  $\mu\text{m}$ . Asci narrowly clavate to cylindrical, 8-spored. Ascospores ellipsoid to ellipsoid-fusiform, 1-septate, hyaline, verrucose, echinulate or conspicuously spinulose. Anamorph *Acremonium*-like or *Stilbella*. On dead woody dicotyledonous and monocotyledonous substrata as well as decaying ascomycetous stromata.

NOTES.— Patouillard described the genus *Stilbocrea* as being like *Hypocrea* but having a *Stilbum* anamorph and he included one species. Seifert (1985) studied the type specimens of *Stilbocrea dussii* and found *Nectria macrostoma* to be an earlier name. The genus *Stilbocrea* includes two additional species, namely *S. gracilipes*, with an even more darkly pigmented synnematal base than the dark green one of *S. macrostoma*, and *S. impressa*, with an *Acremonium*-like anamorph.

***Stilbocrea macrostoma*** (Berk. & M.A. Curtis) Höhn., Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl., Abt. 1, 118: 1185. 1909. — Plate 4, d (see page 25).

≡ *Nectria macrostoma* Berk. & M.A. Curtis, J. Linn. Soc., Bot. 10: 378. 1868.

≡ *Hypocreopsis macrostoma* (Berk. & M.A. Curtis) E. Müll., Beitr. Kryptogamenfl. Schweiz 11(2): 650. 1962.

= *Hypocrea corticioides* Berk. & Broome, J. Linn. Soc. Bot. 14: 111. 1873.

≡ *Clintoniella corticioides* (Berk. & Broome) Petch, Ann. Roy. Bot. Gard. (Peradeniya) 8: 134. 1920.

= *Sphaerostilbe variabilis* Berk. & Broome, J. Linn. Soc., Bot. 14: 115. 1875.

≡ *Nectria grisea* Dingley, Trans. Roy. Soc. New Zealand 79: 180. 1951.

= *Sphaerostilbe hypocreoides* Kalchbr. & Cooke, Grevillea 9: 26. 1880.

≡ *Stilbocrea hypocreoides* (Kalchbr. & Cooke) Seaver, Mycologia 2: 62. 1910.

= *Hypocrea carteri* Berk. & Broome, Grevillea 12: 79. 1883.

≡ *Hypocreopsis carteri* (Berk. & Broome) Sacc., Syll. Fung. 9: 981. 1891.

= *Stilbocrea dussii* Pat., Bull. Soc. Mycol. France 16: 186. 1900.

= *Sphaerostilbe henningsii* Ferd. & Winge, Bot. Tidsskr. 29: 12. 1908.

[≡ *Sphaerostilbe hypocreoides* Hennings, Hedwigia 41: 4. 1902. non Kalchbr. & Cooke 1880].

= *Sphaerostilbe intermedia* Ferd. & Winge, Bot. Tidsskr. 29: 12. 1908.

≡ *Stilbocrea intermedia* (Ferd. & Winge) Seaver, Mycologia 2: 63. 1910.

= *Sphaerostilbe placenta* Theissen, Ann. Mycol. 9: 55. 1911.

= *Stilbocrea jenkiana* [sic] Viégas, Bragantia 4: 97. 1944.

Anamorph: *Stilbella aleuriata* (Berk. & M.A. Curtis)

Seifert, Stud. Mycol. 27: 54. 1985.