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## Records of microfungi from Crete

### Abstract

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37 species of microfungi are reported from Crete, of which 36 are new records for the island. Two new species, *Ascochyta cretensis* and *Selenophoma anniae*, are described from *Foeniculum vulgare*. Two new combinations are proposed, *Truncatella helichrysi* and *Phomopsis brunaudiana*.

### Introduction

Although Pantidou (1973) has compiled an index to the fungi recorded from Greece and Diamandis (1992) has produced a colour atlas of the larger mainland species, the only major contribution to our knowledge on the microfungi of Crete is by Petrak (1944). He reported 142 species of ascomycetes, rusts, smuts, polypores, gasteromycetes and imperfect fungi (mitosporic fungi) from the island, of which 16 were newly described taxa. A single new generic name was introduced, *Xerodiscus* (*Ascomycotina*). In the mitosporic fungi he listed 44 species of which 10 were newly described.

The collections listed below were made during a brief visit to Crete in 1992. Apart from *Coleophoma oleae* the records are additions to the list of taxa given by Petrak (1944).

### Ascomycetes

*Botryosphaeria ribis* Grossenb. & Duggar in New York Agric. Exp. Sta. Techn. Bull. 18: 183. 1911.

Greece, Crete, Sitia, Stavrochori, 15 Jul 1992, on dead twigs of *Ceratonia siliqua*, B. C. Sutton & A. V. Sutton (IMI 354138d). The *Fusicoccum* anamorph was only found to be present.

A widespread species found in temperate and tropical regions, often associated with disease conditions (Punithalingam & Holliday 1973). Pantidou (1973) records several species of *Botryosphaeria* from Greece, but not this one.

*Elsinoë veneta* (Burkh.) Jenkins in J. Agric. Res. 44: 696. 1932.

Greece, Crete, Sitia, Stavrochori, 15 Jul 1992, on leaves of *Rubus* sp., B. C. Sutton & A. V. Sutton (IMI 354114).

The *Sphaceloma necator* (Ellis & Everh.) Jenkins & Shear anamorph was only present. The fungus is widespread, especially in cooler temperate areas of N. America, W. Europe and Australia, where it is associated with cane spot or anthracnose of raspberry (Sivanesan & Critchett 1976). It is not listed for Greece by Pantidou (1973).

*Mycomicrothelia inaequalis* (Fabre) D. Hawksw. in Bot. J. Linn. Soc. 82: 55. 1981.

Greece, Crete, Sitia, Toplou Monastery road, 10 Jul 1992, on dead stems of *Thymus* sp., B. C. Sutton & A. V. Sutton (IMI 354163a).

*Phacidium vincae* Fuckel in Jahrb. Nassauischen Vereins Naturk. 1869 : 261. 1869.

Greece, Crete, Sitia, Voila, 18 Jul 1992, on dead leaves of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 3541211).

The *Ceuthospora foliicola* (Lib.) Jaap anamorph was only present. This species has a wide host and geographical distribution according to Nag Raj (1993), which in the Mediterranean region includes Italy.

*Uncinula bicornis* (Wallr.) Lév. in Ann. Sci. Nat., Bot., ser. 3, 15: 153. 1851.

Greece, Crete, Sitia, Maronia, Lithines road, 14 Jul 1992, on living leaves of *Acer sempervirens*, B. C. Sutton & A. V. Sutton (IMI 354162).

This species is recorded on a number of *Acer* spp. in Greece by Pantidou (1973).

### Mitosporic Fungi

*Alternaria tenuissima* (Kunze) Wiltshire in Trans. Brit. Mycol. Soc. 18: 157. 1933.

Greece, Crete, Sitia, Hamezi, 12 Jul 1992, on dead stems of *Malva* sp., B. C. Sutton & A. V. Sutton (IMI 354153); Greece, Crete, Sitia, Voila, 18 Jul 1992, dead stems of *Compositae* indet., B. C. Sutton & A. V. Sutton (IMI 354124).

This is an extremely common species (Ellis 1971), which Critopoulos (1953) records from *Pistacia vera* from Greece.

*Amerosporium concinum* Petr. in Sydowia 7: 68. 1953.

Greece, Crete, Sitia, Toplou Monastery, 10 Jul 1992, on indet. dead herbaceous stems, B. C. Sutton & A. V. Sutton (IMI 354116a); Greece, Crete, Sitia, Epano Episkopi, 14 Jul 1992, on dead stems of *Foeniculum vulgare*, B. C. Sutton & A. V. Sutton (IMI

354161h); Greece, Crete, Sitia, Palekastro beach, 13 Jul 1992, on dead stems of *Cichorium spinosum*, B. C. Sutton & A. V. Sutton (IMI 354151).

*Amerosporium atrum* (Fuckel) Höhn. was recorded from Chania on *Cruciferae* indet. and from Selinos on *Allium ampeloprasum* by Petrak (1944). The species has a conidial size of 10–18  $\mu\text{m} \times 2\text{--}3 \mu\text{m}$ , which compares with 13–15  $\mu\text{m} \times 2.5\text{--}3 \mu\text{m}$  cited for *A. concinnum* by Sutton (1980). *A. concinnum* is the rarer of the known species and hitherto had only been known from *Echinops* in Iran and graminicolous substrata in the U.S.A. and Spain.

*Amerosporium polynematoides* Speg. in *Anales Soc. Ci. Argent.* 13: 20. 1882.

Greece, Crete, Sitia, Azokeramos, 9 Jul 1992, on dead stems of *Sarcopoterium spinosum*, B. C. Sutton & A. V. Sutton (IMI 354152a).

This is a diminutive species, with conidia measuring 9–11  $\mu\text{m} \times 2 \mu\text{m}$ , and according to Sutton (1980) is common on a wide variety of substrata, especially in India and Pakistan. In the Mediterranean region it was previously only known from *Phragmites* in Algeria, based on a collection in herb. IMI.

*Ascochyta cretensis* Sutton, sp. nova (Fig. 1). – Typus: Greece, Crete, Sitia, Epano Episkopi, 14 Jul 1992, in caulibus emortuis *Foeniculi vulgaris*, B. C. Sutton & A. V. Sutton (holotypus: IMI 354161g). – Fig. 1.

Conidiomata caulicola, pycnidialia, pallide brunnea, dispersa, immersa, epidermalia vel subepidermalia, unilocularia, ampulliformia, ad 500  $\mu\text{m}$  diam et 150  $\mu\text{m}$  profunda; parietes distinctae, 7–12 cellulas crassae, textura angulari hyalina, tenuitunicata, parvulicellulari sed circa ostiolum crassitunicata et atrobrunnea. Ostiolum prominens, papillatum, circulare, c. 30  $\mu\text{m}$  diam. Conidiophora desunt. Cellulae conidiogenae discretae, doliiformes vel ampullatae, hyalinae, laeves, loco conidiogeno singulo, ex cellulis interioribus conidiomatum formatae, 6.5–9  $\mu\text{m} \times 4\text{--}6 \mu\text{m}$ . Loci conidiogeni ad apicem tenuitunicati periclinales, canali cytoplasmico lato instructi, crassi, collo carentes. Conidia holoblastica, cylindrica, recta, basim versus abrupte angustata, apice obtusa, hyalina, laevia, minute guttulata, septo singulo mediano euseptata, ad septum non constricta, 19–22  $\mu\text{m} \times 3 \mu\text{m}$ .

Conidiomata caulicolous, pycnidial, pale brown, scattered, immersed, epidermal to subepidermal, unilocular, ampulliform, up to 500  $\mu\text{m}$  diam  $\times$  150  $\mu\text{m}$  deep; wall sharply differentiated from the host tissue, 7–12 cells thick, composed of hyaline, thin-walled, small-celled textura angularis except in the ostiolar region where the cells are thicker-walled and dark brown. Dehiscence by a prominent, papillate, circular ostiole ca 30  $\mu\text{m}$  diam. Conidiophores absent. Conidiogenous cells entirely discrete, doliiform to ampulliform, hyaline, smooth, each with a single conidiogenous locus, formed from the inner cells of the conidiomatal wall, 6.5–9  $\times$  4–6  $\mu\text{m}$ . Conidiogenous loci with a minute periclinal thickening, wide cytoplasmic channel and no collarette. Conidia holoblastic, cylindrical, straight, abruptly tapered at the base, obtuse at the apex, hyaline, smooth, minutely guttulate, medianly 1-euseptate, not constricted at the septum, 19–22  $\mu\text{m} \times 3 \mu\text{m}$ .

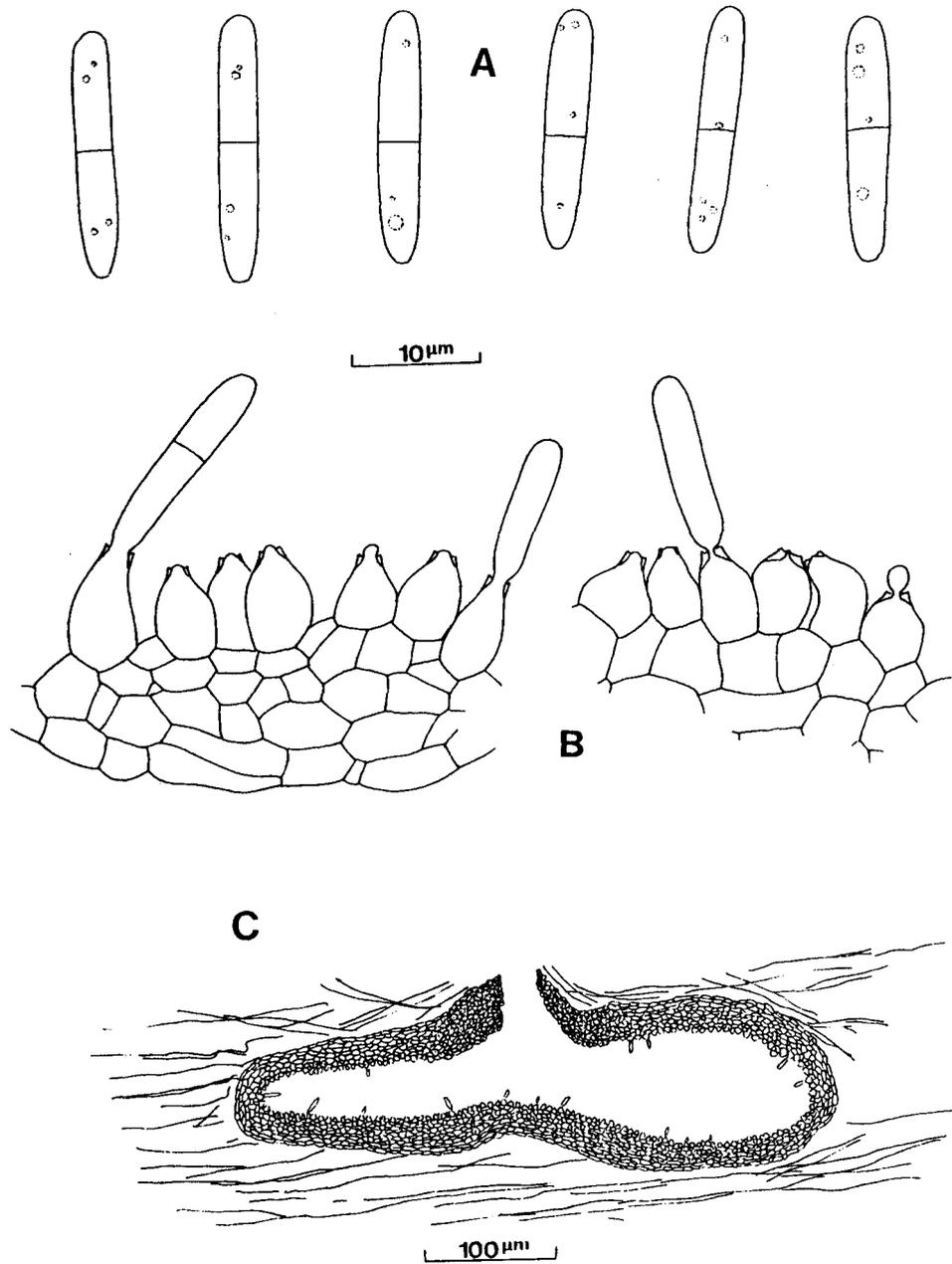


Fig. 1. *Ascochyta cretensis*. – A: conidia; B: parts of conidiomatal wall with conidiogenous cells and developing conidia; C: median vertical section of a conidioma.

The generic placement of this species is problematical. Hyaline 1-euseptate conidia formed from phialides in pycnidial conidiomata place the species in *Ascochyta* Lib. according to the work of Punithalingam (1979, 1988), Mel'nik (1977), and Buchanan (1987). However, the conidiomatal structure is distinctive and quite unlike that normally found in this genus. The comparatively thick pycnidial walls of 7-12 cell layers composed of small-celled hyaline tissue sharply distinct from the host tissues are quite different from the 1-4 cell thick walls of pale brown to brown cells found in *Ascochyta*.

The number of described coelomycete genera with 1-septate conidia in pycnidial conidiomata is large, and for most of them the details of conidiogenesis are still unknown. For this reason it is preferred to describe the species in *Ascochyta* rather than introduce what might later become yet another superfluous generic name when the whole complex is revised using modern criteria.

A review of the literature on coelomycetes with 1-septate conidia in pycnidial conidiomata on *Foeniculum* shows that none have the combination of characters distinguishing *Ascochyta cretensis*. *A. foeniculina* McAlpine has conidia 14-17  $\mu\text{m} \times 6-6.5 \mu\text{m}$  and was described from seeds of *F. vulgare* in Australia, *Diplodina foeniculina* Speg. has conidia 14-18  $\mu\text{m} \times 5-6 \mu\text{m}$  and was described from dead stems of *F. piperitum* in Chile, and *Ascochyta perpusilla*, with pale brown conidia 10-16  $\mu\text{m} \times 5-7 \mu\text{m}$ , was described from dead stems of *F. officinale* from Albania. The conidia in *A. cretensis* are longer and narrower (19-22  $\mu\text{m} \times 3 \mu\text{m}$ ).

***Beltrania querna*** Harkn. in Bull. Calif. Acad. Sci. 1: 39. 1884.

Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, on dead leaves of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 354122a).

***Camarosporium feurichii*** Henn. in Hedwigia 43: 432. 1904.

Greece, Crete, Sitia, Itanos, 11 Jul 1992, on dead inflorescences of *Juncaceae* indet., B. C. Sutton & A. V. Sutton (IMI 354160a).

***Ceratocladium purpureogriseum*** B. Sutton in Mysore J. Agric. Sci. 7: 401. 1973.

Greece, Crete, Sitia, Toplou Monastery, 10 Jul 1992, on indet. dead herbaceous stems, B. C. Sutton & A. V. Sutton (IMI 354116b).

This species was originally described from India. In IMI there are only two collections made from outside India, one from Australia and this from Crete.

***Cirrenalia macrocephala*** (Kohlm.) Meyers & S. P. Moore in Amer. J. Bot. 47: 347. 1960.

Greece, Crete, Sitia, Cape Sidheros, 11 Jul 1992, on dead stems of *Thymus* sp., B. C. Sutton & A. V. Sutton (IMI 345145e).

This is a predominately marine species, hitherto recorded by Kohlmeyer & Kohlmeyer (1979) from the Mediterranean coasts of France, Italy, and Greece. It had not been reported from Crete.

*Coleophoma oleae* (DC.) Petr. & Syd. in Repert. Spec. Nov. Regni Veg. Beih. 42: 469. 1927.

Greece, Crete, Sitia, Toplou Monastery, 10 Jul 1992, on dead leaves of *Olea europea*, B. C. Sutton & A. V. Sutton (IMI 354113).

Petrak (1944) records this species from Crete on not only *Olea europaea*, but also *Arbutus unedo* and *Ceratonia siliqua*. Honrubia & Llimona (1983) reported it from Spain under the name *Macrophoma oleae* (DC.) Berl. & Voglino, and I have collected it in Turkey in 1991. It is common wherever *Olea* is grown in the Mediterranean region.

*Colletotrichum eryngii* (Desm.) Duke in Trans. Brit. Mycol. Soc. 13: 170. 1928.

Greece, Crete, Sitia, Kato Zakros, Zakros Palace, 9 Jul 1992, on dead leaves of *Eryngium creticum*, B. C. Sutton & A. V. Sutton (IMI 354156a); Pakistan, Swat, Khaza Khela, 15 Apr 1954, on *E. coeruleum*, S. Ahmad 9081 (IMI 81100a).

This collection matches material in herb. IMI from Pakistan on *Eryngium coeruleum*, but differs from two other collections on *E. campestre* from Germany and Romania in having significantly shorter, less curved conidia. The collections on *E. campestre* agree with the broadly interpreted species *Colletotrichum dematium* (Pers. : Fr.) Grove and it is suspected that the confusion is similar to that reported between *C. dematium* and *C. trichellum* on *Hedera helix* by Sutton (1962). Duke (1928) regarded the two species to be barely distinct in both morphological and cultural characters and suggested that additional work on strains of *C. eryngii* in culture be made. Pantidou (1973) does not record either species from *Eryngium* in Greece.

*Specimens of C. dematium examined:* Romania, Oltenia, distr. Valcea, Ramnicu Valcea, 22 Apr 1930, on dead stems of *Eryngium campestre*, T. Săvulescu in Herb. Mycol. Rom. 9: N° 406 (IMI 21005); Germany, Unterfranken, Gerolzhafen, Feb 1904, on dead stem of *E. campestre*, A. Vill (IMI).

*Colletotrichum trichellum* (Fr. : Fr.) Duke in Trans. Brit. Mycol. Soc. 13: 173. 1928.

Greece, Crete, Sitia, Voila, 18 Jul 1992, on dead leaves and petioles of *Hedera helix*, B. C. Sutton & A. V. Sutton (IMI 354115b).

Demetriades (1950) recorded both *Colletotrichum trichellum* and *C. hedericola* Laubert from this host, but Arx (1957) regarded them both as synonyms of *C. dematium*. Sutton (1962) demonstrated that *C. trichellum* is a distinct species but the fate of *C. hedericola* remains unresolved. The short, weakly curved conidia of the Cretan collection place it in *C. trichellum*.

*Cryptosporiopsis rostrupii* (Ferd. & C. A. Jørg.) G. Johans. in Dansk Bot. Ark. 13: 11. 1949. – Fig. 2.

Greece, Crete, Sitia, Voila, 18 Jul 1992, on dead twigs of *Fraxinus* sp., B. C. Sutton & A. V. Sutton, 19 Jul 1992 (IMI 354126b).

This collection has irregularly shaped conidia which are quite variable in size, 16.5–38 µm × 5–8 µm. These dimensions and the morphology of the conidia agree with those

given for the species by Johansen (1949). There was no trace of the teleomorph, *Pezizula rostrupii* G. Johans., in the Cretan collection.

*Cytospora chrysosperma* Fr., Syst. Mycol. 2: 542. 1823 : Fr.

Greece, Crete, Sitia, Mirsini, 12 Jul 1992, on dead twigs of *Populus* sp., B. C. Sutton & A. V. Sutton (IMI 354111).

This species is well-documented as a pathogen of poplars in Greece in the compilation by Pantidou (1973), and was reported from Spain by Honrubia & Llimona (1983).

*Cytospora leucostoma* Fr., Syst. Mycol. 2: 387. 1823 : Fr.

Greece, Crete, Sitia, Azokeramos, 9 Jul 1992, on dead stems of *Sarcopoterium spinosum*, B. C. Sutton & A. V. Sutton (IMI 354152b).

This has been recorded from other *Rosaceae* such as *Malus* and *Prunus* from Greece by Pantidou (1973), but not from *Sarcopoterium*.

*Cytospora sacculus* (Schwein.) Gvrit. in Mikol. Fitopatol. 3: 207. 1969.

Greece, Crete, Sitia, Zakros, 9 Jul 1992, on dead twigs of *Ceratonia siliqua*, B. C. Sutton & A. V. Sutton (IMI 354128a); Greece, Crete, Sitia, Stavrochori, 15 Jul 1992, B. C. Sutton & A. V. Sutton (IMI 354112).

Gvritishvili (1982) records this species from a wide range of host substrata, including *Ceratonia*, but although several coelomycetes were listed from this host by Pantidou (1973), no *Cytospora* was included.

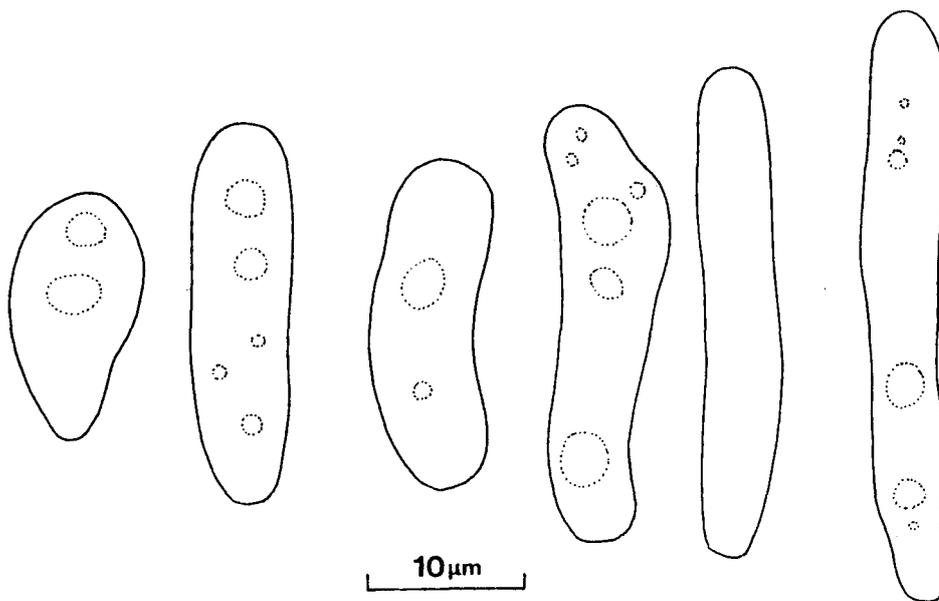


Fig. 2. *Cryptosporiopsis rostrupii*: Conidia.

***Diplodia mutila*** (Fr.) Mont. in Ann. Sci. Nat., Bot., ser. 2, 1: 302. 1834.

Greece, Crete, Sitia, Stavrochori, 9 Jul 1992, on dead twigs of *Ceratonia siliqua*, B. C. Sutton & A. V. Sutton (IMI 354138c).

Pantidou (1973) lists this species on *Malus sylvestris* in Greece and Sutton (1980) records it from a wide range of substrata including collections from France and Cyprus in the Mediterranean region.

***Gyrothrix grisea*** Piroz. in Mycol. Pap. 84: 17. 1962.

Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, on indet. dead leaf, B. C. Sutton & A. V. Sutton (IMI 354120).

This species is a common constituent of leaf litter flora. Collections in herb. IMI indicate it to be mainly tropical in distribution, and apart from this Cretan collection it is not known from the Mediterranean region.

***Gyrothrix podosperma*** (Corda) Rabenh., Deutschl. Krypt.-Fl. 1: 72. 1844.

Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, on cupules of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 354141d).

This is another common member of the leaf litter mycoflora. Collections in herb. IMI indicate a mostly tropical to subtropical distribution, although material from France and especially Italy is known from the Mediterranean region.

***Omega coenobiticum*** B. Sutton & Minter in Trans. Brit. Mycol. Soc. 91: 715. 1988.

Greece, Halkidhiki, Athos Peninsula, near Karies, 24 Mar 1988, on leaf litter of *Quercus ilex*, D. W. Minter (IMI 326014, holotype); Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, on leaf litter of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 354122b); Greece, Crete, Sitia, Voila, 18 Jul 1992, B. C. Sutton & A. V. Sutton (IMI 354121k); Greece, Crete, Sitia, Stavrochori, 15 Jul 1992, B. C. Sutton & A. V. Sutton (IMI 354166e).

This species, recently described from mainland Greece on *Quercus ilex*, proved to be widespread in eastern Crete, having been collected with ease on all samples of *Quercus coccifera* leaf litter.

***Phaeostalagmus cyclosporus*** (Grove) W. Gams in Stud. Mycol. 13: 91. 1976.

Greece, Crete, Sitia, Voila, 19 Jul 1992, on dead leaves of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 354121b); Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, B. C. Sutton & A. V. Sutton (IMI 354122d).

This is a predominantly western European species which Gams & Holubová-Jechová (1976) also report from Canada. These are the first records from the Mediterranean region.

***Phoma hedericola*** (Durieu & Mont.) Boerema in Trans. Brit. Mycol. Soc. 67: 295. 1976.

Greece, Crete, Sitia, Voila, 18 Jul 1992, on dead leaves of *Hedera helix*, B. C. Sutton & A. V. Sutton (IMI 354115a).

Boerema (1976) describes this as common on ivy leaves and stems. It has been recorded for Greece under the name *Phyllosticta hedericola* Dur. & Mont. by Demetriades (1950) and Maire & Politis (1940).

***Phomopsis ?bloxamii*** Grove in Bull. Misc. Inform. Kew 1917: 68. 1917.

Greece, Crete, Sitia, Zakros Palace, Kato Zakros, 9 Jul 1992, on dead stems of *Eryngium creticum*, B. C. Sutton & A. V. Sutton (IMI 354156f).

The Cretan collection is close to this species but with shorter, wider alpha conidia. Grove gives  $10\text{--}12\ \mu\text{m} \times 1.5\text{--}2\text{--}2.5\ \mu\text{m}$  for the holotype collection. This compares with up to  $8\ \mu\text{m} \times 2.5\ \mu\text{m}$  for our material. The size difference might indicate a separate species, but the taxa on *Umbelliferae* are confused and need revising. Petrak (1944) recorded *P. eryngiicola* (Brunaud) Died., without comment, from *Ferulago nodosa* from Crete.

***Phomopsis brunaudiana*** (Sacc.) B. Sutton, **comb. nova**  $\equiv$  *Septoria brunaudiana* Sacc. in *Michelia* 1: 528. 1879.

France, on dead stems of *Foeniculum officinale* (PAD, holotype); ?Greece, Crete, Sitia, Epano Episkopi, 14 Jul 1992, on dead stems of *Foeniculum vulgare*, B. C. Sutton & A. V. Sutton (IMI 354161f).

In connection with resolving the identity of our specimen IMI 354161b (see under *Selenophoma anniae*, sp. nova, below) it was necessary to examine the holotype collection of *Septoria brunaudiana* Sacc. It was established that it not only had nothing to do with our new *Selenophoma* but was incorrectly placed in *Septoria*. The hamate beta conidia formed from phialides indicate its proper generic placement to be in *Phomopsis* (Sacc.) Bubák, and a new combination is accordingly made. Our Cretan collection on *Foeniculum vulgare*, cited above, shows no beta conidia but is producing alpha conidia. With the present state of knowledge in the group, and without a great deal of further work involving revision of other related taxa on *Umbelliferae*, it is not possible to determine whether this collection is the alpha conidial state of *P. brunaudiana* or not.

***Phomopsis controversa*** (Sacc.) Traverso, Fl. Ital. Crypt., Elenc. Bibl. 2: 273. 1906.

Greece, Crete, Sitia, Voila, 18 Jul 1992, on dead twigs of *Fraxinus* sp., B. C. Sutton & A. V. Sutton (IMI 354126a).

***Pilidium concavum*** (Desm.) Höhn. in Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl., Abt. 1, 124: 148. 1915.

Greece, Crete, Sitia, Voila, on dead leaves of *Quercus coccifera*, 18 Jul 1992, B. C. Sutton & A. V. Sutton (IMI 354121h); Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, on acorns of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 354141b).

This species has an uneven distribution, in herb. IMI it is known from the U.K., Eire, Austria, Puerto Rico, Japan, and New Zealand. This is the first report from the Mediterranean region.

*Pithomyces chartarum* (Berk. & M. A. Curtis) M. B. Ellis in Mycol. Pap. 76: 13. 1960.

Greece, Crete, Sitia, Zakros, 9 Jul 1992, on dead stems of *Ceratonia siliqua*, B. C. Sutton & A. V. Sutton (IMI 354128b).

This species is well-known to be the cause of facial eczema of sheep, especially damaging in New Zealand and S. Africa (Sutton & Gibson 1977). It is widespread and known to occur in the U.K. and Italy, but had not so far been recorded for Greece.

*Pseudolachnea hispidula* (Schrad. : Fr.) B. Sutton in Mycol. Pap. 141: 167. 1977.

Greece, Crete, Sitia, Itanos, 11 Jul 1992, on dead stems of indet. host, B. C. Sutton & A. V. Sutton (IMI 354158).

Sutton (1980) and Nag Raj (1993) give distributions for this common species that include Europe, but only Italy in the Mediterranean region.

*Robillarda sessilis* (Sacc.) Sacc. in Michelia 2: 8. 1880.

Greece, Crete, Sitia, Exo Apidha, 19 Jul 1992, on acorns of *Quercus coccifera*, B. C. Sutton & A. V. Sutton (IMI 354141c).

This species was originally described from northern Italy, and although it is common, Nag Raj (1993) does not give any other Mediterranean records.

*Selenophoma anniae* B. Sutton, sp. nova – Typus: Greece, Crete, Sitia, Epano Episkopi, 14 Jul 1992, in caulibus emortuis *Foeniculi vulgaris*, B. C. Sutton & A. V. Sutton (holotypus: IMI 354161b). – Fig. 3.

Conidiomata caulicola, eustromatica, dispersa, immersa, epidermalia vel subepidermalia, brunnea, irregulariter unilocularia, elongata vel navicularia, 175-245  $\mu\text{m}$  lata et 70  $\mu\text{m}$  profunda; parietes subindistinctae, in parte basali 2-3 cellulas crassae, textura angulari hyalina, tenuitunicata; in parte superiore 2-4 cellulas crassae, textura angulari brunnea vel atrobrunnea, crassitunicata, conidiomata superans atque in clypeum fere expansa. Ostiolum subindistinctum, circulare, non papillatum, centrale vel excentricum, c. 15  $\mu\text{m}$  diam. Conidiophora hyalina, supra basim irregulariter ramosa, 1-3-septata, laevia, e cellulis interioribus parietum conidiomatum formata, 17-29  $\mu\text{m}$   $\times$  3-6.5  $\mu\text{m}$ . Cellulae conidiogenae discretae vel in conidiophoris inclusae, cylindricae vel longe lageniformes, hyalinae, laeves, guttulatae, 7-17  $\mu\text{m}$   $\times$  3-5.5  $\mu\text{m}$  apice 1-2-loculares, loculis conidiogenis ad apicem periclinaliter distincte crassitunicatis, canali cytoplasmico egregio et collo minuto instructis. Conidia holoblastica, falcata, fusiformia, hyalina, non septata, irregulariter guttulata, laevia, ad apicem et basim obtusa, 23-30  $\mu\text{m}$   $\times$  3-3.5  $\mu\text{m}$ .

Conidiomata caulicolous, eustromatic, scattered, immersed, epidermal to subepidermal, brown, irregularly unilocular, elongated to navicular, 175-245  $\mu\text{m}$  wide  $\times$  70  $\mu\text{m}$

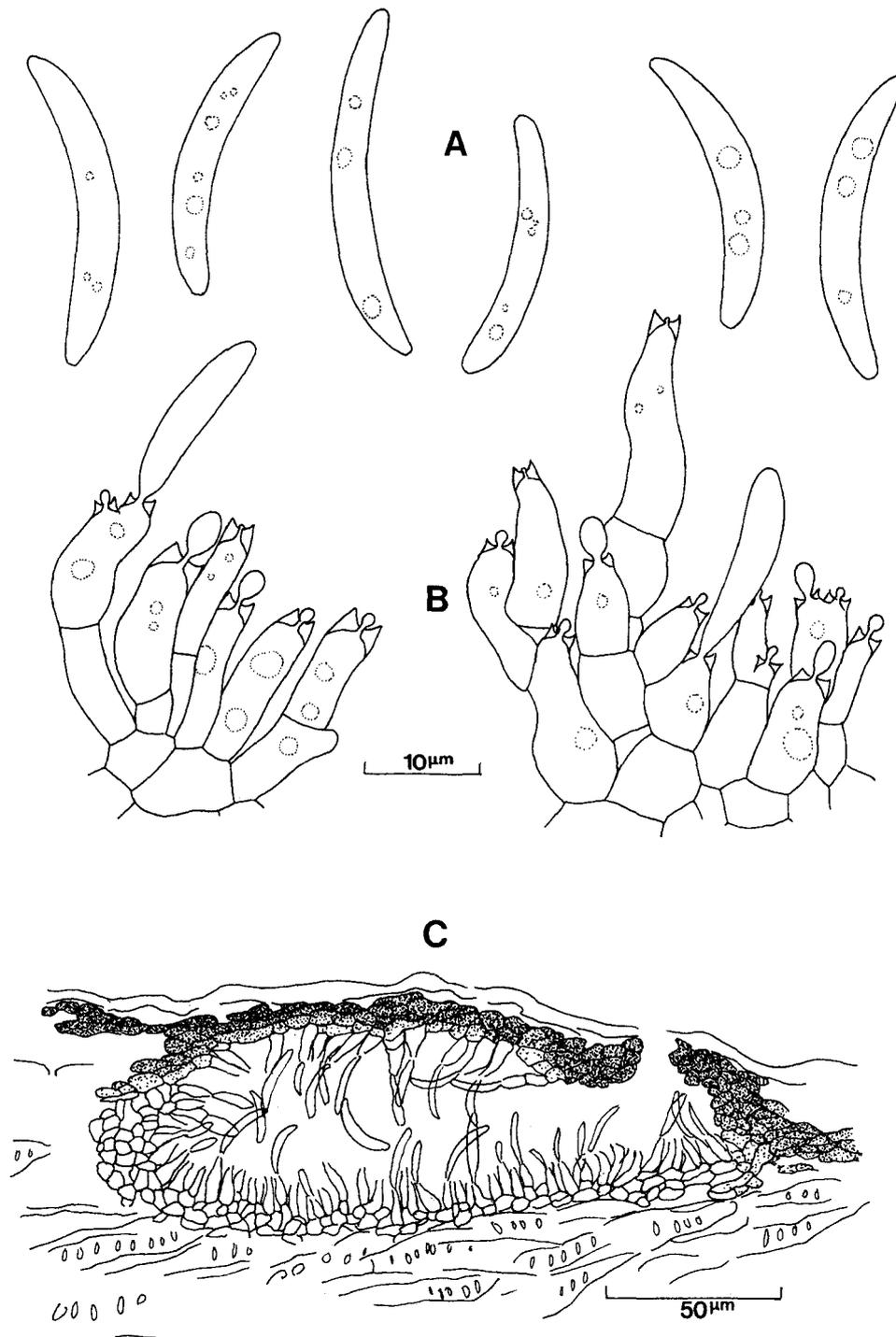


Fig. 3. *Selenophoma anniae*. – A: conidia; B: parts of conidiomatal wall with conidiogenous cells and developing conidia; C: median vertical section of a conidioma.

deep, composed of a basal wall, poorly delimited from the host tissue, 2-3 cells thick, of hyaline, thin-walled *textura angularis* and an upper wall 2-4 cells thick, of medium to dark brown, thick-walled *textura angularis* which extends beyond the conidiomatal wall to become almost clypear. Dehiscence by a circular, ill-defined non-papillate central or excentric ostiole ca 15  $\mu\text{m}$  diam. Conidiophores hyaline, irregularly branched at the base and above, 1-3-septate, smooth, formed from the inner cells of the conidiomatal wall, 17-29  $\mu\text{m} \times 3-6.5 \mu\text{m}$ . Conidiogenous cells discrete or integrated, cylindrical to long lageniform, hyaline, smooth, guttulate, with 1-2 apical loci per cell, 7-17  $\mu\text{m} \times 3-5.5 \mu\text{m}$ . Conidiogenous loci with well-defined periclinal thickening, a prominent cytoplasmic channel and minute collarete. Conidia holoblastic, falcate, fusiform, hyaline, aseptate, irregularly guttulate, smooth, obtuse at the apex and base, 23-30  $\mu\text{m} \times 3-3.5 \mu\text{m}$ . – Named after my wife, Ann Sutton, whose infinite patience with my mycological eccentricities and preoccupations in foreign parts we have visited has contributed immeasurably to this discipline.

A review of the coelomycetes found on *Foeniculum* shows that only one species of *Selenophoma* has hitherto been described or recorded from this host genus, *S. proximella* Petr. (Petrak 1947). This was described with pycnidial conidiomata 50-100  $\mu\text{m}$  diam. and fusiform to navicular, rarely curved conidia measuring 8-17  $\mu\text{m} \times 3-5 \mu\text{m}$ . The conidiomata in *S. proximella* are much smaller and the conidia shorter and wider than in *S. anniae*. In addition the conidia in *S. proximella* were said to be rarely curved but in *S. anniae* they are consistently falcate. An examination of coelomycetes with conidia falling in the length/width size range of *S. anniae* shows that only one is reasonably close, *Septoria brunaudiana* Sacc. This was described by Saccardo (1879) from *F. officinale* but with no location, date or other collection details. The holotype collection of *S. brunaudiana* (PAD) and Saccardo's accompanying autographic herbarium label and illustration clearly show this species to be incorrectly placed in *Septoria*. The hamate beta conidia measuring 25-30  $\mu\text{m} \times 1 \mu\text{m}$  are those of a *Phomopsis* species and show no relation to our new *Selenophoma*.

The five accepted species of *Selenophoma* have been treated by Sutton (1980), and of these only *S. juncea* (Mont.) Arx has conidia in this size range, 25-29  $\mu\text{m} \times 5.5 \mu\text{m}$ . The difference in width is most significant and serves to distinguish it from *S. anniae*.

***Stilbospora cistina*** (Cooke) B. Sutton in Mycol. Pap. 138: 79. 1975.

Greece, Crete, Sitia, Stavrochori, 15 Jul 1992, on dead stems of *Cistus* sp., B. C. Sutton & A. V. Sutton (IMI 354117a).

Although the species was originally described from the U.K. on *Cistus laurifolius* and later as *Hendersonia cisti* from *C. ladaniferus* in Portugal, it has not been recorded either from Greece or elsewhere in the Mediterranean.

***Stilbospora*** spp.

Greece, Crete, Sitia, Stavrochori, on dead stems of *Helichrysum* sp., 15 Jul 1992, B. C. Sutton & A. V. Sutton (IMI 354143a); Greece, Crete, Sitia, Azokeramos, 9 Jul 1992, on dead stems of *Sarcopoterium spinosum*, B. C. Sutton & A. V. Sutton (IMI 354152d).

Species which have no names on their respective host substrata, very similar to *Stilbospora cistina*, were also collected in Crete on *Helichrysum* (conidia 24–28  $\mu\text{m} \times 12$ –12.5  $\mu\text{m}$ ) and *Sarcopoterium spinosum* (conidia 33–40  $\mu\text{m} \times 17$ –20  $\mu\text{m}$ ). These dimensions compare with 35–47  $\mu\text{m} \times 14$ –18  $\mu\text{m}$  for *S. cistina*. The genus, in which about 30 species have been described, is in need of revision and it is suspected that eventually the number of accepted taxa will be much reduced.

*Torula herbarum* f. *quaternella* Sacc. in Ann. Mycol. 11: 556. 1913.

Greece, Crete, Sitia, Epano Episkopi, 14 Jul 1992, on dead stems of *Foeniculum vulgare*, B. C. Sutton & A. V. Sutton (IMI 354161h).

This is the form of the species common in the tropics. Apart from collections made in the U.K. it has not been reported from Europe. This is the first record from the Mediterranean region.

*Truncatella helichrysi* (Severini) B. Sutton, **comb. nova**  $\equiv$  *Pestalotia helichrysi* Severini in Ann. Bot. (Roma) 11: 205. 1913. – (Fig. 4).

Greece, Crete, Sitia, 15 Jul 1992, on dead stems of *Helichrysum barrelieri*, B. C. Sutton & A. V. Sutton (IMI 354143c).

Conidiomata caulicolous, stromatic, acervular, scattered, immersed, epidermal to subepidermal, unilocular, simple or slightly convoluted, 350–410  $\mu\text{m}$  in diam., composed of pale to medium brown, thin-walled textura angularis. Dehiscence irregular, by rupture of overlying host tissues. Conidiophores hyaline, 1–2 septate, sparingly branched towards the base which is often swollen, smooth, formed from the upper cells of the conidiomatal wall, 8.5–10  $\mu\text{m} \times 2$ –2.5  $\mu\text{m}$ . Conidiogenous cells discrete or integrated, cylindrical to long lageniform, hyaline, smooth, 6–8.5  $\mu\text{m} \times 2$   $\mu\text{m}$ . Conidia fusiform, 3–euseptate, sometimes slightly constricted at the median septum, walls thick, of equal length, total conidial size 25–30  $\mu\text{m} \times 9.5$ –11  $\mu\text{m}$ , median cells chestnut brown, verruculose, 19.5–20  $\mu\text{m}$  long; apical cell shortly conical, with 4–5 cellular unbranched filiform appendages 30–50  $\mu\text{m}$  long arising at points over the apex.

This species was originally described from dead stems of *Helichrysum stoechas* from Monte Malbe (Perugia), Italy, by Severini (1913). Guba (1961), who had a broad concept of genera in this complex, maintained it in *Pestalotia* sect. *Quadriloculatae* but cited no additional material and merely gave an English translation of the diagnosis. Nag Raj (1993) examined no specimens and did not comment on the species. The Cretan collection agrees closely with the original description where conidiomata were recorded as 300–450  $\mu\text{m}$  diam, and conidia as 23–27  $\mu\text{m} \times 9$ –10  $\mu\text{m}$  with 5 divergent filiform appendages 18–35  $\mu\text{m}$  long. ‘Pedicels’ (presumably conidiophores and/or conidiogenous cells) were described as 20–40  $\mu\text{m} \times 2$   $\mu\text{m}$ , and this is the only point of disagreement. In the Cretan material they are much shorter.

Steyaert (1949) separated 4-celled *Pestalotiopsis* species and some *Monochaetia* species into *Truncatella*, and this generic rearrangement was accepted by Sutton (1980). Later, Nag Raj (1993) also placed some of these species in *Pestalotiopsis*, but his concept of the latter genus is far more heterogeneous than seems warranted.

*Pestalotia helichrysi* is not correctly included in *Pestalotia*, which is a monotypic genus with cupulate conidiomata and 5-distoseptate conidia (see Sutton 1969). To place this with species such as *P. besseyi* Guba, *P. casuarinae* Cooke & Masee, *P. citrina* McAlpine, *P. eupyrena* Tassi, *P. gastrolobi* Tassi, *P. jacksoniae* Henn., *P. moorei* Harkn., *P. pezizoides* (Dearn. & Fairm.) Shoemaker & E. Müll., *P. puyae* Henn., *P. stevensonii* Peck and *P. torrendii* J. V. Almeida & Cámara in *Pestalotiopsis*, as Nag Raj (1993) has done (without any clearly stated reasons), in my opinion unnecessarily broadens the concepts of a genus that is mostly circumscribed with relative ease. *P. helichrysi* logically belongs in *Truncatella* where it differs from described taxa in conidial size and morphology.

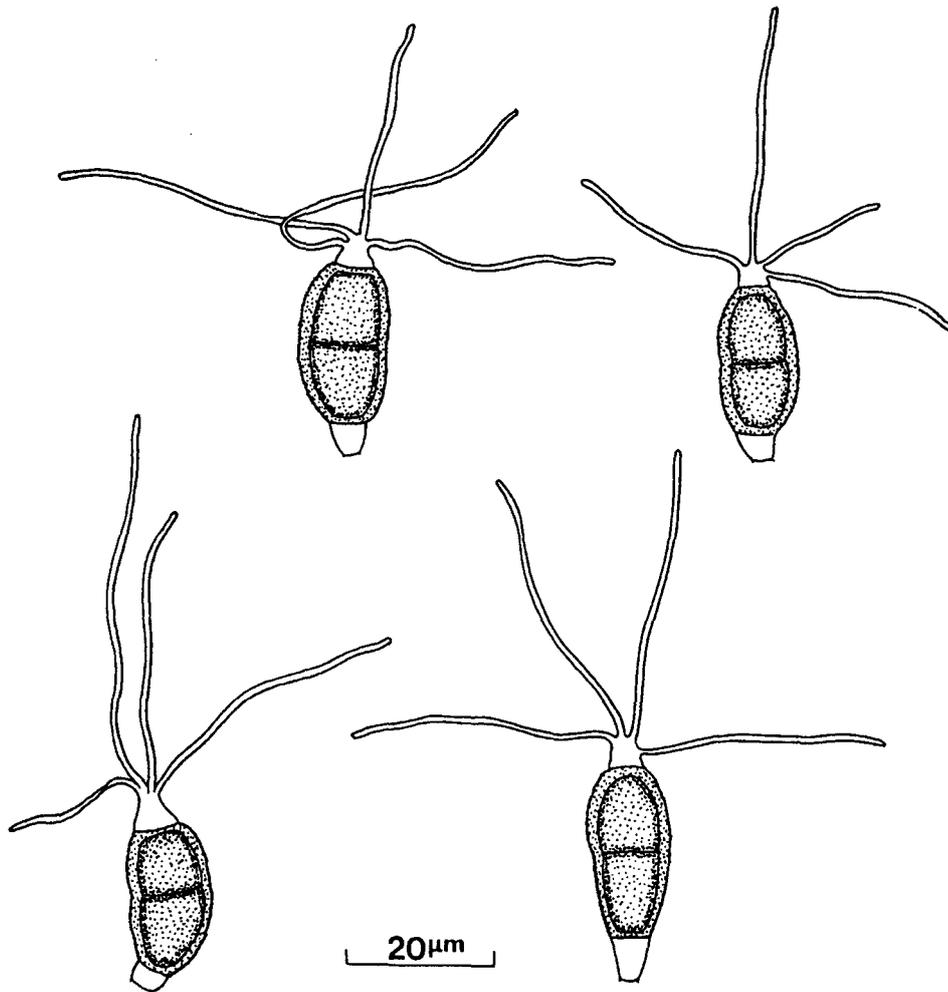


Fig. 4. *Truncatella helichrysi*: Conidia.

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