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## Identification key and description of Mediterranean maquis litter microfungi

### Abstract

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An analytical key of 62 mitosporic fungal genera and 122 species from Mediterranean areas is proposed. The key is built using the most important morpho-systematic characters that can be utilized for fungal identification. An analytical description of all genera and species, with drawings, is presented. The described species were identified as colonizers of the different plant species composing the Mediterranean maquis. The plant substrata colonized by each fungal species are also indicated.

### Introduction

The Mediterranean maquis ecosystem is characterised by strong climatic stress, determining the development of sclerophyllous vegetation. Obviously also the transformation of the organic material is submitted to the same stress conditions and the involved fungal microflora is composed by species able to colonize the vegetal organic fragments, also during the highest water stress period and at high environmental temperatures. These fungi are able to degrade the chemical components commonly present in the senescent and dead leaves of sclerophyllous plants that, as known, are inhibiting the activity of several common saprotrophs. The fungi responsible of these transformations represent an interesting subject of research. As a matter of fact, recent investigations have pointed out a regular succession of species during colonization phenomena (Bartoli & Massari 1985; Rambelli & Pasqualetti 1990; Mulas & al. 1990; Bartoli & al. 1991; Mulas & al. 1991; Mulas & al. 1993; Mulas & al. 1995; Pasqualetti & al. 1995; Fonck & al. 1998; Pasqualetti & al. 1999b; Rambelli & al. 2003; Tempesta & al. 2003; Tempesta & al. 2005), but many other questions concerning the ecology of these fungi are still to be answered.

In this work a consistent group of saprotrophic fungi, some of which are resulting from our taxonomical and ecological investigations carried out mainly on the Sardinian Mediterranean maquis, is analysed under a systematic point of view. An analytical key of this fungi is proposed. The key is built using the morpho-systematic characters that can be utilized for identifications, like the presence of sporodochia, the structure of conidiophore

and conidiogenous cell, the structure of the spores, etc. The work also contains an analytical description of genera and species, with drawings to underline the most important morphological characters, also summarised in the captions to simplify their identifications.

The mycological terminology is explained in a "glossary" supported by four tables. For each genus, the author, the protologue, the type species and the taxonomic bibliography are reported, while for each species are reported the author, the protologue and the basionym (when known and present), the synonyms and the vegetal species on which was detected.

Index Fungorum (CABI <http://www.indexfungorum.org/Names/Names.asp>) and CBS (<http://www.cbs.knaw.nl/databases/index.htm>) were utilised for nomenclatural controls of fungal species and genera.

For each fungal species, references concerning the ecological distribution, sites of sampling and vegetal substrata on which the fungus was detected are reported in a final appendix.

The figures have been completely redrawn taking as the basis the illustrations in the books of Pirozynski 1962; Ellis 1971, 1976; Matsushima 1971, 1975, 1980, 1981, 1983, 1985, 1987, 1989, 1993, 1995, 1996; Nag Raj & Kendrick 1975; Gams & Holubová-Jechová 1976; Hoog 1977, 1985; Cole & Samson 1979; Carmichael & al. 1980; Hoog & Oorschot 1985; Zucconi & Onofri 1989; Castañeda Ruiz & Kendrick 1990 a, 1990 b, 1991; Domsch & al. 1993; Crous & al. 1995; Mercado Sierra & al. 1997; Ellis & Ellis 1997, 1998; Kirk & al. 2001.

### The maquis in the Mediterranean basin

The current Mediterranean vegetation is the result of paleoclimatic and paleogeographic processes, and formed following the evolution or degradation phenomena, according to different conditioning factors, among which great importance must be reserved to the climate and, specifically, to the summer aridity and the winter cold. Indeed, the Mediterranean climate is characterized by very variable annual precipitations, mainly concentrated in late autumn-early winter, by a period of summer warmth and aridity, and mild to cold winters, with no day-night temperature excursions (typical of continental climate) and, mainly in summer, also by a great sun radiation.

The vegetal cover is composed prevalently by broad-leaves of evergreen forests and shrubs of evergreen sclerophylls. The most typical Mediterranean canopy is the evergreen forest, that is characteristic of the whole Mediterranean basin and presents a predominance of *Quercus ilex* L. in all types of soils. In Italy it stretches mostly along the coasts; in the south and in the islands it colonizes also inside areas and the mountains up to an altitude of 1200-1400 m. It is a dense canopy, where light penetration is very meagre, and just few mesophilous and ombrophilous species are present.

In the shrubby layer, *Phillyrea latifolia* L., *Crataegus monogyna* Jacq., *Arbutus unedo* L., *Erica arborea* L., *Ruscus aculeatus* L., *Viburnum tinus* L., *Smilax aspera* L., *Rubia peregrina* L., *Lonicera implexa* Aiton, *Rubus ulmifolius* Scott. and *Clematis* spp. can be found. The herbaceous species are cyclamen, orchids, *Cyperaceae* and *Gramineae*.

Within the altitudinal and ecological limits, the *Quercus ilex* forest may show many modifications. In the western Mediterranean *Quercus ilex* can be integrated or replaced by



*Quercus suber* L., which usually forms mixed and open woods, with a good light penetration and richer undergrowth.

In Italy, *Quercus suber* woods are more common on acid soils, along the Tirrenian coasts, in Sicily and, prevalently, in Sardinia. The most inner part of the islands and the most part of the peninsula, where the climate is cold and humid, are characterised by deciduous broad-leaves forests; the dominant arboreal essences belong to *Quercus* genus (*Quercus pubescens* Willd., *Quercus virgiliana* (Ten.) Ten., *Quercus robur* L., *Quercus petraea* (Matt.) Liebl.) of which *Ostria carpinifolia* Scop., *Fraxinus ornus* L., *Acer monspessulanum* L., *Ilex aquifolium* L., *Taxus baccata* L. etc. are also part.

Where the geological composition of the soil and the climatic conditions have not allowed the forest colonization, we find shrub formations of different species of evergreen sclerophylls and coastal maquis. Indeed, in the lowest areas and, mostly, along the coastal areas, where high temperatures and longer summer aridity are more important, the *Quercus ilex* forest changes into shrub-forests of arboreal sclerophylls as *Olea europaea* L. var. *silvestris* Brot., *Ceratonia siliqua* L., *Rhamnus alaternus* L., *Arbutus unedo* L., *Myrtus communis* L., *Juniperus oxycedrus* L., *Phillyrea angustifolia* L., *Pistacia lentiscus* L., *Cistus incanus* L. etc.

Where the environment is marked by hotter and drier conditions the maquis can be found. It is characterised by a dense vegetation of small and medium size trees and shrubs, with a thick and entangled undergrowth of undershrubs and creepers represented mostly by sclerophylls with leathery and persistent leaves, thick cuticle, rolled edges and sunken stomata. This vegetal formation stretches mainly along the coastal edge, with inland penetration in hottest areas. Being most extended vegetal formation of the Mediterranean basin, and of the islands, it represents the dominating landscape of the Italian coasts. It can be classified as “primary” when representing the maximum level of evolution reachable in that specific area, or as “secondary” when it is the result of deterioration of a more evolved vegetation, mainly caused by direct and indirect antropic interventions like fires, deforestations, excessive pasture and unsuitable cultivations.

The maquis can be distinguished on the basis of different characteristics. A first distinction can be made considering the height of its composing elements. The maquis is classified as “high” when it is characterised by trees about 4 metres high, mainly *Quercus ilex*, *Arbutus unedo*, *Rhamnus alaternus*, *Juniperus phoenicea* L., *J. oxycedrus*, *Viburnum tinus*. It is classified as “low” when composed by shrubs of modest height, which can reach 2 metres, like *Pistacia lentiscus*, *Phillyrea* spp., *Rosmarinus officinalis* L., *Chamaerops humilis* L., *Myrtus communis*, *Euphorbia dendroides* L., *Cistus monspeliensis* L., *Cistus salvifolius* L., *Genista* spp.

Nevertheless, the most important characteristic of the maquis is its floristic composition tied to the ecological conditions and the antropic interventions. The type of maquis may also be distinguished on the basis of its most representative species. Among the most evolved are the maquis of *Quercus ilex*, that of *Arbutus unedo*, and *Erica arborea*. Because of the presence of species typical of the ilex grove, these types of maquis can be considered as derived by deterioration from the *Quercus ilex* forests and, consequently, can be represented as an evolutive stage towards the ilex grove. As the consequence of a deep degradation from recurring fires, populations of different species of *Cistus* are found or,

more frequently, monospecific populations of *Cistus monspeliensis*. Where a strong soil degradation is present we find maquis composed by *Genista* spp.

As a consequence of a successive thinning of the maquis generates the gariga, a formation of very low pulvinate shrubs, with discontinuous coverage and large areas of bared soil accompanied by a number herbaceous species, higher than that of the maquis. The shrub compositions change according to the characteristics of the environment: on the mountain gariga *Juniperus communis* L., *Prunus prostrata* Labill., *Genista* spp., *Thymus* spp. can be found, while along the coast are *Helichrysum italicum* (Roth) G. Don ssp. *microphyllum* (Willd.) Nyman, *Cistus* spp., *Teucrium marum* L., *Thymelaea tartonraira* (L.) All., *Genista* spp.

In the presence of further degradation, all the ligneous species disappear with formation of herbaceous populations with variable composition characterised by the presence of one or more species like *Asphodelus aestivum* Brot., *Galactites tomentosa* Monch, *Pteridium aquilinum* (L.) Kuhn.

### Analytical key

- |   |   |  |
|---|---|--|
| 1 | Conidiogenous cell phialidic .....                        | <b>2</b>                                   |
| 1 | Conidiogenous cell not phialidic .....                    | <b>15</b>                                  |
| 2 | Sporodochia present .....                                 | <i>Minimidochium setosum</i> (p. 15)       |
| 2 | Sporodochia absent .....                                  | <b>3</b>                                   |
| 3 | Conidiogenous cells aggregated .....                      | <b>4</b>                                   |
| 3 | Conidiogenous cells solitary .....                        | <b>8</b>                                   |
| 4 | Conidiogenous cells polyphialidic verticillate ..         | <i>Selenosporella curvispora</i> (p. 16)   |
| 4 | Conidiogenous cells monopialidic .....                    | <b>5</b>                                   |
| 5 | Conidia pigmented .....                                   | <i>Stachybotrys</i> (p. 17)                |
|   | A. Conidiophores usually branched, conidia 8-11 × 5-10 µm |  |
|   | .....   | <i>Stachybotrys atra</i> (p. 17)           |
|   | A. Conidiophores unbranched, conidia 7-12 × 4-6 µm        |  |
|   | .....   | <i>Stachybotrys chartarum</i> (p. 18)      |
| 5 | Conidia hyaline or slightly pigmented .....               | <b>6</b>                                   |
| 6 | Conidiogenous cells penicillate .....                     | <i>Phialocephala humicola</i> (p. 19)      |
| 6 | Conidiogenous cells not penicillate .....                 | <b>7</b>                                   |
| 7 | Conidiogenous cells on collar branches ..                 | <i>Gonytrichum chlamydosporium</i> (p. 20) |
| 7 | Conidiogenous cells verticillate .....                    | <i>Phaeostalagmus cyclosporus</i> (p. 22)  |
| 8 | Conidia endogenous .....                                  | <i>Chalara</i> (p. 24)                     |
|   | A. Conidia 2-4 × 1.5-2 µm .....                           | <i>Chalara brevispora</i> (p. 24)          |
|   | A. Conidia more than 3 µm long .....                      | <b>B</b>                                   |
|   | B. Conidia 1-septate .....                                | <i>Chalara aurea</i> (p. 25)               |
|   | B. Conidia 0-septate .....                                | <b>C</b>                                   |
|   | C. Conidia 5.5-17 × 1.5-2.5 µm .....                      | <i>Chalara cylindrosperma</i> (p. 26)      |
|   | C. Conidia 3-8.5 × 1-1.5 µm .....                         | <i>Chalara microspora</i> (p. 27)          |
| 8 | Conidia semi-endogenous or exogenous .....                | <b>9</b>                                   |
| 9 | Conidia pigmented .....                                   | <i>Gliomastix macrocylindrica</i> (p. 28)  |

- 9 Conidia hyaline or slightly pigmented . . . . . **10**
- 10 Conidiophores micronematous . . . *Aureobasidium pullulans* var. *pullulans* (p. 29)
- 10 Conidiophores macronematous . . . . . **11**
- 11 Conidia subspherical or oblong-ellipsoidal . . . . . **12**
- 11 Conidia cylindrical . . . . . **13**
- 12 Conidia truncate at the base, conidiogenous cell not percurrent  
 . . . . . *Kylandria keitae* (p. 30)
- 12 Conidia not truncate at the base, conidiogenous cell usually percurrent  
 . . . . . *Chloridium* (p. 31)
- A. Conidiogenous cell percurrent, conidia  $2.5\text{--}3.8 \times 2\text{--}2.5 \mu\text{m}$   
 . . . . . *Chloridium virescens* var. *virescens* (p. 31)
- A. Conidiogenous cell sympodial, rarely percurrent, conidia  $3\text{--}4.5 \times 0.8\text{--}1.2 \mu\text{m}$   
 . . . . . *Chloridium botryoideum* var. *botryoideum* (p. 32)
- 13 Conidia not curved . . . . . *Cylindrotrichum oligospermum* (p. 33)
- 13 Conidia curved . . . . . **14**
- 14 Collarettes conspicuous . . . . . *Codinea* state of *Chaetosphaeria callimorpha* (p. 34)
- 14 Collarettes inconspicuous . . . . . *Menispora ciliata* (p. 35)
- 15 Sterile setae present . . . . . **16**
- 15 Sterile setae absent . . . . . **18**
- 16 Setae branched . . . . . *Gyrothrix* (p. 36)
- A. Branches of the setae verticillate . . . . . *Gyrothrix verticillata* (p. 36)
- A. Branches of the setae not verticillate . . . . . **B**
- B. Setae verrucose . . . . . **C**
- B. Setae not verrucose . . . . . **E**
- C. Conidia  $8\text{--}16 \mu\text{m}$ , setae  $120\text{--}260 \mu\text{m}$  long  
 . . . . . *Gyrothrix podosperma* (p. 37)
- C. Conidia  $13\text{--}19 \mu\text{m}$  long . . . . . **D**
- D. Conidia  $14\text{--}19 \times 2\text{--}3 \mu\text{m}$ , setae up to  $150 \mu\text{m}$   
 . . . . . *Gyrothrix ramosa* (p. 38)
- D. Conidia  $13\text{--}16 \times 1.5 \mu\text{m}$ , setae  $250\text{--}400 \mu\text{m}$   
 . . . . . *Gyrothrix macroseta* (p. 39)
- E. Conidia  $6\text{--}8 \times 1.5\text{--}1.8 \mu\text{m}$  . . . . . *Gyrothrix microsperma* (p. 40)
- E. Conidia more than  $8 \mu\text{m}$  long . . . . . **F**
- F. Conidia  $10\text{--}18 \times 1\text{--}1.5 \mu\text{m}$ , branches of setae spirally twisted  
 . . . . . *Gyrothrix grisea* (p. 41)
- F. Conidia  $8\text{--}14 \times 1.5\text{--}2 \mu\text{m}$ , branches of setae flexuous  
 . . . . . *Gyrothrix citricola* (p. 42)
- 16 Setae not branched . . . . . **17**
- 17 Conidiogenous cell percurrent . . . . . *Circinotrichum* (p. 43)
- A. Setae straight . . . . . **B**
- A. Setae circinate . . . . . **C**
- B. Setae up to  $150 \mu\text{m}$ , conidia without minute appendage  
 . . . . . *Circinotrichum papakurae* (p. 43)
- B. Setae up to  $300 \mu\text{m}$ , conidia with minute appendage  
 . . . . . *Circinotrichum rigidum* (p. 44)

- C. Setae 90-180  $\mu\text{m}$  ..... *Circinotrichum maculiforme* (p. 45)  
 C. Setae 35-75  $\mu\text{m}$  ..... *Circinotrichum olivaceum* (p. 46)
- 17 Conidiogenous cell not percurrent ..... *Beltrania* (p. 47)  
 A. Conidial appendage 3-20  $\mu\text{m}$  ..... *Beltrania rhombica* (p. 47)  
 A. Conidial appendage 2-5  $\mu\text{m}$  ..... *Beltrania querna* (p. 49)
- 18 Sporodochia present ..... **19**  
 18 Sporodochia absent ..... **22**
- 19 Conidiogenous cell percurrent ..... *Stigmina fici* (p. 50)  
 19 Conidiogenous cell not percurrent ..... **20**
- 20 Conidia in chains ..... *Trimmatostroma* (p. 51)  
 A. Conidia unbranched, 5-20  $\times$  5-14  $\mu\text{m}$   
 ..... *Trimmatostroma betulinum* (p. 51)  
 A. Conidia frequently forked, 12-38  $\times$  4-10  $\mu\text{m}$   
 ..... *Trimmatostroma salicis* (p. 52)
- 20 Conidia not in chains ..... **21**
- 21 Conidia branched ..... *Cryptocoryneum* (p. 53)  
 A. Conidia 20-45  $\times$  12-30  $\mu\text{m}$  ..... *Cryptocoryneum rilstonii* (p. 53)  
 A. Conidia 40-85  $\times$  20-30  $\mu\text{m}$  ..... *Cryptocoryneum condensatum* (p. 54)
- 21 Conidia unbranched ..... *Epicoccum nigrum* (p. 55)
- 22 Arthroconidia present ..... *Oidiodendron griseum* (p. 56)  
 22 Arthroconidia absent ..... **23**
- 23 Conidiogenous cell denticulate ..... **24**  
 23 Conidiogenous cell not denticulate ..... **40**
- 24 Conidia helicoid ..... *Helicosporium* (p. 58)  
 A. Conidial filaments 1  $\mu\text{m}$  thick ..... *Helicosporium vegetum* (p. 58)  
 A. Conidial filaments 4-8  $\mu\text{m}$  thick ..... *Helicosporium pannosum* (p. 59)
- 24 Conidia not helicoid ..... **25**
- 25 Conidiogenous cell not sympodial ..... **26**  
 25 Conidiogenous cell sympodial ..... **28**
- 26 Conidia in chains ..... *Polyscytalum gracilisporem* (p. 60)  
 26 Conidia not in chains ..... **27**
- 27 Conidia muriform ..... *Chuppia sarcinifera* (p. 61)  
 27 Conidia not muriform ..... *Botrytis* (p. 62)  
 A. Conidia colourless to pale brown, frequently with minute hilum 6-18  $\times$  4  $\mu\text{m}$   
 ..... *Botrytis cinerea* (p. 62)  
 A. Conidia colourless, 5-10  $\times$  3-8  $\mu\text{m}$  ..... *Botrytis allii* (p. 63)
- 28 Conidia frequently in chains, with scars at each end  
 ..... *Anungitea* (p. 64)  
 A. Conidiophores caespitose ..... *Anungitea caespitosa* (p. 64)  
 A. Conidiophores not caespitose ..... **B**  
 B. Conidia not hyaline ..... *Anungitea fragilis* (p. 65)  
 B. Conidia hyaline ..... **C**  
 C. Conidiophores 35-80  $\mu\text{m}$ , conidia 1-septate, 12-17  $\times$  2-3  $\mu\text{m}$   
 ..... *Anungitea uniseptata* (p. 66)  
 C. Conidiophores 40-100  $\mu\text{m}$ , conidia 0-2-septate, 11-18  $\times$  2.5-4  $\mu\text{m}$

	.....	<i>Anungitea longicatenata</i> (p. 67)	
28	Conidia not in chains	.....	<b>29</b>
29	Conidia muriform	.....	<i>Oncopodiella trigonella</i> (p. 68)
29	Conidia not muriform	.....	<b>30</b>
30	Conidia appendiculate	.....	<i>Camposporium</i> (p. 69)
	A. Conidia 45-75 × 7-9 μm	.....	<i>Camposporium antennatum</i> (p. 69)
	A. Conidia 80-140 × 7.5-12 μm	.....	<i>Camposporium pellucidum</i> (p. 70)
30	Conidia not appendiculate	.....	<b>31</b>
31	Separating cell present	.....	<b>32</b>
31	Separating cell absent	.....	<b>34</b>
32	Conidia septate or pseudoseptate	.....	<i>Nakataea fusispora</i> (p. 72)
32	Conidia 0-septate	.....	<b>33</b>
33	Each denticle as separating cell	.....	<i>Hansfordia pulvinata</i> (p. 73)
33	Separating cell disk-like	.....	<i>Conoplea mangelotii</i> (p. 75)
34	Conidia with lateral crest or bands	.....	<i>Ardhachandra</i> (p. 76)
	A. Conidia with lateral crest	.....	<i>Ardhachandra cristaspora</i> (p. 76)
	A. Conidia with two lateral bands	.....	<i>Ardhachandra aequilatera</i> (p. 77)
34	Conidia without lateral crest or bands	.....	<b>35</b>
35	Denticles thread-like, often breaking across the middle leaving part attached to the conidium	.....	<i>Scolecobasidium</i> (p. 78)
	A. Conidiophores 4-30 μm	.....	<b>B</b>
	A. Conidiophores 20-600 μm	.....	<b>C</b>
	B. Conidia 1-septate constricted at the septum, 5-12.5 × 2-4 μm	.....	<i>Scolecobasidium constrictum</i> (p. 78)
	B. Conidia septate sometimes constricted at the septum, 9-20 × 2.5-4.5 μm	.....	<i>Scolecobasidium tshawytschae</i> (p. 79)
	C. Conidia 1-septate	.....	<i>Scolecobasidium humicola</i> (p. 80)
	C. Conidia 3-septate	.....	<i>Scolecobasidium longiphorum</i> (p. 82)
35	Denticles not thread-like, not breaking across the middle	.....	<b>36</b>
36	Conidiophores branched, conidia 0-septate	.....	<b>37</b>
37	Conidia falcate	.....	<i>Selenodriella fertilis</i> (p. 83)
37	Conidia not falcate	.....	<i>Dicyma</i> (p. 84)
	A. Conidia ellipsoidal 8-11 × 4-6 μm	.....	<i>Dicyma ovalispora</i> (p. 84)
	A. Conidia ovoidal 4.5-6 × 3-3.3 μm	.....	<i>Dicyma olivacea</i> (p. 85)
36	Conidiophores unbranched or septate conidia	.....	<b>38</b>
38	Denticles cylindrical	.....	<i>Dactylaria</i> (p. 86)
	A. Conidia 24-40 μm	.....	<b>B</b>
	A. Conidia 10-26 μm	.....	<b>C</b>
	B. Conidia 30-40 × 2-5 μm	.....	<i>Dactylaria fusiformis</i> (p. 86)
	B. Conidia 24-37 × 2.2-3 μm	.....	<i>Dactylaria obtriangularia</i> (p. 87)
	C. Conidia 3-septate, 10-20 × 3.5-5.5 μm	.....	<i>Dactylaria parvispora</i> (p. 88)
	C. Conidia 1-septate, 18-26 × 3-4 μm	.....	<i>Dactylaria chryosperma</i> (p. 89)
38	Denticles cone-shaped	.....	<b>39</b>
39	Conidia not pointed at the base	.....	<i>Solosympodiella clavata</i> (p. 90)
39	Conidia pointed at the base	.....	<i>Pleurophragmium triseptatum</i> (p. 91)

- 40 Conidiogenous cell sympodial ..... **41**
- 40 Conidiogenous cell not sympodial ..... **49**
- 41 Conidia colourless, subulate, truncate at the base . *Subulispora britannica* (p. 92)
- 41 Conidia not subulate ..... **42**
- 42 Conidial septa thick, dark, rigid in contrast to the exospore wall  
..... *Embellisia chlamydospora* (p. 93)
- 42 Conidial septa if present not thick, dark, rigid in contrast to the exospore wall . **43**
- 43 Conidia muriform ..... **44**
- 43 Conidia not muriform ..... **45**
- 44 Conidia rostrate, obclavate ..... *Alternaria* (p. 95)
- A. Conidiophores up to 50  $\mu\text{m}$ , conidia 18-65  $\times$  8-18  $\mu\text{m}$ , beak pale  
..... *Alternaria alternata* (p. 95)
- A. Conidiophores up to 115  $\mu\text{m}$ , conidia 22-95  $\times$  8-19  $\mu\text{m}$   
..... *Alternaria tenuissima* (p. 96)
- 44 Conidia not rostrate, not obclavate ..... *Ulocladium* (p. 97)
- A. Conidia tubercolate ..... *Ulocladium tuberculatum* (p. 97)
- A. Conidia not tubercolate ..... **B**
- B. Conidia smooth or gently roughened ..... **C**
- B. Conidia roughened or verrucose ..... **D**
- C. Conidia 18-35  $\times$  15-20  $\mu\text{m}$  ..... *Ulocladium alternariae* (p. 98)
- C. Conidia 16-34  $\times$  10-15  $\mu\text{m}$  ..... *Ulocladium consortiale* (p. 99)
- D. Conidia with minute basal hilum ..... *Ulocladium botrytis* (p. 100)
- D. Conidia without minute basal hilum ..... **E**
- E. Conidiophores up to 120  $\mu\text{m}$  . ..... *Ulocladium atrum* (p. 101)
- E. Conidiophores up to 250  $\mu\text{m}$  ..... *Ulocladium oudemansii* (p. 102)
- 45 Conidia in chains ..... **46**
- 45 Conidia not in chains ..... **47**
- 46 Conidial scar not protuberant ..... *Phaeoramularia hachijoensis* (p. 103)
- 46 Conidial scar protuberant ..... *Cladosporium* (p. 104)
- A. Conidia not verrucose ..... **B**
- A. Conidia verrucose ..... **E**
- B. Conidia limoniform, 0-septate, 3-11  $\times$  2-5  $\mu\text{m}$   
..... *Cladosporium cladosporioides* (p. 104)
- B. Conidia 0-3-septate ..... **C**
- C. Conidia 1-septate, 5.5-10  $\times$  2.5-3  $\mu\text{m}$   
..... *Cladosporium uniseptosporum* (p. 106)
- C. Conidia not commonly 1-septate ..... **D**
- D. Conidial septa dark brown, conidia commonly 2-septate, 5-25  $\times$  3-8  $\mu\text{m}$   
..... *Cladosporium acaciicola* (p. 107)
- D. Conidia 0-3-septate, 3-20  $\times$  2.5-6  $\mu\text{m}$  ..... *Cladosporium apicale* (p. 108)
- E. Conidia 0-1-septate, 5-23  $\times$  3-8  $\mu\text{m}$  ..... *Cladosporium herbarum* (p. 109)
- E. Conidia 0-3-septate, 9-28  $\times$  5-13  $\mu\text{m}$   
..... *Cladosporium macrocarpum* (p. 110)
- 47 Conidia septate or pseudoseptate ..... *Curvularia* (p. 111)
- A. Conidia slightly curved, 15-32  $\times$  5-12.5  $\mu\text{m}$

	.....	<i>Curvularia pallescens</i> (p. 111)
	A. Conidia clavate, 17-29 × 7-13 μm	<i>Curvularia clavata</i> (p. 112)
47	Conidia 0-septate	<b>48</b>
48	Branches of the conidiophores verticillate	<i>Verticicladium trifidum</i> (p. 113)
48	Branches of the conidiophores absent or not verticillate	<i>Rhinocladiella</i> (p. 114)
	A. Ramo-conidia present	<i>Rhinocladiella ellisii</i> (p. 114)
	A. Ramo-conidia absent	<i>Rhinocladiella atrovirens</i> (p. 115)
49	Conidia branched	<b>50</b>
49	Conidia not branched	<b>51</b>
50	Conidiogenous cell not percurrent	<i>Pseudodictyosporium wauense</i> (p. 116)
50	Conidiogenous cell percurrent	<i>Triposporium elegans</i> (p. 117)
51	Conidia with lateral protuberances bearing claw-or spine	
	.....	<i>Arachnophora fagicola</i> (p. 118)
51	Conidia without lateral protuberances bearing claw-or spine	<b>52</b>
52	Conidia muriform	<b>53</b>
52	Conidia not muriform	<b>54</b>
53	Conidiogenous cell percurrent	<i>Stemphylium</i> (p. 119)
	A. Conidia smooth, 30-50 × 22-33 μm	<i>Stemphylium sarciniforme</i> (p. 119)
	A. Conidia verrucose	<b>B</b>
	B. Conidia with up to 6 transverse septa, 20-50 × 15-26 μm	
	.....	<i>Stemphylium vesicarium</i> (p. 120)
	B. Conidia with 3 transverse septa, 27-42 × 24-30 μm	
	.....	<i>Stemphylium botryosum</i> (p. 121)
53	Conidiogenous cell not percurrent	
	.....	<i>Spegazzinia</i> (p. 122)
	I Two types of conidia	<i>Spegazzinia tessartheta</i> (p. 122)
	II Conidia not of two types	<i>Spegazzinia parkeri</i> (p. 123)
54	Conidiogenous cell ampulliform, ellipsoidal, spherical	<b>55</b>
54	Conidiogenous cell cylindrical	<b>58</b>
55	Conidiogenous cell on dark brown vesicles	<i>Zygosporium</i> (p. 124)
	A. Conidiophores setiform	<b>B</b>
	A. Conidiophores not setiform	<b>C</b>
	B. Conidiophores knob on sterile apical region	
	.....	<i>Zygosporium echinosporum</i> (p. 124)
	B. Conidiophores without knob on sterile apical region	
	.....	<i>Zygosporium minus</i> (p. 125)
	C. Conidia ellipsoidal	<i>Zygosporium mycophilum</i> (p. 126)
	C. Conidia spherical	<i>Zygosporium gibbum</i> (p. 127)
55	Conidiogenous cell not on dark brown vesicles	<b>56</b>
56	Conidia 0-septate, conidiophores usually macronematous	<i>Periconia</i> (p. 128)
	A. Conidia ellipsoidal 10-33 × 6-12 μm	<i>Periconia echinochloae</i> (p. 128)
	A. Conidia spherical	<b>B</b>
	B. Conidia 4-11 μm	<b>C</b>
	B. Conidia 10-16 μm	<b>D</b>
	C. Conidia 4-6 μm	<i>Periconia minutissima</i> (p. 129)



- C. Conidia 7-11  $\mu\text{m}$  ..... *Periconia digitata* (p. 130)  
 D. Conidia dark brown 13-16  $\mu\text{m}$  ..... *Periconia cookei* (p. 131)  
 D. Conidia brown 10-15  $\mu\text{m}$  ..... *Periconia byssoides* (p. 132)
- 56 Conidia 0-1-multiseptate, conidiophores micronematous or semi-macronematous **57**
- 57 Conidiogenous cell generally polyblastic, differentiated ..... *Torula* (p. 133)  
 A. Conidia mostly 1-septate ..... *Torula ellisii* (p. 133)  
 A. Conidia not mostly 1-septate ..... **B**  
 B. Conidia 3-10-septate, 20-70  $\times$  5-9  $\mu\text{m}$  ..... *Torula herbarum* (p. 134)  
 B. Conidia 1-3-septate, 10-17  $\times$  5-7  $\mu\text{m}$   
 ..... *Torula herbarum* f. *quaternella* (p. 135)
- 57 Conidiogenous cells monoblastic, undifferentiated . . . . *Rutola graminis* (p. 136)
- 58 Conidia 0-septate ..... *Domingoella asterinarum* (p. 137)
- 58 Conidia septate or pseudoseptate ..... **59**
- 59 Conidia obovoid ..... *Endophragmiella boewei* (p. 138)
- 59 Conidia cylindrical obclavate ..... **60**
- 60 Conidiogenous cells tretic ..... *Corynespora cassiicola* (p. 139)
- 60 Conidiogenous cells blastic ..... **61**
- 61 Conidia not catenate ..... *Sporidesmium* (p. 140)  
 A. Conidia 110-375  $\times$  14-20  $\mu\text{m}$ , conidiophores 20-45  $\times$  7-10  $\mu$   
 ..... *Sporidesmium adscendens* (p. 140)  
 A. Conidia 15-67  $\mu\text{m}$  ..... **B**  
 B. Conidia subhyaline to pale brown ..... *Sporidesmium dioscoreae* (p. 141)  
 B. Conidia brown or dark brown ..... **C**  
 C. Conidia 15-31  $\mu\text{m}$  long ..... **D**  
 C. Conidia 36-67  $\mu\text{m}$  long ..... *Sporidesmium nodipes* (p. 142)  
 D. Conidia 15-21  $\times$  6-8  $\mu\text{m}$ , terminal cell subhyaline  
 ..... *Sporidesmium coffeicola* (p. 143)  
 D. Conidia 19-31  $\times$  7-9  $\mu\text{m}$ , terminal cell not subhyaline  
 ..... *Sporidesmium parvum* (p. 144)
- 61 Conidia catenate ..... *Septonema hormiscium* (p. 146)

## Characters of the genera and species

### *Minimidochium* B. Sutton (1969, Can. J. Bot., 47: 2095)

Stromata mostly superficial, brown. Sporodochia punctiform, pulvinate, setose, dark brown to black. Setae unbranched, mid to dark brown, smooth. Conidiophores macronematous, forming a close palisade among the setae, hyaline to clear brown, smooth. Conidiogenous cells monophialidic, integrated, terminal or discrete, sub-cylindrical, cylindrical to clavate, with a small apical collarette. Conidia semi-endogenous or acrogenous, sub-cylindrical, curved, aseptate, hyaline, smooth, with a setula at each end.

Type species: *Minimidochium setosum* B. Sutton, 1969.

Sutton 1969; Ellis 1976.

### *Minimidochium setosum* B. Sutton 1969, Can. J. Bot., 47: 2095.

Sporodochia amphigenous, mostly epiphyllous, pulvinate, setose, dark brown to black, up to 100  $\mu\text{m}$  in diameter. Setae unbranched, mid to dark brown, smooth,  $50\text{--}75 \times 4\text{--}8 \mu\text{m}$ . Conidiophores macronematous, forming a close palisade among the setae, hyaline to clear brown, smooth. Conidiogenous cells monophialidic, integrated, terminal, cylindrical, with a small apical collarette. Conidia semi-endogenous, sub-cylindrical, curved, aseptate, hyaline, smooth,  $8\text{--}10 \times 2\text{--}2.5 \mu\text{m}$ , with a setula at each end  $5\text{--}8 \mu\text{m}$  long (Fig. 1).

On dead leaves of *Chamaerops humilis*.

Ellis 1976.

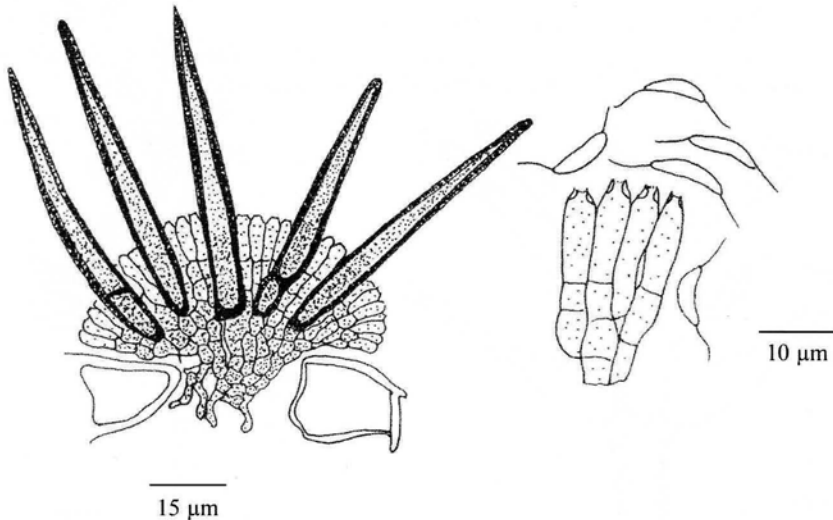


Fig. 1 - *Minimidochium setosum*. Sporodochium with a close palisade of conidiophores. Setae unbranched. Conidiogenous cells monophialidic, terminal. Conidia sub-cylindrical, curved, with a setula at each end, aseptate, hyaline.

*Selenosporella* G. Arnaud

(1968, Scient. Proc. R. Dublin Soc., Ser. B, 2: 153)

Conidiophores macronematous, mononematous, erect or flexuous, branched, branches verticillate, smooth. Conidiogenous cells, polyphialidic, integrated and terminal or discrete, in verticils, sympodial, cylindrical, with protruding denticular collarettes. Conidia aggregated, semi-endogenous, straight or gently curved, acerose or cylindrical, aseptate, colourless or pale olive, smooth.

Type species: *Selenosporella curvispora* G. Arnaud, 1968.

Ellis 1971; Mercado Sierra & al. 1997.

*Selenosporella curvispora* G. Arnaud, 1968, Scient. Proc. R. Dublin Soc., Ser. B, 2: 153.

Conidiophores macronematous, mononematous, erect or flexuous, brown, smooth, up to  $250 \times 5-6 \mu\text{m}$ . Conidiogenous cells polyphialidic, integrated, terminal or discrete, in verticils, sympodial, cylindrical, with protruding denticular collarettes  $12-19 \times 3-4.5 \mu\text{m}$ . Conidia in slimy masses, semi-endogenous, straight or gently curved, acerose or cylindrical, rounded at the apex tapered at the base, aseptate, colourless, smooth,  $5-7 \times 0.5 \mu\text{m}$  ( $7.5-12 \times 0.8-1.3 \mu\text{m}$ , Matsushima 1975) (Fig. 2).

On dead leaves of *Cistus monspeliensis*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Quercus ilex*.

Ellis 1971; Matsushima 1975.

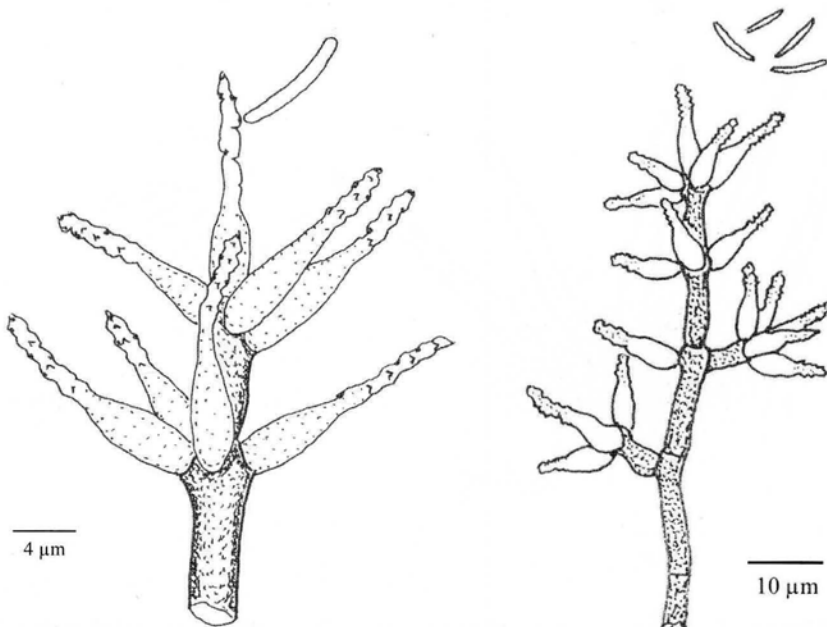


Fig. 2 - *Selenosporella curvispora*. Conidiophores with several polyphialidic, sympodial conidiogenous cells. Conidia acerose, 0-septate, colourless.

***Stachybotrys* Corda**  
(1837, Icon. Fung., 1: 21)

Conidiophores macronematous, mononematous, erect or flexuous, simple or branched, colourless to strongly pigmented, smooth or verrucose, sometimes with dark granules. Conidiogenous cells monophialidic, discrete, determinate, in groups at the apex of each stipe or branch, clavate, ellipsoidal or broadly fusiform, usually with a very small opening. Conidia aggregated in glistening heads, acrogenous, simple, cylindrical or ellipsoidal, reniform or subspherical, 0-septate, grey to black, smooth or verrucose, sometimes with dark granules or with longitudinal striations.

Type species: *Stachybotrys atra* Corda, 1837.

Ellis 1971; Domsch & al. 1993; Mercado Sierra & al. 1997.

***Stachybotrys atra* Corda, 1837, Icon. Fung., 1: 21.**

Conidiophores macronematous, mononematous simple or branched, olivaceous, brown to black at maturity, rough or with granules towards the apex, up to  $100 \times 3-5 \mu\text{m}$ . Conidiogenous cells in group at the apex of each branch and stipe, monophialidic, determinate, clavate,  $10-13 \times 4-6 \mu\text{m}$ . Conidia ellipsoidal, subspherical, 0-septate, dark blackish brown to black, verrucose,  $8-11 \times 5-10 \mu\text{m}$  (Fig. 3).

Synonym: *Stachybotrys atrogrisea* Ellis & Everh., 1888.

On dead leaves of *Chamaerops humilis*, *Cistus incanus*, *Euphorbia dendroides*, *Juniperus oxycedrus* L. ssp. *macrocarpa* (Sm.) Ball, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Quercus ilex*, *Rosmarinus officinalis*.

Ellis 1971; Matsushima 1975; Ellis & Ellis 1997, 1998.

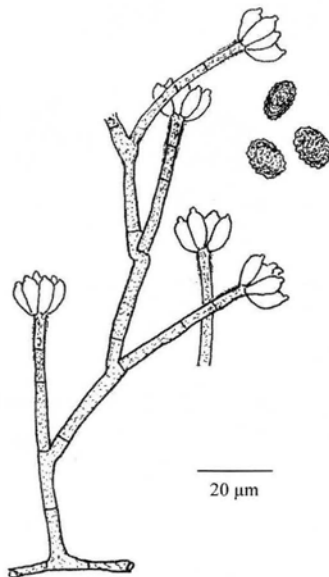


Fig. 3 - *Stachybotrys atra*. Conidiophores repeatedly branched. Conidiogenous cells monophialidic, determinate. Conidia ellipsoidal, 0-septate, dark blackish brown, verrucose.

*Stachybotrys chartarum* (Ehrenb.) S. Hughes, 1958, Can. J. Bot., 36: 812.

Conidiophores macronematous, mononematous, not branched, erect, pale olive in the upper part, smooth or verrucose, usually about  $100 \times 3-6 \mu\text{m}$ . Conidiogenous cells monophialidic, verticillate, determinate, clavate, pale olive,  $9-14 \times 4-6 \mu\text{m}$ . Conidia ellipsoidal, 0-septate, dark brownish grey, verrucose,  $7-12 \times 4-6 \mu\text{m}$  (Fig. 4).

Basionym: *Stilbospora chartarum* Ehrenb., 1818.

Synonym: *Oospora chartarum* (Ehrenb.) Wallr., 1833.

On dead leaves of *Chamaerops humilis*.

Matsushima 1971; Domsch & al. 1993; Mercado Sierra & al. 1997.

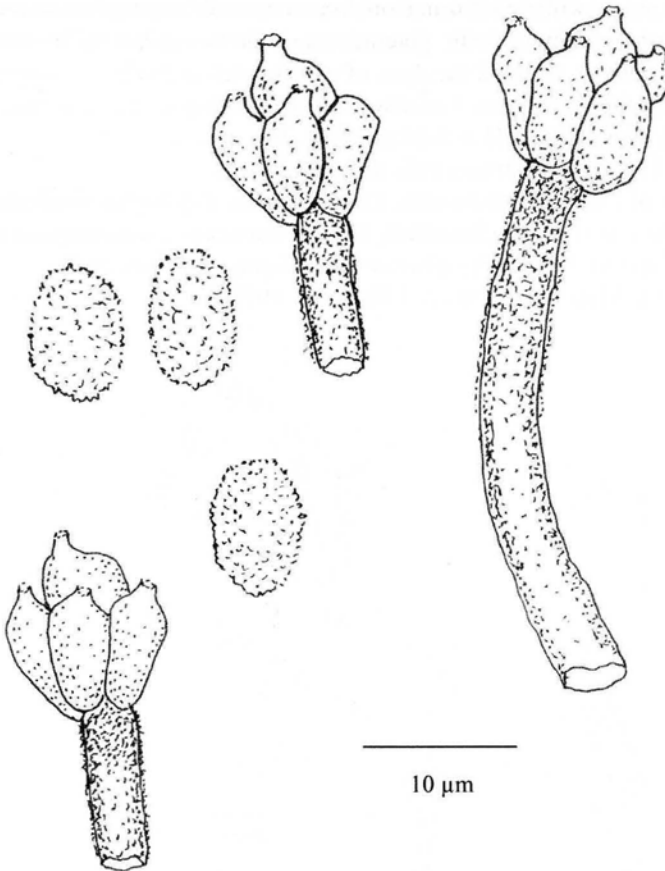


Fig. 4 - *Stachybotrys chartarum*. Conidiophores erect, not branched. Conidiogenous cells monophialidic, determinate. Conidia ellipsoidal, 0-septate, dark brown to grey, verrucose.

*Phialocephala* W.B. Kendr.  
(1961, Can. J. Bot., 39: 1079)

Conidiophores macronematous, mononematous or occasionally caespitose, erect, repeatedly branched at the apex, dark brown, smooth. Conidiogenous cells aggregated as penicillium like structures, monophialidic usually with evident collarette, discrete, determinate, lageniform, subulate. Conidia frequently aggregated at the sporogenous head, endogenous or semi-endogenous, cylindrical truncate at the ends, ellipsoidal or subspherical, aseptate, hyaline, smooth.

Type species: *Phialocephala dimorphospora* W. B. Kendr., 1961.  
Kendrick 1961; Mercado Sierra & al. 1997.

*Phialocephala humicola* S. C. Jong & E. E. Davis, 1973, Mycologia, 64: 1352.

Conidiophores macronematous, mononematous, erect, repeatedly branched at the apex, brown, smooth, up to  $700 \times 3-8 \mu\text{m}$ . Conidiogenous cells aggregated as penicillium like structures, monophialidic, discrete, determinate, without evident collarettes, lageniform, subulate, pale brown,  $5-12 \times 1-2 \mu\text{m}$ . Conidia semi-endogenous, ellipsoidal, hyaline, mostly  $3-3.5 \times 2 \mu\text{m}$  (Fig. 5).

On dead leaves of *Juniperus phoenicea*, *Quercus ilex*, *Taxus baccata*.  
Ellis 1976.

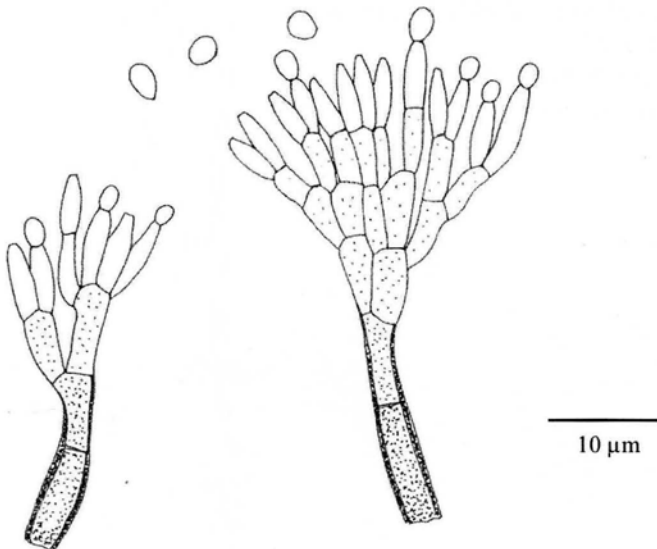


Fig. 5 - *Phialocephala humicola*. Conidiophores erect, branched at the apex. Conidiogenous cells monophialidic, determinate, penicillate. Conidia ellipsoidal, hyaline.

***Gonytrichum* Nees & T. Nees**

(1818, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur., 9: 244)

Conidiophores macronematous, mononematous, simple or branched, erect or flexuous, sometimes setiform with characteristic collar branches encircling conidiophores. Conidiogenous cells aggregated on collar branches, monophialidic, integrated and terminal or discrete, determinate, rarely percurrent, cylindrical or lageniform, with collarettes. Conidia aggregated in slimy heads or cirrhi, acrogenous and semi-endogenous, ellipsoidal, subspherical, cylindrical, aseptate, hyaline or very pale olive, smooth.

Type species: *Gonytrichum caesium* Nees, 1818.

Ellis 1971; Gams & Holubová-Jechová 1976; Domsch & al. 1993; Mercado Sierra & al. 1997.

***Gonytrichum chlamydosporium*** G. L. Barron & G. C. Bhatt, 1967, Mycopath. Mycol. appl., 32: 126

Conidiophores macronematous, mononematous, usually setiform, dark brown, with collar branches regularly present,  $100-300 \times 2.5-3.5 \mu\text{m}$ . Conidiogenous cells aggregated on collar branches, monophialidic, terminal or discrete, with collarettes, pale brown,  $5-20 \times 2.5-3.5 \mu\text{m}$ . Conidia acrogenous, aggregated in green cirrhi, semi-endogenous, ellipsoidal very clear brown, aseptate, smooth,  $2-4.5 \times 1-2 \mu\text{m}$  (Figs. 6, 7). Chlamydospores not formed in natural substratum.

Anamorph of *Melanopsammella chloroconica* (W. Gams & Hol.-Jech.) Réblová, M. E. Barr & Samuels, 1999.

On dead leaves of *Cistus salvifolius*, *Quercus ilex*.

Barron & Bhatt 1967;

Gams & Holubová-Jechová 1976;

Mercado Sierra & al. 1997.

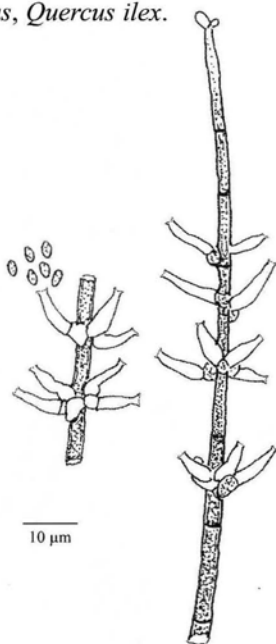


Fig. 6 - *Gonytrichum chlamydosporium*. Conidiophores setiform. Conidiogenous cells monophialidic, determinate, on collar branches. Conidia semi-endogenous, ellipsoidal, 0-septate, clear brown, smooth.



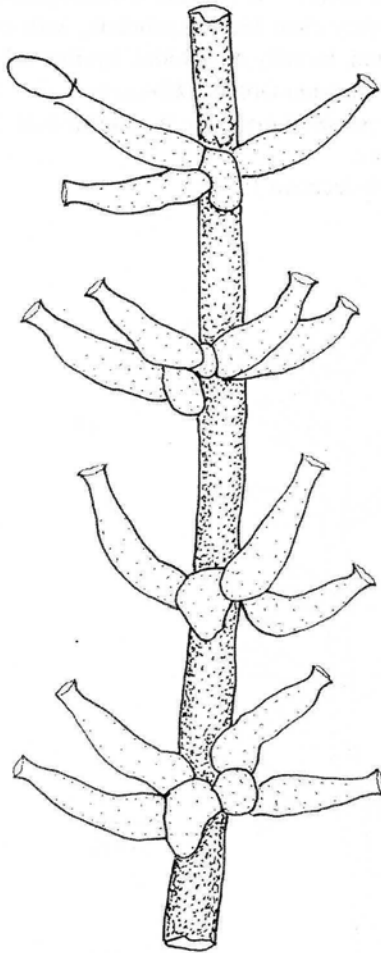


Fig. 7 – *Gonytrichum chlamydosporium*. Detail of conidiogenous cells on collar branches.

***Phaeostalagmus*** W. Gams  
(1976, Stud. Mycol., 13: 90)

Conidiophores macronematous, mononematous, erect, branched, dark brown. Conidiogenous cells verticillate, discrete, monophialidic, determinate, flask-shaped, pigmented, with evident collarettes. Conidia ellipsoidal, aseptate, hyaline.  
Type species: *Phaeostalagmus cyclosporus* (Grove) W. Gams, 1976.  
Gams & Holubová-Jechová 1976.

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

Conidiophores macronematous, mononematous, erect, branched, branches sometimes verticillate, dark brown, 160 (or more)  $\times$  2.5-3  $\mu\text{m}$ . Conidiogenous cells often verticillate, monophialidic, determinate, very clear brown, subulate, with evident collarettes, 6-12  $\times$  1.7-2.5  $\mu\text{m}$ . Conidia aggregated, broadly ellipsoidal, hyaline 1.5-3  $\times$  1-2  $\mu\text{m}$  (Figs. 8, 9).  
Basionym: *Stachylidium cyclosporum* Grove, 1884.  
Synonym: *Verticillium cyclosporum* (Grove) E. W. Mason & S. Hughes, 1951.  
On dead leaves of *Quercus ilex*.  
Ellis 1971; Gams & Holubová-Jechová 1976.

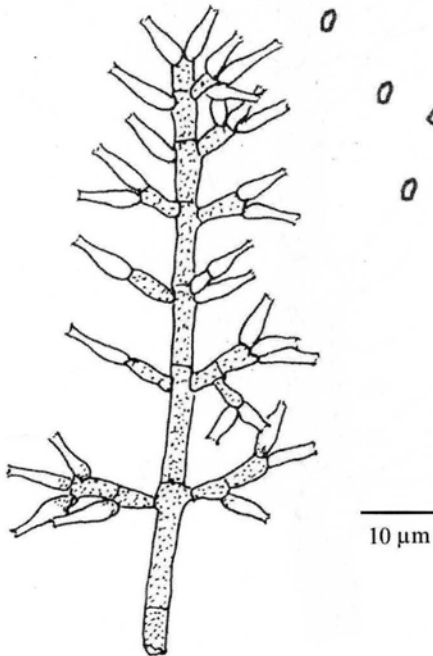


Fig. 8 - *Phaeostalagmus cyclosporus*. Conidiophores erect, branched. Conidiogenous cells monophialidic, determinate, often verticillate. Conidia ellipsoidal, hyaline.

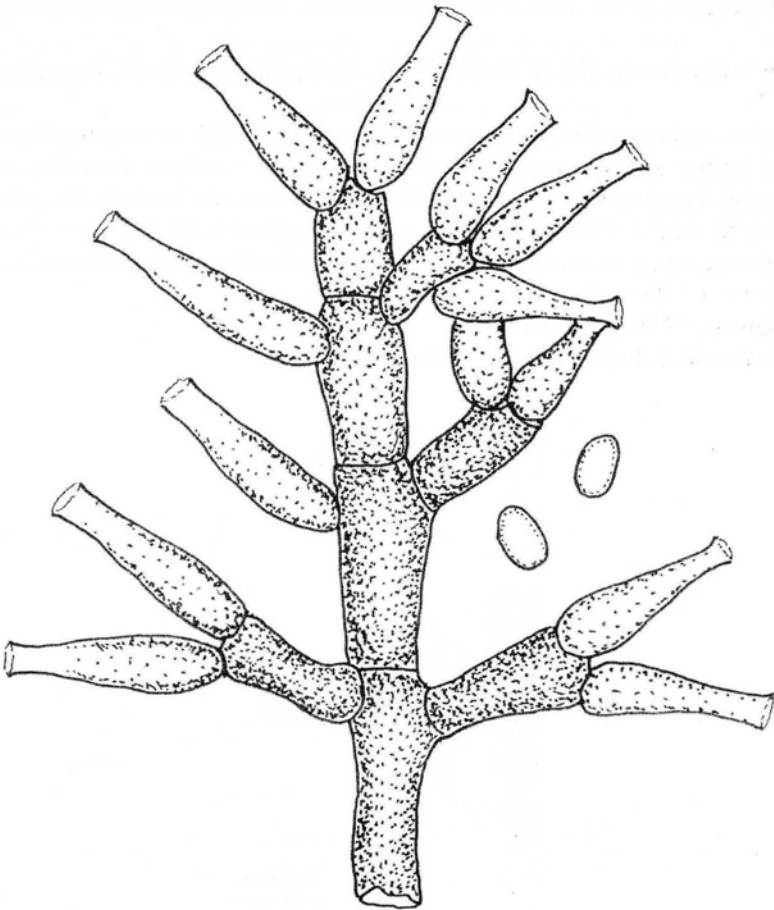


Fig. 9 – *Phaeostalagmus cyclosporus*. Detail of phialidic conidiogenous cells.

***Chalara*** (Corda) Rabenh.  
(1844, *Deutschl. Krypt.-Flora*, 1: 38)

Conidiophores macronematous, sometimes micronematous, mononematous, scattered or caespitose, straight or slightly flexuous, simple, rarely branched, hyaline, subhyaline, brown, smooth or verrucose. Conidiogenous cells monophialidic, integrated, terminal, determinate, occasionally percurrent, composed of a well-differentiated venter and usually a long neck. Conidia solitary or catenate, endogenous, cylindrical or oblong with rounded or truncate ends, 0-3-septate, colourless, sometimes brown, smooth or with the ends verruculose.

Type species: *Chalara fusidioides* (Corda) Rabenh., 1844.

Ellis 1971; Nag Raj & Kendrick 1975; Domsch & al. 1993; Mercado Sierra & al. 1997.

***Chalara brevispora*** Nag Raj & W. B. Kendr., 1975, *Monograph of Chalara and Allied Genera*: 97.

Conidiophores macronematous, mononematous, erect, straight or variously bent, simple, cylindrical, brown, smooth or slightly verrucose, 41-145 × 3-5 μm. Conidiogenous cells monophialidic, integrated, terminal, sometimes percurrent, obclavate to lageniform, pale brown, smooth, venter 19-45 × 3.5-6 μm, neck cylindrical 9-20 × 2-3 μm. Conidia frequently catenate, endogenous, cylindrical with rounded or blunt ends, aseptate, colourless, smooth, 2-4 × 1.5-2 μm (Fig. 10).

On dead leaves of *Myrtus communis*.

Nag Raj & Kendrick 1975; Mercado Sierra & al. 1997.

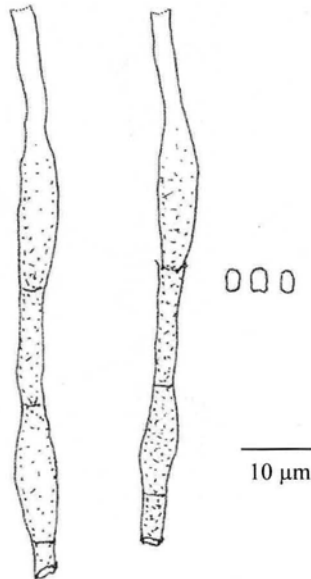


Fig. 10 - *Chalara brevispora*. Conidiogenous cells monophialidic, integrated, terminal, sometimes percurrent. Conidia endogenous, frequently in chains, cylindrical, 0-septate, colourless, smooth.

*Chalara aurea* (Corda) S. Hughes, 1958, Can. J. Bot., 36: 747.

Conidiophores macronematous, mononematous, erect or slightly flexuous, unbranched, clear brown, smooth,  $33\text{-}97 \times 3.5\text{-}7.5 \mu\text{m}$ . Conidiogenous cells monopialidic, integrated, terminal, rarely percurrent, lageniform with a long cylindrical neck,  $29\text{-}76 \times 3.5\text{-}8.3 \mu\text{m}$  at the swollen base ( $2\text{-}4 \mu\text{m}$  at the neck). Conidia endogenous, catenate, cylindrical with rounded apex and truncate base, 1-septate rarely aseptate, colourless, smooth,  $8\text{-}19 \times 2\text{-}2.5 \mu\text{m}$  (Fig. 11).

Basionym: *Menispora aurea* Corda, 1838.

Synonym: *Cylindrocephalum aureum* (Corda) Bonord., 1851.

On dead leaves of *Quercus ilex*

Ellis 1971; Nag Raj & Kendrick 1975; Mercado Sierra & al. 1997.

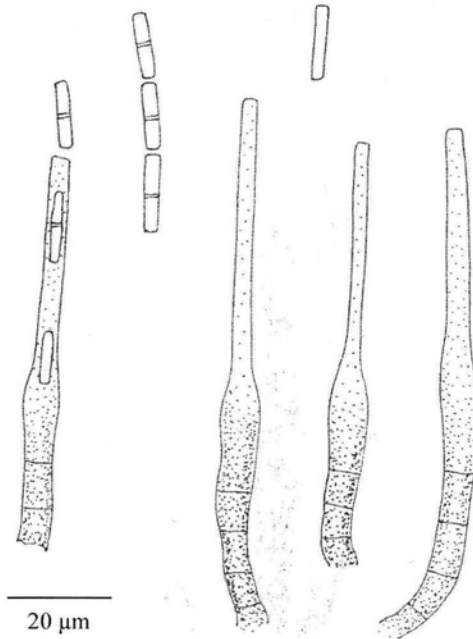


Fig. 11 - *Chalara aurea*. Conidiogenous cells monopialidic, integrated, terminal, rarely percurrent. Conidia endogenous, in chains, cylindrical, 1-septate or rarely aseptate, colourless, smooth.

*Chalara cylindrosperma* (Corda) S. Hughes, 1958, Can. J. Bot., 36: 747.

Conidiophores macronematous, mononematous, erect, unbranched, cylindrical, clear brown, smooth,  $32-190 \times 3-7 \mu\text{m}$ . Conidiogenous cells monophialidic, integrated, terminal, lageniform, pale brown, smooth,  $16-47 \times 4.5-8 \mu\text{m}$  ( $2-3 \mu\text{m}$  at the neck). Conidia endogenous, solitary or catenate, cylindrical, with truncate ends or sometimes rounded at the apex, aseptate, colourless, smooth,  $5.5-17 \times 1.5-2.5 \mu\text{m}$  (Fig. 12).

Basionym: *Menispora cylindrosperma* Corda, 1837.

On dead leaves of *Phillyrea angustifolia*.

Ellis 1971; Nag Raj & Kendrick 1975; Mercado Sierra & al. 1997.

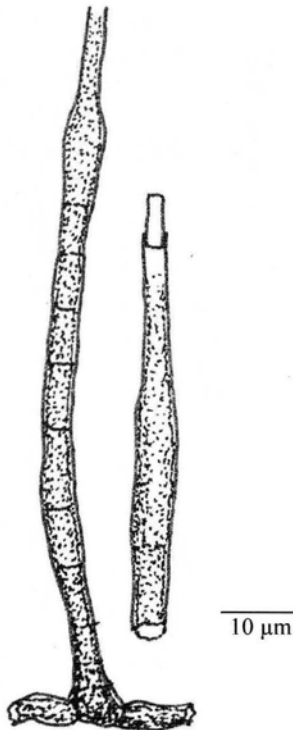


Fig. 12 - *Chalara cylindrosperma*. Conidiogenous cells monophialidic, integrated, terminal. Conidia endogenous, cylindrical, 0-septate, colourless, smooth.

*Chalara microspora* (Corda) S. Hughes, 1958, Can. J. Bot., 36: 747.

Conidiophores macronematous, often micronematous, scattered to caespitose, unbranched, pale brown, moderately constricted at the septa, smooth,  $19-51 \times 2.5-6.5 \mu\text{m}$ . Conidiogenous cells monophialidic, integrated, terminal, rarely percurrent, obclavate to lageniform,  $18-36 \times 2.5-6.5 \mu\text{m}$  ( $1-2.5 \mu\text{m}$  at the neck). Conidia endogenous, in long chains, cylindrical, aseptate, hyaline, smooth,  $3-8.5 \times 1-1.5 \mu\text{m}$  (Fig. 13).

Basionym: *Fusidium clandestinum* var. *microsporum* Corda, 1838.

Synonym: *Cylindrium clandestinum* var. *microsporium* (Corda) Sacc., 1886.

On dead leaves of *Myrtus communis*.

Nag Raj & Kendrick 1975.

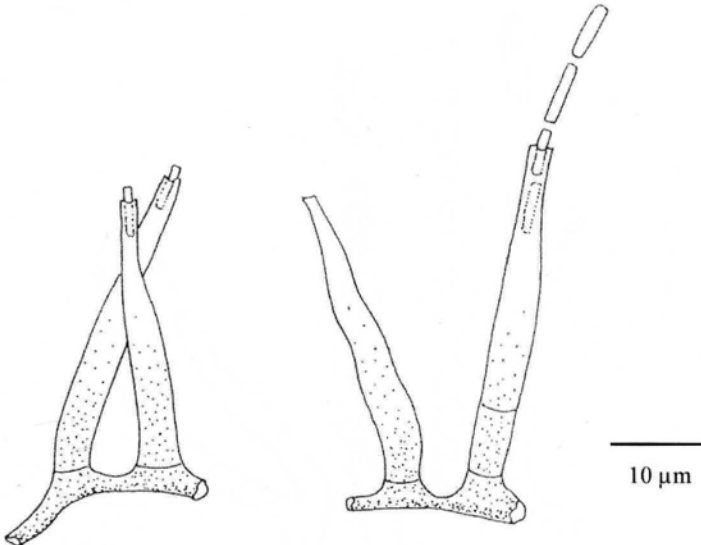


Fig. 13 - *Chalara microspora*. Conidiophores often micronematous, unbranched. Conidiogenous cells monophialidic, integrated, terminal, rarely percurrent. Conidia endogenous, in chains, 0-septate, hyaline, smooth.



*Gliomastix* Guég.

(1905, Bull. Soc. mycol. Fr., 21: 240)

Conidiophores macronematous, mononematous, erect or flexuous, occasionally forked near the base, colourless or dark, smooth or verrucose. Conidiogenous cells monophialidic, integrated, terminal, determinate, sometimes percurrent, collarettes often present, subulate. Conidia catenate or in slimy heads, semi-endogenous, doliiform, ellipsoidal, fusiform, pyriform, reniform, spherical or subspherical, aseptate, strongly pigmented when in mass, smooth or verrucose.

Type species: *Gliomastix chartarum* (Corda) Guég., 1905.

Ellis 1971; Mercado Sierra & al. 1997.

*Gliomastix macrocylindrica* K. Matsush. & Matsush., 1995, Matsushima Mycological Memoirs, 8: 51.

Conidiophores macronematous, mononematous, erect, sometimes branched, cylindrical, hyaline,  $15-30 \times 3-3.5 \mu\text{m}$ . Conidiogenous cells monophialidic with a large carbonaceous collarette, integrated, terminal, sometimes percurrent,  $13-19.5 \times 2-3.5 \mu\text{m}$ . Conidia semi-endogenous, in slimy heads, cylindrical rounded at the ends, with basal scar, aseptate, olivaceous,  $5-14 \times 2-3 \mu\text{m}$  (Fig. 14).

On dead leaves of *Pistacia lentiscus*.

Matsushima 1995; Mulas & al. 2002.

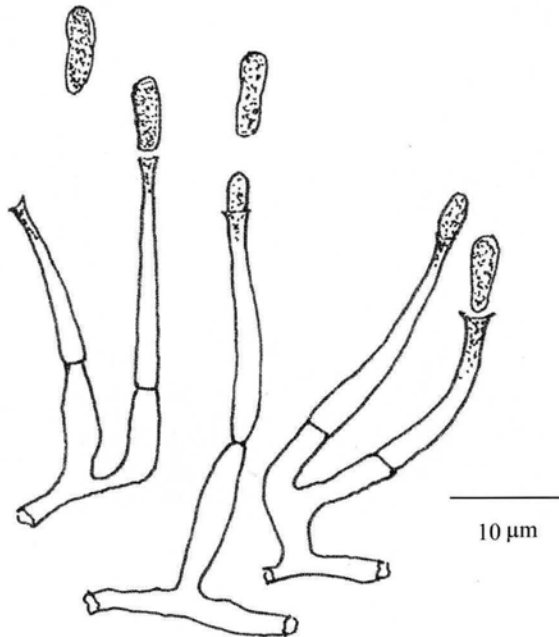


Fig. 14 - *Gliomastix macrocylindrica*. Conidiogenous cells monophialidic, terminal, sometimes percurrent. Conidia semi-endogenous, cylindrical, 0-septate, olivaceous.

*Aureobasidium* Viala & G. Boyer  
(1891, Rev. Gén. Bot., 3: 371)

Conidiophores micronematous, mononematous, branched, flexuous, hyaline to dark brown at maturity, smooth. Conidiogenous cells monophialidic, integrated, intercalary, determinate, cylindrical. Conidia in slimy masses, semi-endogenous, pleurogenous, simple, ellipsoidal or ovoid, aseptate, hyaline or colourless, smooth, secondary conidia produced by yeast-like budding of primary conidia.

Type species: *Aureobasidium vitis* Viala & G. Boyer, 1891.

Ellis 1971; Hermanides-Nijhof 1977.

*Aureobasidium pullulans* (de Bary) G. Arnaud var. *pullulans*, 1918, Annals d'École National d'Agric. de Montpellier, N. S. 16: 39.

Conidiophores micronematous, mononematous, branched, brown, 5-8  $\mu\text{m}$  thick. Conidiogenous cells monophialidic, integrated, intercalary, determinate. Conidia in slimy masses semi-endogenous, ovoid, aseptate, hyaline or colourless, 4-6  $\times$  2-3  $\mu\text{m}$  but may be up to 12  $\times$  6  $\mu\text{m}$  in old colonies, secondary conidia produced by yeast-like budding of primary conidia (Fig. 15).

Basionym: *Dematium pullulans* de Bary & Löwenthal.

Synonyms: *Aureobasidium pullulans* (de Bary) G. Arnaud, 1918; *Aureobasidium oleae* (Castagne) Subram., 1971.

On dead leaves of *Myrtus communis*.

Ellis 1971; Hermanides-Nijhof 1977.

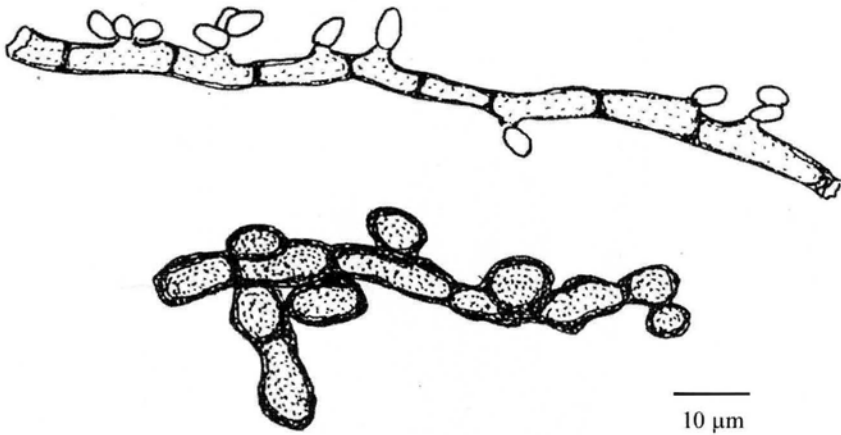


Fig. 15 - *Aureobasidium pullulans* var. *pullulans*. Conidiophores micronematous. Conidiogenous cells monophialidic, determinate. Conidia semi-endogenous, ovoid, 0-septate, hyaline or colourless.

***Kylindria*** Di Cosmo, S. M. Berch & W. B. Kendr.  
(1983, *Micologia*, 75: 970)

Stromata present. Conidiophores macronematous, solitary or caespitose setiform, erect, unbranched, straight or curved, brown, smooth. Conidiogenous cells monophialidic, determinate, integrated, terminal. Conidia produced in slimy masses, semi-endogenous, oblong-ellipsoid, with truncate base, aseptate or septate, sometimes guttulate, smooth.

Type species: *Kylindria triseptata* (Matsush.) Di Cosmo, S. M. Berch & W. B. Kendr., 1983.

Di Cosmo & al. 1983; Rambelli & Onofri 1987; Mercado Sierra & al. 1997.

***Kylindria keitae*** Rambelli & Onofri, 1987, *Trans. Br. mycol. Soc.*, 88: 393.

Stromata superficial. Conidiophores macronematous, solitary or more frequently aggregated in groups on a basal stroma, erect, straight or slightly flexuous, typically unbranched, occasionally irregularly branched, smooth, thick-walled, dark brown at the base, tapering and paler towards the fertile apex,  $48.5\text{--}162 \times 3.5\text{--}5 \mu\text{m}$ . Conidiogenous cells monophialidic, integrated and terminal, determinate, subulate and slightly flattened at the open-ended apex, very pale brown or subhyaline,  $20\text{--}36 \times 3.5\text{--}5.5 \mu\text{m}$ . Conidia semi-endogenous in slimy masses, oblong-ellipsoidal, subspherical, truncated at the base, aseptate, or septate during germination, hyaline, guttulate, smooth,  $12.5\text{--}16.5 \times 4.5\text{--}5.5 \mu\text{m}$  (Fig. 16).

On dead leaves of *Juniperus phoenicea*, *Olea europaea* var. *sylvestris*, *Phillyrea latifolia*, *Pistacia lentiscus*.

Rambelli & Onofri 1987.

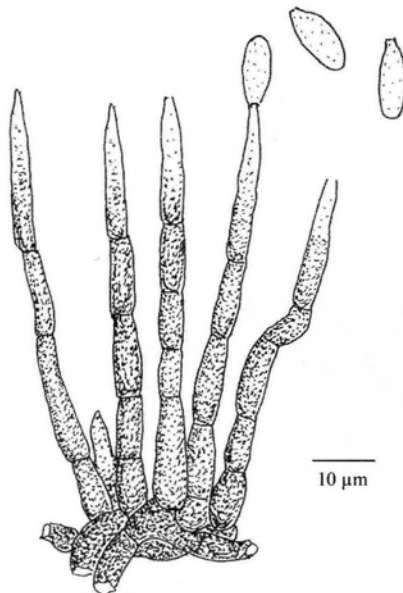


Fig. 16 - *Kylindria keitae*. Conidiophores caespitose. Conidiogenous cells monophialidic, integrated, terminal, determinate. Conidia semi-endogenous, ellipsoidal, 0-septate, hyaline, smooth.

*Chloridium* Link

(1809, Magaz. Ges. naturf. Freunde Berl., 3: 13)

Conidiophores macronematous, mononematous, erect or flexuous, solitary, unbranched, pale to brown, smooth. Conidiogenous cells monophialidic, integrated, terminal, usually percurrent, sometimes sympodial, more or less cylindrical, with collarettes wide or narrow and deep or short. Conidia semi-endogenous or exogenous, solitary or in slimy masses, often in long columns, ellipsoidal or subspherical, cylindrical or triangular, aseptate, hyaline, frequently greenish in mass, smooth. Chlamydospores formed in some species.

Type species: *Chloridium viride* Link, 1809.

Ellis 1971; Gams & Holubová-Jechová 1976; Mercado Sierra & al. 1997.

*Chloridium virescens* (Pers.) W. Gams & Hol.-Jech. var. *virescens*, 1976, Stud. Mycol., 13: 17.

Conidiophores macronematous, mononematous, unbranched, mostly 30-60 (over 100) × 2.5-3.5 μm. Conidiogenous cells monophialidic, integrated, terminal, percurrent, with a very slight constriction below the collarette, collarettes inconspicuous, 2-2.5 μm wide. Conidia exogenous, short ellipsoidal, hyaline, mostly uniguttulate, smooth, 2.5-3.8 × 2-2.5 μm (Fig. 17).

Anamorph of *Melanopsammella vermicularioides* (Sacc. & Roum.) Réblová, M. E. Barr & Samuels 1999.

Basionym: *Dematium virescens* Pers., 1794.

Synonyms: *Chloridium viride* Link, 1809; *Helicosporium virescens* (Pers.) Sivan., 1984.

On dead leaves of *Cistus monspeliensis*, *Myrtus communis*, *Quercus ilex*.

Ellis 1971; Gams & Holubová-Jechová 1976.

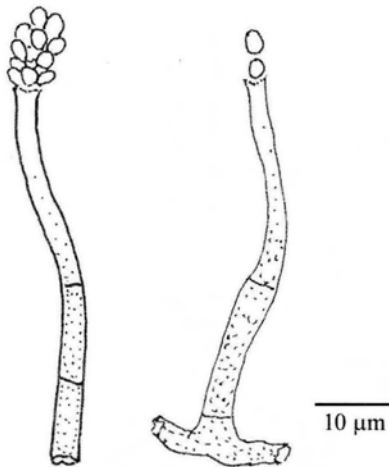


Fig. 17 - *Chloridium virescens* var. *virescens*. Conidiophores macronematous. Conidiogenous cells monophialidic, percurrent, terminal, collarettes inconspicuous. Conidia exogenous, ellipsoidal, hyaline, smooth.

*Chloridium botryoideum* (Corda) S. Hughes var. *botryoideum*, 1958, Can. J. Bot., 36: 748.

Conidiophores macronematous, mononematous, unbranched, of two types: very long conidiophores up to  $150$  or even  $250 \times 3-5 \mu\text{m}$ , dark brown, setiform, with conidiogenous cells phialidic, integrated, terminal, rarely sympodial; conidiophores of a second type up to  $20-40 (-100) \times 2-3 \mu\text{m}$ , light brown with conidiogenous cells phialidic, repeatedly sympodially proliferating. Both types producing hyaline phialide with a very short collarete. Percurrent proliferations rare. Conidia exogenous in slimy whitish or yellowish heads, frequently in imbricate simple chains, ellipsoidal to oblong ellipsoidal, often apiculate at the base, smooth,  $3-4.5 \times 0.8-1.2 \mu\text{m}$  (Fig. 18).

Anamorph of *Chaetosphaeria innumera* Berk. & Broome, 1863.

Basionym: *Fusidium botryoideum* Corda, 1837.

Synonym: *Chloridium botryoideum* (Corda) S. Hughes, 1958.

On dead leaves of *Myrtus communis*.

Hughes 1951 c; Hughes 1958; Gams & Holubová-Jechová 1976.

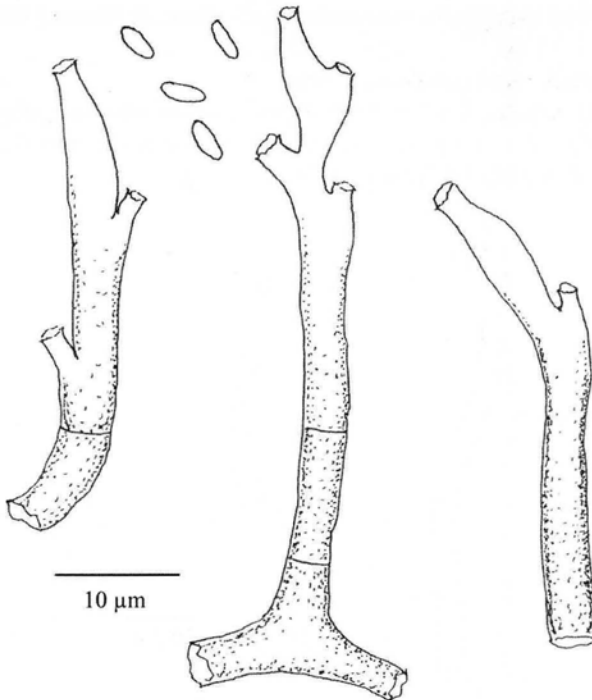


Fig. 18 - *Chloridium botryoideum* var. *botryoideum*. Conidiophores sometimes very long setiform. Conidiogenous cells phialidic, sympodial. Conidia exogenous, frequently in imbricate simple chains, ellipsoidal, hyaline, smooth.

***Cylindrotrichum* Bonord.**  
(1851, Handb. Allgem. Mykol.: 88)

Setae sometimes present, simple, brown. Conidiophores macronematous, mononematous, erect or flexuous, unbranched, cylindrical or subulate, clear to dark brown. Conidiogenous cells polyphialidic, integrated, terminal, sympodial, cylindrical to lageniform, with collarettes. Conidia aggregated, semi-endogenous, cylindrical, rounded at the ends, 0-3-septate, frequently 1-septate, colourless, smooth.

Type species: *Cylindrotrichum oligospermum* (Corda) Bonord., 1851.

Ellis 1971; Gams & Holubová-Jechoavá 1976; Carmichael & al. 1980; Mercado Sierra & al. 1997.

***Cylindrotrichum oligospermum* (Corda) Bonord., 1851, Handb. Allgem. Mykol.: 88.**

Setae present, simple, dark brown, up to 450  $\mu\text{m}$ . Conidiophores macronematous, mononematous, unbranched, brown, usually less than 75 (sometimes more 125)  $\times$  5-7  $\mu\text{m}$ . Conidiogenous cells polyphialidic, integrated, terminal, sympodial, cylindrical to lageniform, with collarettes. Conidia aggregated in slimy mass, semi-endogenous, cylindrical, colourless, smooth, 12-22  $\times$  2.5-3  $\mu\text{m}$  (11-16  $\times$  2-2.5, Gams & Holubová-Jechová 1976) (Fig. 19).

Basionym: *Menispora oligosperma* Corda, 1838.

Synonym: *Chaetopsis oligosperma* (Bonord.) Di Cosmo, S. M. Berch & W. B. Kendr., 1983.

On dead leaves of *Chamaerops humilis*, *Cistus monspeliensis*, *Ilex aquifolium*, *Juniperus phoenicea*, *Myrtus communis*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Smilax aspera*.

Ellis 1971; Gams & Holubová-Jechová 1976; Ellis & Ellis 1997.

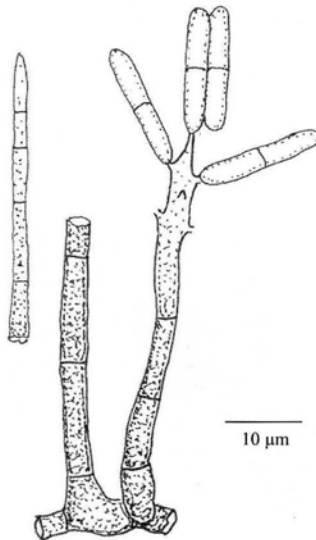


Fig. 19 - *Cylindrotrichum oligospermum*. Setae present. Conidiogenous cells polyphialidic, sympodial, with collarettes. Conidia semi-endogenous, cylindrical, colourless, smooth.

*Codinaea* Maire

(1937, Publ. Inst. Bot., 3: 15)

Setae sometimes present, simple, dark brown, smooth. Conidiophores macronematous, mononematous, erect, rarely flexuous, not branched, brown, smooth. Conidiogenous cells polyphialidic, integrated, terminal or intercalary, sympodial, cylindrical, with conspicuous collarettes. Conidia aggregated, semi-endogenous, cylindrical with rounded ends, curved, falcate, sometimes with a setula at each end, 0-3-septate, hyaline or clear brown, smooth. Type species: *Codinaea aristata* Maire, 1937.

Hughes & Kendrick 1968; Ellis 1971; Kuthubutheen & Nawawi 1991.

*Codinaea* state of *Chaetosphaeria callimorpha* (Mont.) Sacc., 1883, Syll. fung., 2: 95.

Setae erect or gently sinuous, dark brown, smooth, up to  $400 \times 7-10 \mu\text{m}$  at the base, occasionally with a polyphialide at the apex. Conidiophores macronematous, mononematous, erect or gently curved, unbranched, septate, clear to brown, smooth, up to  $100 \times 4-5 \mu\text{m}$ . Conidiogenous cells polyphialidic, sympodial, terminal and lateral, with collarettes well defined. Conidia semi-endogenous, cylindrical, curved, pointed at the base, hyaline, smooth,  $10-15 \times 2-3 \mu\text{m}$  (Fig. 20).

On dead leaves of *Myrtus communis*, *Pistacia lentiscus*, *Quercus ilex*.  
Ellis 1976.

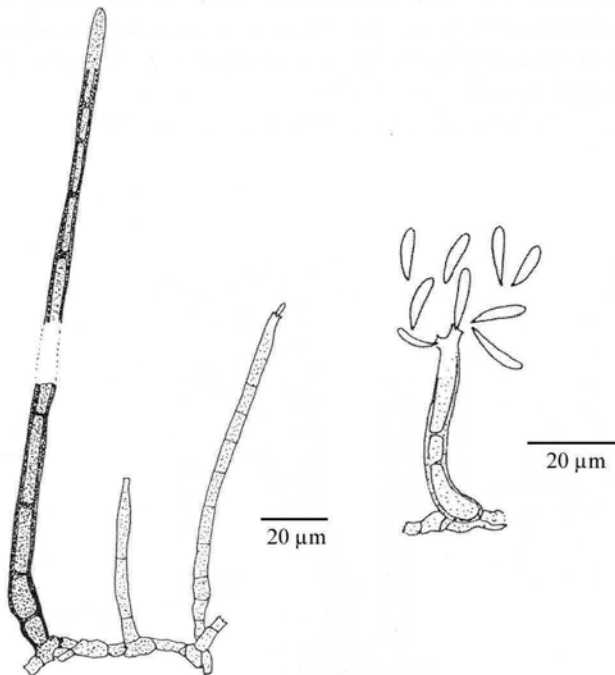


Fig. 20 - *Codinaea* state of *Chaetosphaeria callimorpha*. Setae present, occasionally with a polyphialide at the apex. Conidiogenous cells polyphialidic, sympodial, with well defined collarettes. Conidia semi-endogenous, falcate, 0-septate, hyaline, smooth.



*Menispora* Pers.

(1822, Mycol. Eur., 1: 32)

Setae, when present, erect or flexuous, mid to dark brown, smooth. Conidiophores macronematous, mononematous, unbranched or loosely branched, erect or flexuous, sometimes setiform, clear to dark brown, smooth. Conidiogenous cells monophialidic or sometimes polyphialidic, lateral, occasionally integrated and terminal, mostly discrete, determinate or sympodial, cylindrical, frequently with the tip curved, and very inconspicuous collarettes. Conidia aggregated, semi-endogenous, curved, cylindrical with rounded ends, frequently with a setula at each end, aseptate or septate, colourless, smooth.

Type species: *Menispora glauca* (Link) Pers., 1822.

Hughes & Kendrick 1963; Hughes & Kendrick 1968; Ellis 1971; Carmichael & al. 1980.

*Menispora ciliata* Corda, 1837, Icon. Fung., 1: 16.

Conidiophores macronematous, mononematous, unbranched or occasionally branched, flexuous, setiform, frequently anastomosing, up to  $900 \times 3-5 \mu\text{m}$ . Conidiogenous cells monophialidic, determinate, cylindrical, uncininate at the tip, with inconspicuous collarettes, lateral or terminal on branchlets, subhyaline, mostly  $16-25 \times 4-5 \mu\text{m}$ . Conidia semi-endogenous, curved, cylindrical, aseptate, colourless, smooth,  $12-21 \times 3-3.5 \mu\text{m}$ , with setulae up to  $12 \mu\text{m}$  long (Fig. 21).

Homotypic synonyms: *Eriomene ciliata* (Corda) Clem. & Shear, 1931; *Erionema ciliatum* (Corda) Maire, 1906.

On dead leaves of *Quercus ilex*.

Ellis 1971; Matsushima 1975; Ellis & Ellis 1997.

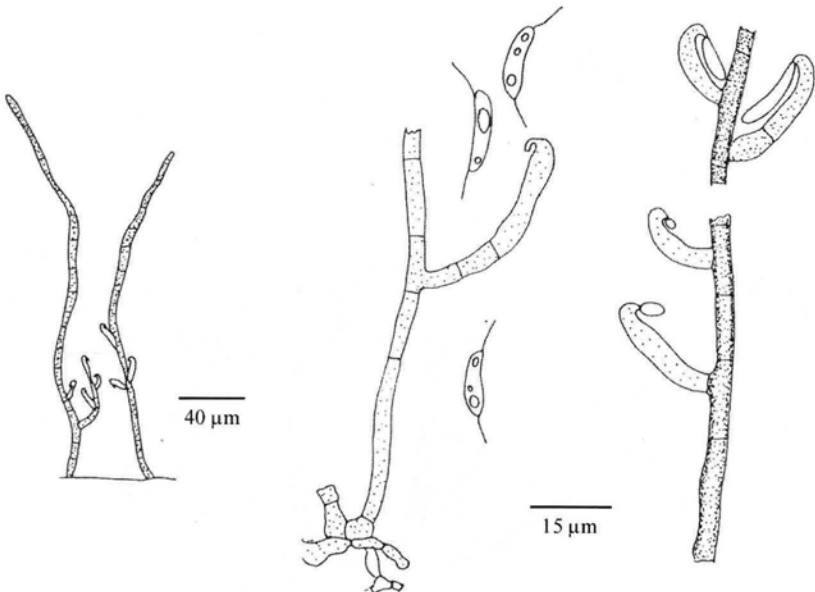


Fig. 21 - *Menispora ciliata*. Conidiophores setiform. Conidiogenous cells monophialidic, determinate, frequently with curved tip. Conidia semi-endogenous, curved, with a setula at each end, 0-septate, colourless, smooth.

***Gyrothrix*** (Corda) Corda  
(1842, Anleit. Stud. Mykol.: LXIII, 49)

Stroma when present immersed, pseudoparenchymatous. Setae present, repeatedly branched, dark brown or olivaceous brown, smooth or verrucose. Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, solitary, percurrent, lageniform or subulate, hyaline or subhyaline. Conidia solitary or aggregated in a whitish basal layer, cylindrical, fusiform, acerose, stright or curved, aseptate, hyaline, smooth.

Type species: *Gyrothrix podosperma* (Corda) Rabenh., 1844.  
Pirozynski 1962; Ellis 1971.

***Gyrothrix verticillata*** Piroz., 1962, Mycol. Pap., 84: 23.

Setae erect, often solitary, sparingly branched, branches verticillate, with whorls of three or four horizontal branches, light brown to olivaceous, smooth, 150-300 × 3-4 μm. Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, crowded, obclavate, hyaline or subhyaline, 8-14 × 3.5-4.5 μm. Conidia aggregated at the base of setae in a whitish basal layer, cylindrical to fusiform, sometimes falcate, aseptate, hyaline, smooth, 10-15 × 1.5-2 μm (Fig. 22).

On dead leaves of *Arbutus unedo*, *Phillyrea angustifolia*, *Pistacia lentiscus*.  
Pirozynski 1962; Ellis & Ellis 1997.

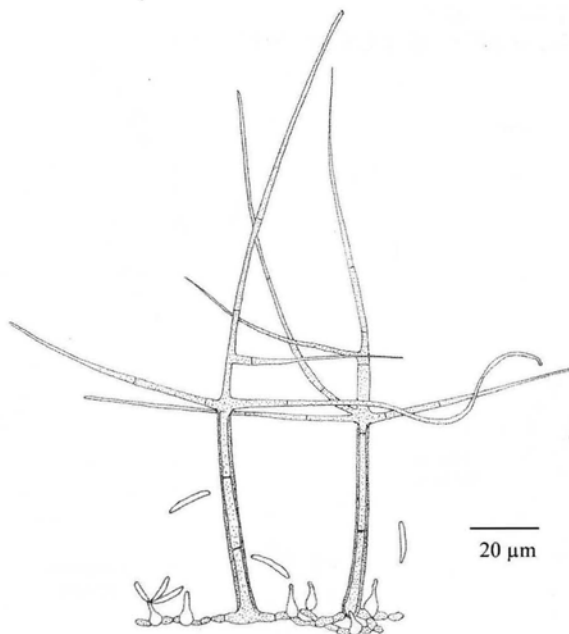


Fig. 22 - *Gyrothrix verticillata*. Setae erect, sparingly branched and verticillate. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia aggregated in whitish basal layer, fusiform, 0-septate, hyaline, smooth.

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

Setae 4-6 times subdichotomously branched, primary branches straight or flexuous, lateral spirally twisted, brown, verrucose or roughned,  $120-260 \times 3.5-4.5 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, subhyaline,  $6-14 \times 3-4 \mu\text{m}$ . Conidia aggregated in a basal layer, cylindrical to fusiform, straight or slightly curved, aseptate, hyaline, smooth,  $8-16 \times 1.5-2 \mu\text{m}$  (Fig. 23).

Synonym: *Campsotrichum podospermum* Corda, 1839.

On dead leaves of *Arbutus unedo*, *Cistus incanus*, *Juniperus phoenicea*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Smilax aspera*.

Pirozynski 1962; Ellis 1971; Ellis & Ellis 1997.

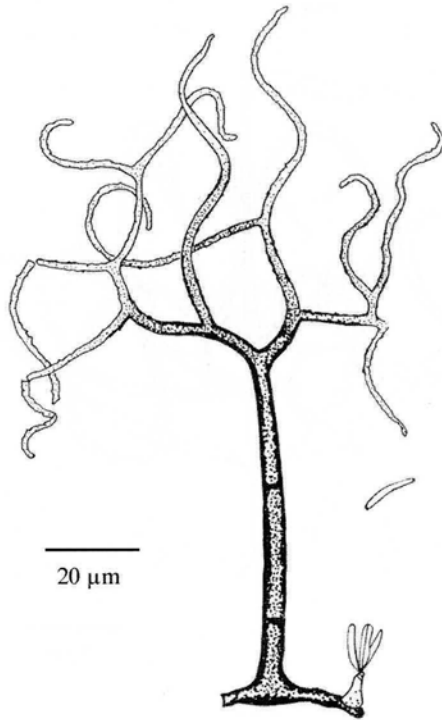


Fig. 23 - *Gyrothrix podosperma*. Setae branched. Conidiophores micronematous. Conidiogenous cells, polyblastic, percurrent. Conidia straight or slightly curved, 0-septate, hyaline, smooth.

***Gyrothrix ramosa*** Zucconi & Onofri, 1989, Mycol. Res., 92: 380.

Setae erect, 1-3 times branched, branches circinate, septate, brown, verrucose, up to  $150 \times 3-3.5 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, hyaline or subhyaline,  $6-9 \times 3-4.5 \mu\text{m}$ . Conidia aggregated, straight or slightly curved, aseptate, hyaline, smooth,  $14-19 \times 2-3 \mu\text{m}$  (Fig. 24).

On dead leaves of *Olea europaea* var. *sylvestris*, *Pistacia lentiscus*.  
Zucconi & Onofri 1989.

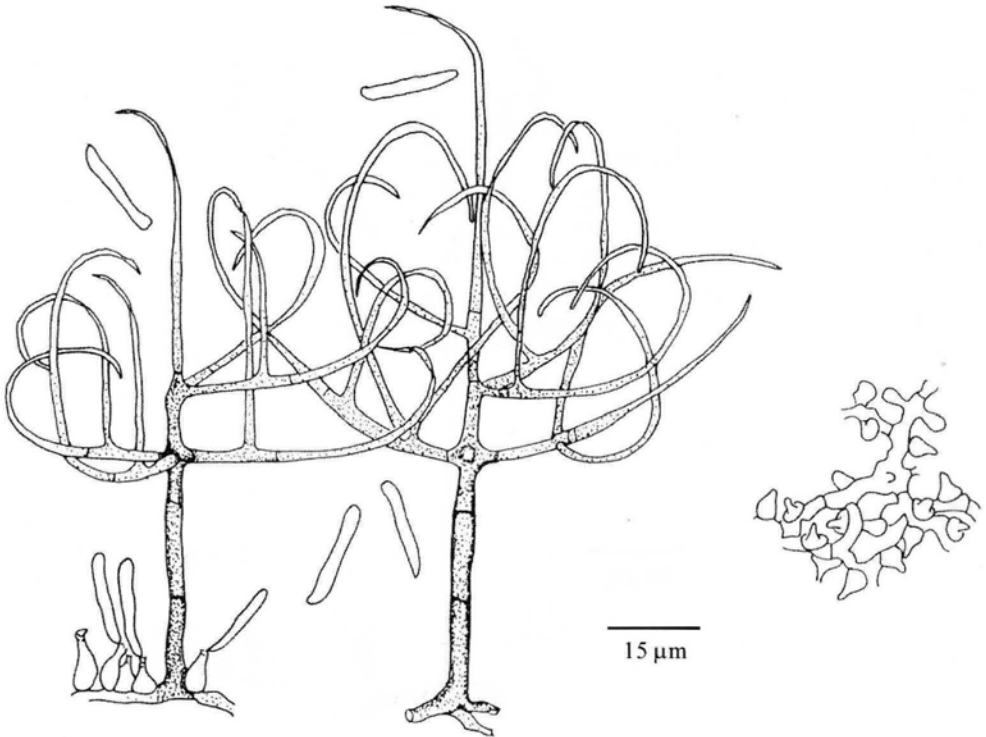


Fig. 24 - *Gyrothrix ramosa*. Setae erect, branched. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia straight or slightly curved, aseptate, hyaline, smooth.

*Gyrothrix macroseta* Piroz., 1962, Mycol. Pap., 84: 25.

Setae erect, spirally twisted, 5-10 times subdichotomously branched, branches straight or sometimes flexuous, dark reddish brown, verrucose,  $250-400 \times 5-8 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform,  $8$  (or more)  $\times 3-5 \mu\text{m}$ . Conidia aggregated at the base of the setae, cylindrical, fusiform, straight or gently curved, aseptate, hyaline, smooth,  $13-16 \times 1.5 \mu\text{m}$  (Fig. 25).

On dead leaves of *Arbutus unedo*, *Pistacia lentiscus*.

Pirozynski 1962.

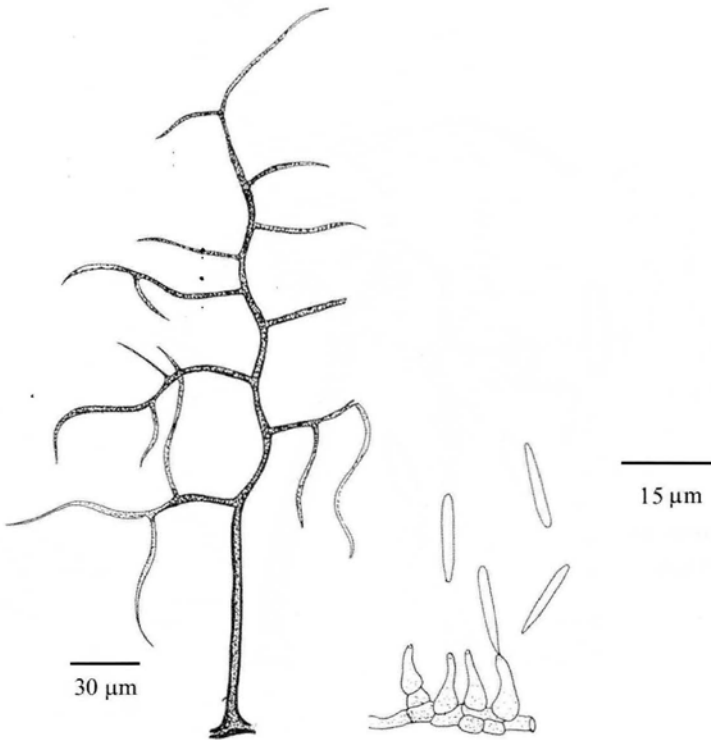


Fig. 25 - *Gyrothrix macroseta*. Setae erect, branched. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia cylindrical, gently curved, aseptate, hyaline, smooth.

***Gyothrix microsperma*** (Höhn.) Piroz., 1962, Mycol. Pap., 84: 14.

Setae erect, spirally twisted, branches subdichotomous, light brown, smooth,  $90-120 \times 3-3.5 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, subhyaline,  $10-13 \times 3-3.5 \mu\text{m}$ . Conidia adhering together at the base of setae to form a whitish pellicle, oblong to cylindrical, straight or gently curved, aseptate, hyaline, smooth,  $6-8 \times 1.5-1.8 \mu\text{m}$  (Fig. 26).

Basionym: *Circinotrichum microspermum* Höhn., 1909.

Synonym: *Vermiculariopsiella microsperma* (Höhn.) R. F. Castañeda & W. B. Kendr., 1991.

On dead leaves of *Cistus monspeliensis*.

Pirozynski 1962.

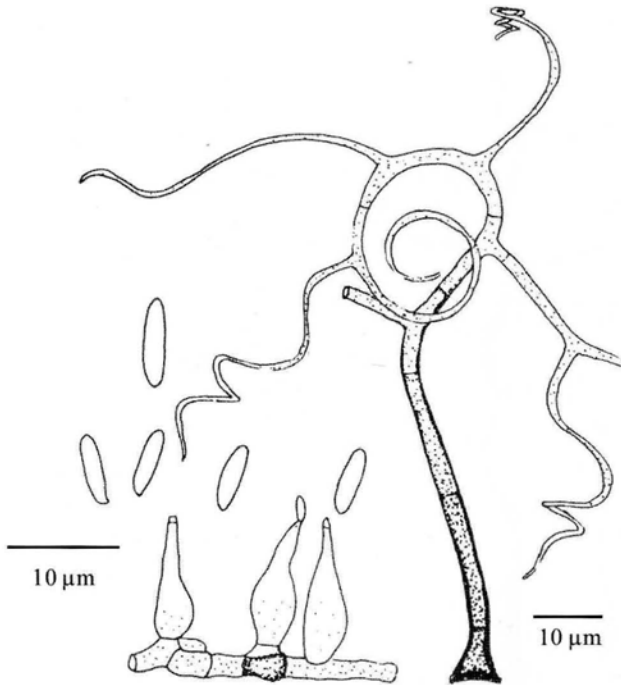


Fig. 26 - *Gyothrix microsperma*. Setae erect, branched and spirally twisted. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia cylindrical, gently curved, 0-septate, hyaline, smooth.

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

Setae erect, flexuous, 2-5 times branched, branches subdichotomous spirally twisted, brown, smooth,  $100-160 \times 3-5 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, lageniform to conical, subhyaline,  $6-10 \times 3.5 \mu\text{m}$ . Conidia adhering together at the base of setae, acerose, straight or gently curved, aseptate, hyaline, smooth,  $10-18 \times 1-1.5 \mu\text{m}$  (Fig. 27).

On dead leaves of *Arbutus unedo*, *Chamaerops humilis*, *Cistus incanus*, *Ceratonia siliqua*, *Ilex aquifolium*, *Juniperus phoenicea*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Rosmarinus officinalis*, *Smilax aspera*. Pirozynski 1962.

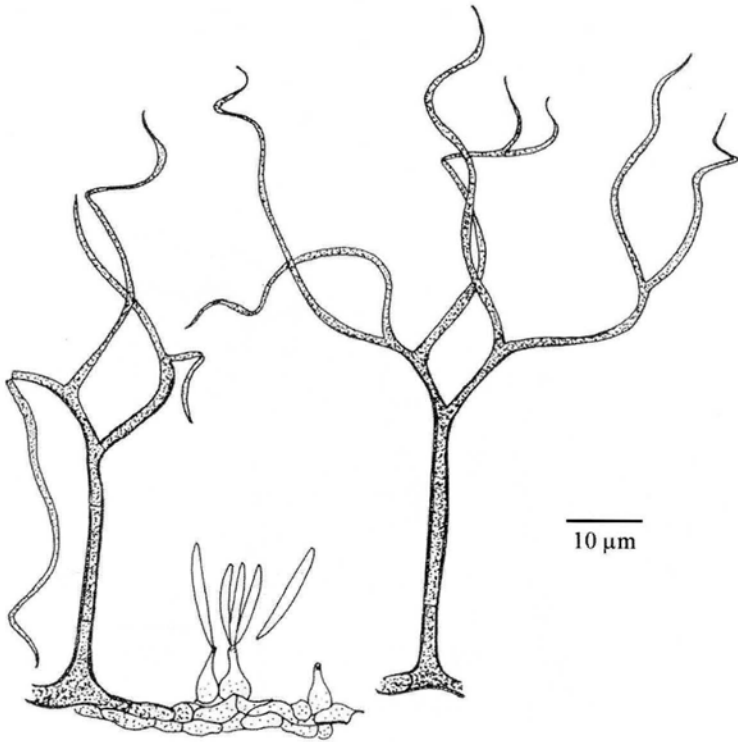


Fig. 27 - *Gyrothrix grisea*. Setae erect, branched and spirally twisted. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia acerose, 0-septate, hyaline, smooth.

*Gyrothrix citricola* Piroz., 1962, Mycol. Pap., 84: 19.

Setae erect, flexuous, 1-2 times branched or unbranched, branches flexuous, brown, smooth, up to  $240 \times 3-4 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, subhyaline,  $5.5-9 \times 2.5-3.5 \mu\text{m}$ . Conidia at the base of setae, aggregated, cylindrical, straight or gently curved, aseptate, hyaline, smooth,  $8-14 \times 1.5-2 \mu\text{m}$  (Fig. 28).

On dead leaves of *Chamaerops humilis*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Thymelaea tartonraira*.

Pirozynski 1962; Zucconi & Onofri 1989.



Fig. 28 - *Gyrothrix citricola*. Setae erect, flexuous, branched. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia aggregated, cylindrical, gently curved, 0-septate, hyaline, smooth.



*Circinotrichum* Nees

(1817, Das System der Pilze und Schwämme: 19)

Stroma when present, immersed, pseudoparenchymatous. Setae present, unbranched, subulate, circinate, sometimes straight, dark brown, smooth or verrucose. Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, lageniform or subulate, hyaline or subhyaline. Conidia solitary, aggregated at the base of setae, acerose or falcate, aseptate, hyaline, smooth.

Type species: *Circinotrichum maculiforme* Nees, 1817.

Pirozynski 1962; Ellis 1971.

*Circinotrichum papakurae* S. Hughes & Piroz., 1971, N.Z. J Bot., 9: 40.

Setae unbranched, rising from dark brown cells of the superficial mycelium, erect, straight, septate, dark brown, smooth, up to  $150 \times 2.5-4 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, subhyaline,  $5-10 \times 3.5-5 \mu\text{m}$ . Conidia aggregated at the base of setae, cylindrical to fusiform, straight or slightly falcate, aseptate, hyaline, smooth,  $11-17 \times 1.5-2 \mu\text{m}$  (Fig. 29).

On dead leaves of *Phillyrea angustifolia*.

Hughes & Pirozynski, 1971.

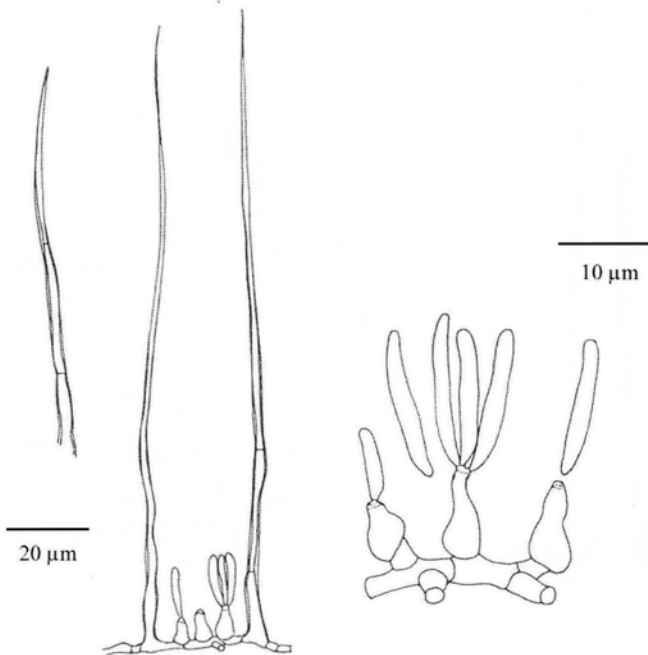


Fig. 29 - *Circinotrichum papakurae*. Setae unbranched, erect. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia cylindrical to fusiform slightly falcate, 0-septate, hyaline, smooth.

*Circinotrichum rigidum* B. Sutton, 1980, Proc. R. Soc. Qd., 91: 12.

Setae unbranched, frequently rising from dark brown swollen cells of the superficial hyphae, erect, straight, dark brown, smooth, up to  $300 \times 6-7 \mu\text{m}$  at the base. Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, percurrent, discrete, ampulliform to lageniform, pale brown to hyaline, smooth,  $4-8 \times 3-4 \mu\text{m}$ . Conidia fusiform, falcate, with a minute appendage at each end  $1 \mu\text{m}$  long, aseptate, hyaline, smooth,  $13-16.5 \times 1.5 \mu\text{m}$  (Fig. 30).

On dead leaves of *Arbutus unedo*, *Phillyrea angustifolia*, *Pistacia lentiscus*.  
Sutton 1980.

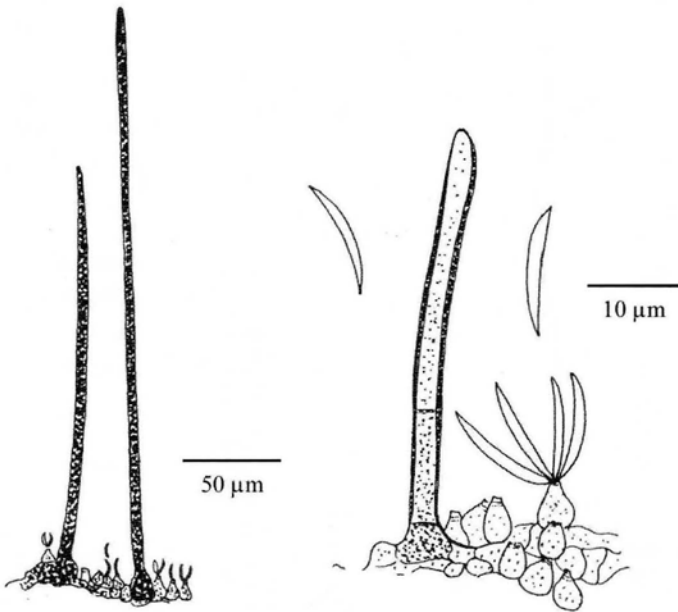


Fig. 30 - *Circinotrichum rigidum*. Setae erect, unbranched. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia fusiform to falcate, 0-septate, hyaline, smooth.

***Circinotrichum maculiforme*** Nees, 1817, Das System der Pilze und Schwämme: 19.  
 Setae erect, circinate, unbranched, verrucose, dark brown,  $90-180 \times 3-4.5 \mu\text{m}$ .  
 Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth.  
 Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, hyaline or subhyaline, mostly  $8-12 \times 3-4.5 \mu\text{m}$ . Conidia forming a whitish layer at the base of setae, acerose, straight or slightly curved, aseptate, hyaline, smooth,  $9-17 \times 1-1.5 \mu\text{m}$  (Fig. 31).  
 On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus incanus*,  
*C. monspeliensis*, *C. salvifolius*, *Juniperus oxycedrus* ssp. *macrocarpa*, *J. phoenicea*,  
*Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *Pistacia lentiscus*,  
*Quercus ilex*, *Smilax aspera*.  
 Pirozynski 1962; Ellis 1971.

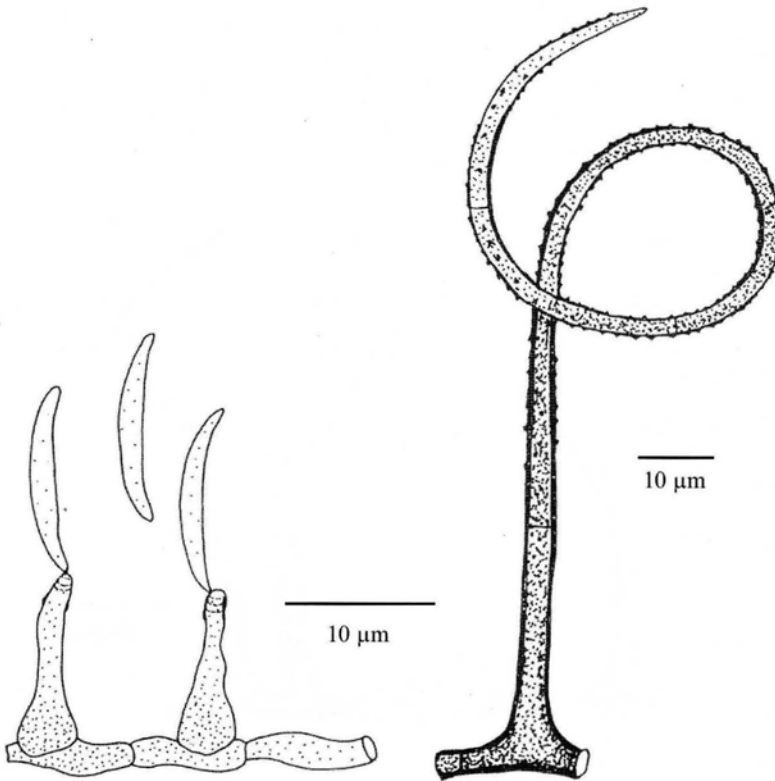


Fig. 31 - *Circinotrichum maculiforme*. Setae erect, circinate, unbranched, verrucose. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia acerose, straight or slightly falcate, 0-septate, hyaline, smooth.

*Circinotrichum olivaceum* (Speg.) Piroz., 1962, Mycol. Pap., 84: 6.

Setae erect, circinate, unbranched, verrucose,  $35-75 \times 2.5-3.5 \mu\text{m}$ . Conidiophores micronematous, flexuous, subhyaline to pale brown, smooth. Conidiogenous cells polyblastic, discrete, percurrent, obclavate to lageniform, colourless,  $5-8 \times 2-4 \mu\text{m}$ . Conidia forming a whitish layer at the base of setae, cylindrical to fusiform, straight or slightly curved, aseptate, hyaline, smooth,  $8.5-13 \times 1.3-1.6 \mu\text{m}$  (Fig. 32).

Basionym: *Helicotrichum olivaceum* Speg., 1889.

On dead leaves of *Arbutus unedo*, *Cistus monspeliensis*, *Phillyrea angustifolia*, *Pistacia lentiscus*.

Pirozynski 1962; Ellis 1971.

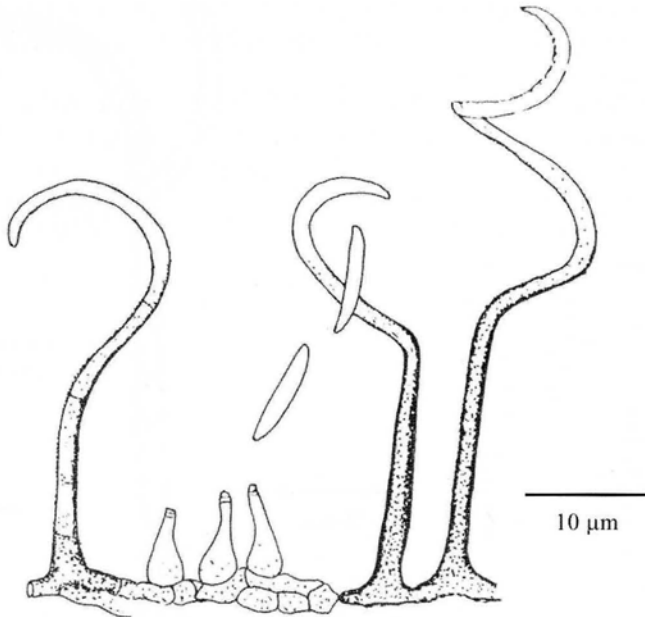


Fig. 32 - *Circinotrichum olivaceum*. Setae circinate, verrucose. Conidiophores micronematous. Conidiogenous cells polyblastic, percurrent. Conidia cylindrical or falcate, 0-septate, hyaline, smooth.

***Beltrania* Penz.**

(1882, Nuovo Giorn. Bot. Ital., 14: 72)

Setae erect, unbranched, brown, smooth or verrucose, arising from lobed basal cells. Conidiophores macronematous, mononematous, very rarely branched, erect or slightly flexuous, clear brown to brown, smooth, arising frequently from the setae basal cells or from separate lobed cells. Conidiogenous cells polyblastic, integrated, terminal, sympodial, clavate, denticulate; swollen separating cells sometimes present. Conidia solitary, acropleurogenous, biconic, appendiculate, aseptate, pale olive to dark brown with a clear transverse band, smooth.

Type species: *Beltrania rhombica* Penz., 1882.

Penzig 1882; Hughes 1951 d; Pirozynski 1963; Ellis 1971.

***Beltrania rhombica* Penz., 1882, Nuovo Giorn. Bot. Ital., 14: 72.**

Setae unbranched, dark brown, smooth, up to  $300 \times 4-6 \mu\text{m}$ . Conidiophores macronematous, mononematous, branched in some strains, gently flexuous, frequently arising from the setae basal cells, brown to clear brown, up to  $130 \times 4-8 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sometimes intercalary, sympodial, denticulate. Separating cells ellipsoidal, inflated, colourless,  $6-15 \times 3-8 \mu\text{m}$ . Conidia solitary, biconic with proximal end V-shaped, and clear transverse band just above the middle part, pale olive to dark brown, smooth,  $15-30 \times 7-14 \mu\text{m}$ , appendage  $3-20 \mu\text{m}$  long (Figs. 33, 34). With great variability related to vegetal substrata.

Synonyms: *Beltrania indica* Subram., 1952; *Beltrania multispora* H. J. Swart, 1958.

On dead leaves of *Chamaerops humilis*, *Ceratonia siliqua*, *Cistus monspeliensis*, *C. salvifolius*, *Juniperus phoenicea*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Quercus cerris*, *Smilax aspera*.

Penzig 1882; Ellis 1971; Matsushima 1971; Rambelli & Pasqualetti 1990; Mulas & al. 1993; Pasqualetti & al. 1999 a.

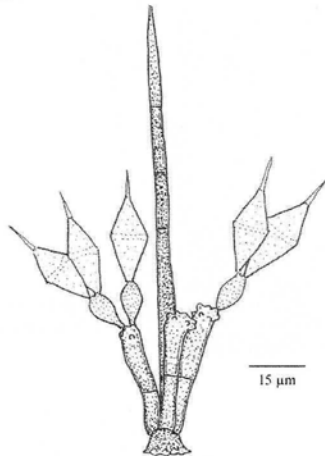


Fig. 33 - *Beltrania rhombica*. Setae erect, not branched. Conidiophores arising from the basal cell of the setae. Conidiogenous cells polyblastic, sympodial, denticulate. Separating cells present. Conidia biconic, solitary, with transverse clear band, pale olive, smooth.

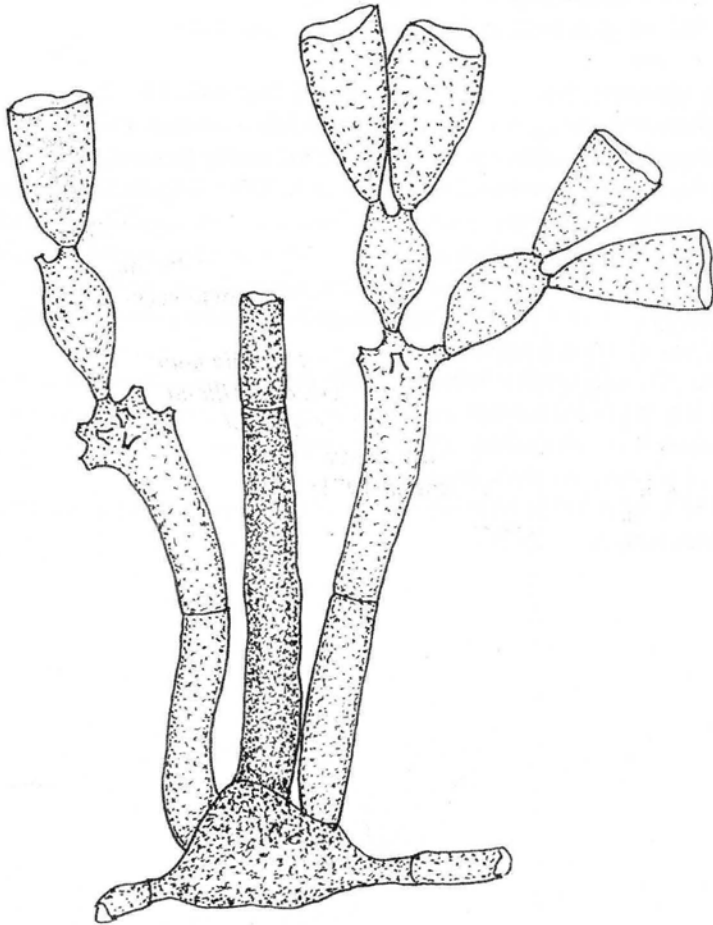


Fig. 34 – *Beltrania rhombica*. Detail of sympodial and denticulate conidiogenous cells.

***Beltrania querna*** Harkn., 1884, Bulletin of the California Academy of Science, 1: 39.

Setae unbranched, straight, brown to dark brown, arising from a basal lobed cell, smooth, up to 400  $\mu\text{m}$  long. Conidiophores macronematous, mononematous, gently flexuous, often arising from the basal cells of the setae, clear brown, up to  $200 \times 3\text{--}7 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sometimes intercalary, sympodial, denticulate. Separating cells inflated, ellipsoidal, colourless,  $8\text{--}12 \times 4\text{--}7 \mu\text{m}$ . Conidia solitary, biconic with proximal end U-shaped, and clear transverse band over the middle part, clear brown, smooth,  $8\text{--}30 \times 7\text{--}10 \mu\text{m}$ , appendage  $2\text{--}5 \mu\text{m}$  long (Fig. 35).

Homotypic synonym: *Beltrania rhombica* var. *querna* (Harkn.) Piroz.

On dead leaves of *Quercus ilex*.

Hughes 1951 d; Pirozynski 1963; Ellis 1971; Ellis & Ellis 1997.

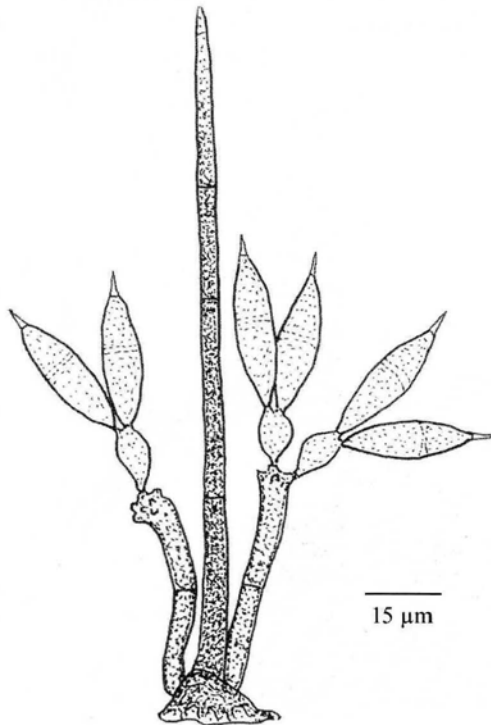


Fig. 35 - *Beltrania querna*. Setae erect, not branched. Conidiophores arising from the basal cell of the setae. Conidiogenous cells polyblastic, sympodial, denticulate. Separating cells present. Conidia biconic-fusiform, solitary, with transverse clear band, clear brown, smooth.

*Stigmina* Sacc.(1880, *Michelia*, 2: 22)

Stroma always present. Sporodochia pulvinate. Conidiophores macronematous, monone-matous, commonly unbranched, usually short, erect or flexuous, clear to brown or olivaceous brown, smooth or verrucose. Conidiogenous cells blastic, integrated, terminal, per-current, cylindrical, doliiform or lageniform. Conidia solitary, acrogenous, simple, clavate, cylindrical, ellipsoidal or obclavate, occasionally rostrate, with transverse and sometimes longitudinal or oblique septa, clear to dark brown, smooth, verrucose or echinulate.

Type species: *Stigmina platani* (Fuckel) Sacc., 1880.

Hughes 1952; Ellis 1971.

*Stigmina fici* Pavgi & U. P. Singh, 1966, *Mycopath. Mycol. appl.*, 30: 265.

Conidiophores macronematous, mononematous, forming pulvinate sporodochia, cylindrical, olivaceous brown, up to  $30 \times 4-6 \mu\text{m}$ . Conidiogenous cells blastic, percurrent. Conidia solitary, ellipsoidal to clavate, clear to mid olivaceous brown, with 1-3 transverse septa and often a longitudinal or oblique septum, smooth or verruculose,  $11-16 \times 6-10 \mu\text{m}$  (Fig. 36). On dead leaves of *Myrtus communis*.

Ellis 1976.

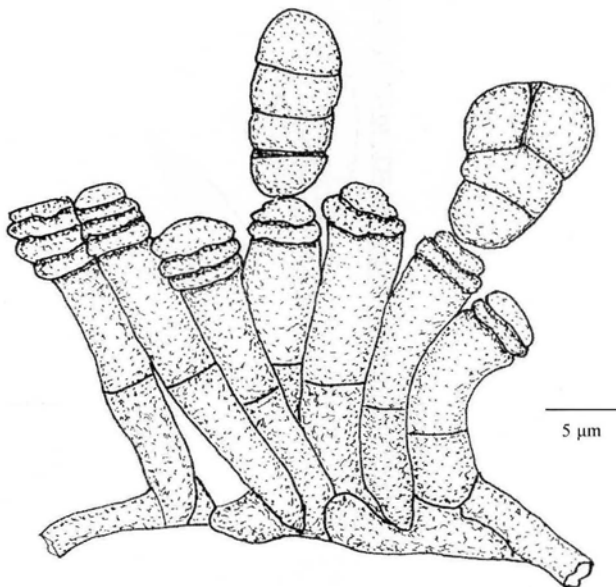


Fig. 36 - *Stigmina fici*. Conidiophores in pulvinate sporodochia. Conidiogenous cells monoblastic, percurrent. Conidia ellipsoidal with longitudinal and transverse septa, olivaceous brown.



***Trimmatostroma* Corda**  
(1837, Icon. Fung., 1: 9)

Stroma erumpent, brown. Sporodochia pulvinate, brown to black. Conidiophores macronematous or semi-macronematous, growing by elongation of the sub-apical cells, sometimes branched, usually short, clear brown, smooth to verruculose. Conidiogenous cells integrated, terminal, approximately cylindrical, fragmenting. Conidia in basipetal chains, schizogenous, simple or branched, very variable in form and dimensions, with transverse, longitudinal and /or oblique septa, clear to dark brown, smooth or verrucose.

Type species: *Trimmatostroma salicis* Corda, 1837.  
Hughes 1953; Ellis 1971.

***Trimmatostroma betulinum* (Corda) S. Hughes, 1953, Can. J. Bot., 31: 628.**

Sporodochia pulvinate, brown to black on very large stroma. Conidiophores macronematous or semi-macronematous. Conidiogenous cells integrated, terminal, fragmenting. Conidia in basipetal branched chains, very variable in form, unbranched, sometimes lobed, irregularly septate, clear to brown, smooth to verruculose, 5-20 × 5-14 μm (Fig. 37).

Basionym: *Coniothecium betulinum* Corda, 1837.

On dead leaves of *Chamaerops humilis*, *Cistus monspeliensis*, *Juniperus phoenicea*, *Myrtus communis*, *Olea europea* var. *sylvestris*, *Pistacia lentiscus*.  
Ellis 1971; Ellis & Ellis 1997.



Fig. 37 - *Trimmatostroma betulinum*. Conidiophores in pulvinate sporodochia. Conidiogenous cells fragmenting. Conidia in basipetal chains, irregularly septate, clear to brown.

*Trimmatostroma salicis* Corda, 1837, Icon. Fung., 1: 9.

Sporodochia pulvinate, black. Conidiophores macronematous or semi-macronematous. Conidiogenous cells integrated, terminal, fragmenting. Conidia in basipetal chains, very irregular in form and dimensions, curved or bent, cylindrical rounded at the ends, clavate, frequently forked, irregularly septate, up to 13 transverse and sometimes one or few longitudinal or oblique septa, clear brown to olivaceous brown, smooth or verruculose,  $12\text{-}38 \times 4\text{-}10 \mu\text{m}$  (Fig. 38).

Homotypic synonym: *Melanconium salicis* (Corda) S. Hughes, 1958.

On dead leaves of *Cistus incanus*, *C. monspeliensis*, *Olea europea* var. *sylvestris*, *Quercus ilex*, *Rosmarinus officinalis*.

Ellis 1971; Ellis & Ellis 1997.

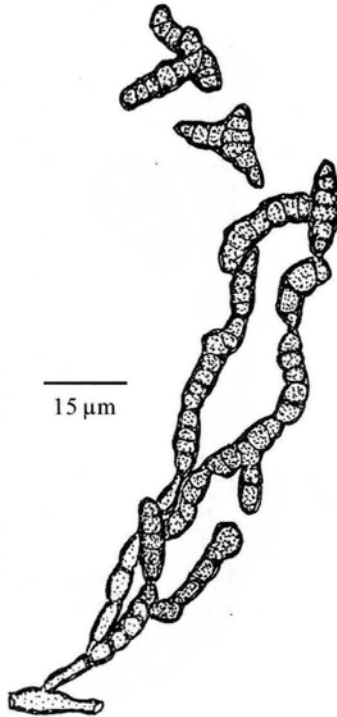


Fig. 38 - *Trimmatostroma salicis*. Conidiophores in pulvinate sporodochia. Conidiogenous cells fragmenting. Conidia in basipetal chains, irregularly septate, clear to olivaceous brown.

*Cryptocoryneum* Fuckel

(1870, Jahrbuch des Nassauischen Vereins für Naturkunde, 23-24: 372)

Sporodochia pulvinate, flat, brown to black. Stroma brown to dark brown. Conidiophores macronematous, mononematous, unbranched, erect or flexuous, subhyaline or pale brown, smooth. Conidiogenous cells monoblastic, integrated, terminal, determinate, cylindrical. Conidia solitary, branched, cheiroid, acrogenous, composed by swollen cap cells dark brown and by septate, subhyaline arms developing downwards towards the substratum.

Type species: *Cryptocoryneum fasciculatum* Fuckel, 1870.

Ellis 1971; Ellis & Ellis 1997.

*Cryptocoryneum rilstonii* M. B. Ellis, 1972, Mycol. Pap., 131: 2.

Sporodochia pulvinate, brown to black. Stroma brown. Conidiophores macronematous, up to  $40 \times 1-3 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, determinate. Conidia solitary, acrogenous, cheiroid, composed by black cap cells and 3-9 branches,  $20-45 \times 12-30 \mu\text{m}$ ; branches developing towards the substratum, subhyaline to pale brown, 1-9 septate, smooth,  $10-30 \times 4-6 \mu\text{m}$  (Fig. 39).

On dead leaves of *Pistacia lentiscus*, *Quercus ilex*.

Ellis 1976; Ellis & Ellis 1997.

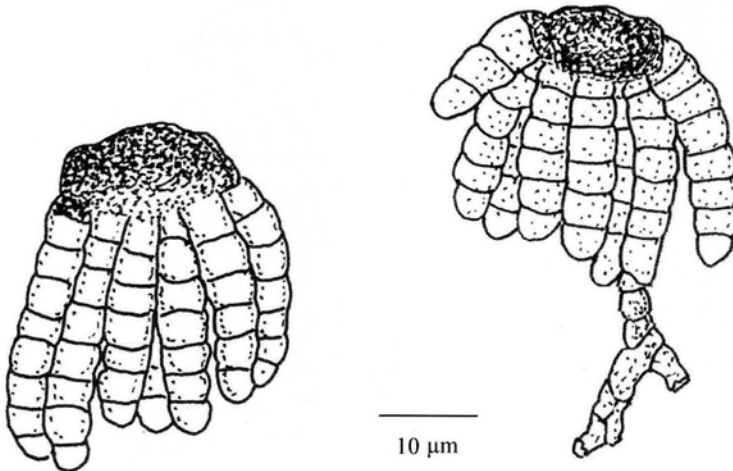


Fig. 39 - *Cryptocoryneum rilstonii*. Conidiophores in black sporodochia. Conidiogenous cells monoblastic, determinate. Conidia cheiroid, branched, with arms developing towards the substratum, pale brown, smooth.

*Cryptocoryneum condensatum* (Wallr.) E. W. Mason & S. Hughes, 1953, Nat. Hist. Scarborough Distr., 1: 161.

Sporodochia pulvinate dark brown. Conidiophores macronematous up to  $80 \times 1-3 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, determinate, cylindrical, subhyaline. Conidia solitary, acrogenous, cheiroid, with arms developing towards the substratum,  $40-85 \times 20-30 \mu\text{m}$ , composed by a brown swollen cap cells and branches clear brown, with up to 17 septa,  $3-5 \mu\text{m}$  wide (Fig. 40).

Basionym: *Hormiscium condensatum* Wallr., 1833.

On dead leaves of *Pistacia lentiscus*.

Ellis 1971; Ellis & Ellis 1997.

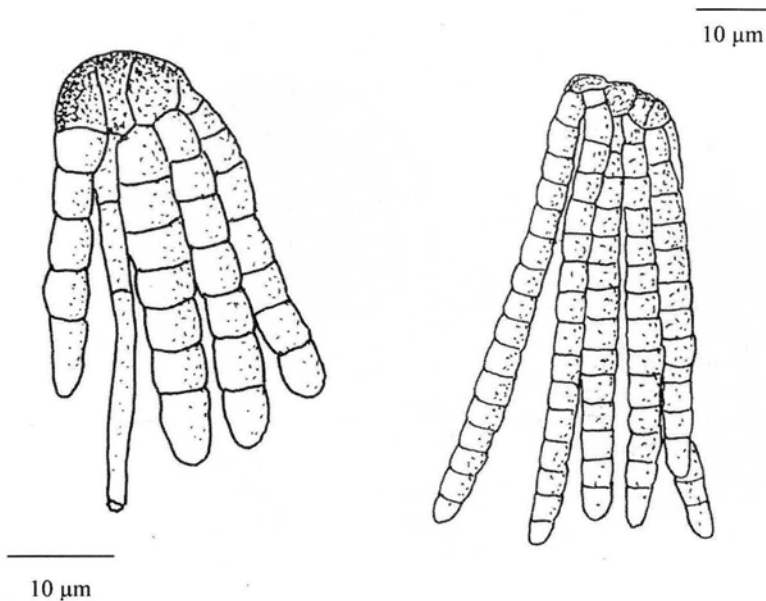


Fig. 40 - *Cryptocoryneum condensatum*. Conidiophores in dark brown sporodochia. Conidiogenous cells monoblastic, determinate. Conidia cheiroid, branched, with arms developing towards the substratum, clear brown, smooth.

*Epicoccum* Link

(1815, Magazin Ges. Naturf. Freunde, 7: 32)

Stroma present. Sporodochia pulvinate, black. Conidiophores macronematous, semi-macronematous, mononematous, usually not branched, erect, clear to pale brown, smooth or verrucose. Conidiogenous cells monoblastic, integrated, terminal, determinate, cylindrical. Conidia solitary, acrogenous, subspherical or pyriform, often with protuberant basal cell, muriform, dark golden brown, verrucose.

Type species: *Epicoccum nigrum* Link, 1815.  
Ellis 1971.

*Epicoccum nigrum* Link, 1815, Magazin Ges. Naturf. Freunde, 7: 32.

Sporodochia up to 2 mm in diameter. Conidiophores macronematous, cylindrical, brown,  $5-15 \times 3-6 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, determinate, cylindrical, clear brown. Conidia solitary, subspherical, apex dome like, muriform, frequently with a pale protuberant basal cell, golden brown, verrucose,  $15-25$  (up to  $50$ )  $\mu\text{m}$  in diameter (Fig. 41).

Synonym: *Epicoccum purpurascens* Ehrenb., 1818.

On dead leaves of *Chamaerops humilis*, *Phillyrea angustifolia*, *Pistacia lentiscus*.  
Ellis 1971; Matsushima 1980; Domsch & al. 1993; Ellis & Ellis 1997.

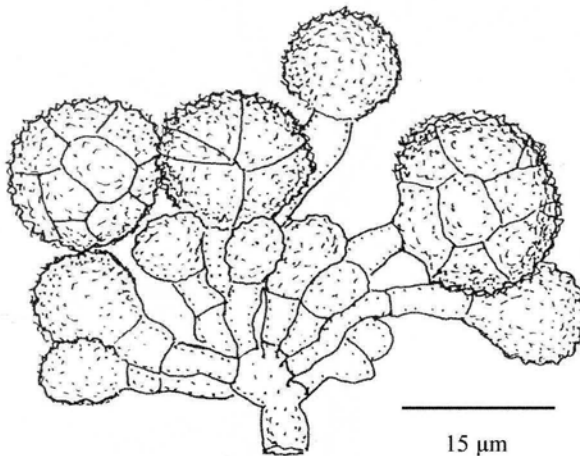


Fig. 41 - *Epicoccum nigrum*. Conidiophores in sporodochia. Conidiogenous cells monoblastic, determinate. Conidia solitary, subspherical, muriform, golden brown, verrucose.

***Oidiodendron* Robak**  
(1932, Nytt. Mag. Natur., 71: 245)

Conidiophores macronematous, mononematous, erect or flexuous, with hyaline or very pale branches mainly in the upper part, branches frequently verticillate, colourless or dark brown, smooth or verrucose. Conidiogenous cells integrated, terminal on branches, determinate, cylindrical, producing arthroconidia by fragmentation. Conidia catenate, schizogenous, cylindrical or ellipsoidal, subspherical, aseptate, hyaline to brown, smooth or verruculose.

Lectotype species: *Oidiodendron tenuissimum* (Peck) S. Hughes, 1958.  
Ellis 1971; Domsch & al. 1993; Ellis & Ellis 1997.

***Oidiodendron griseum* Robak, 1934, Svensk Skogsvårdsförening Tidskr., 32: 440.**

Conidiophores macronematous, mononematous, erect, branched in the upper part, olivaceous to blackish brown, smooth, up to  $100 \times 1.5-2 \mu\text{m}$ . Conidiogenous cells integrated, terminal, determinate, fragmenting to form arthroconidia. Conidia catenate, schizogenous, oblong or ellipsoidal, aseptate, slightly greyish green, smooth or minutely verruculose,  $2-3.5 \times 1.5-2 \mu\text{m}$  (Figs. 42, 43).

On dead leaves of *Myrtus communis*.

Ellis 1971; Domsch & al. 1993; Ellis & Ellis 1997.

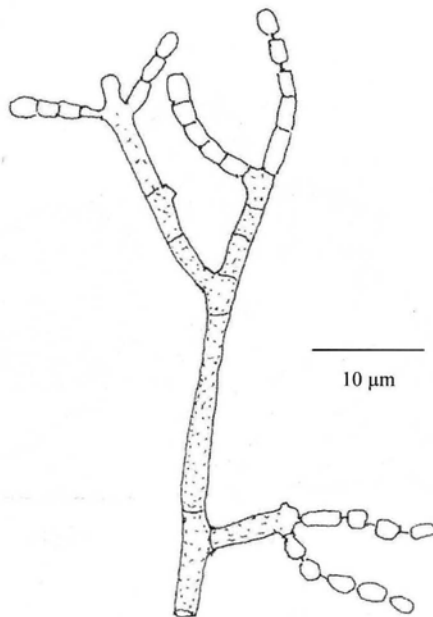


Fig. 42 - *Oidiodendron griseum*. Conidiophores erect, branched in the upper part. Conidiogenous cells integrated and fragmenting to form arthroconidia. Conidia in chains, oblong to ellipsoidal, 0-septate, greyish-green.

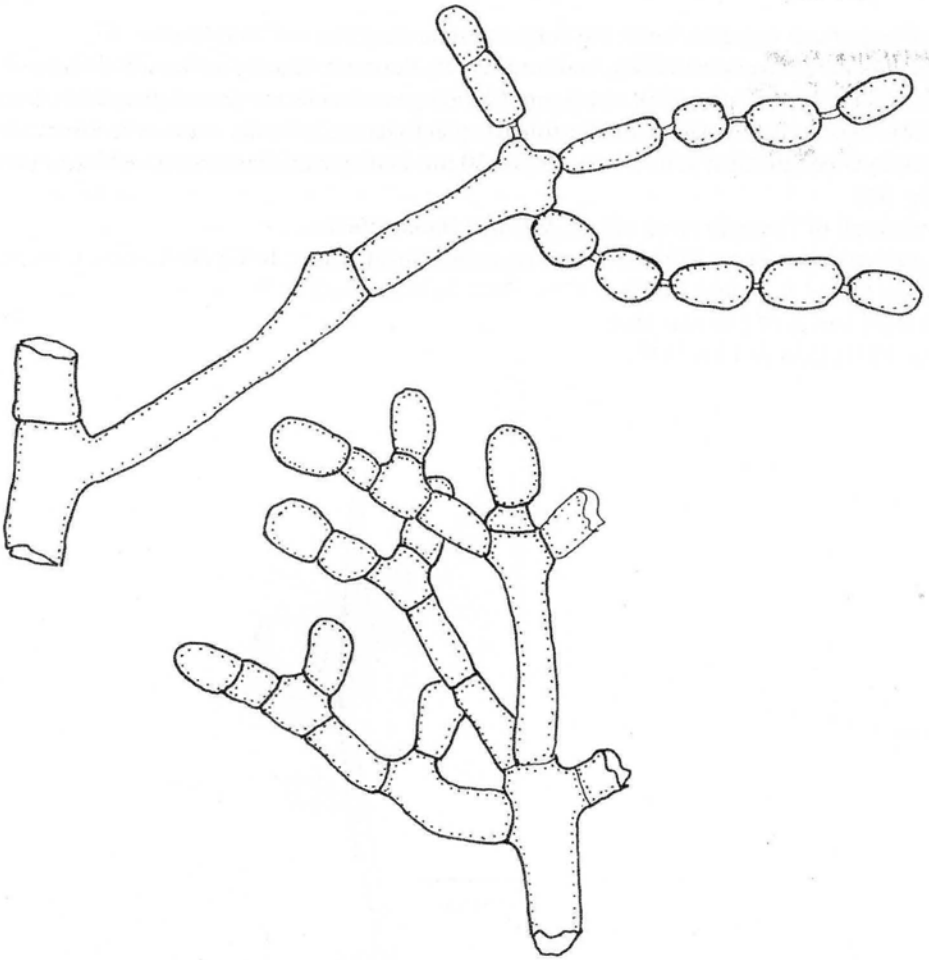


Fig. 43 - *Oidiodendron griseum*. Detail of arthroconidia.

***Helicosporium* Nees**

(1817, Das System der Pilze und Schwämme: 68)

Conidiophores macronematous, mononematous, setiform, erect, straight or flexuous, unbranched or sometimes branched. Conidiogenous cells polyblastic or monoblastic, integrated, frequently intercalary, sometimes terminal, sympodial or determinate, cylindrical, denticulate. Conidia solitary, pleurogenous or acropleurogenous, simple, helicoid, septate, usually very clear pigmented, smooth.

Type species: *Helicosporium vegetum* Nees, 1817.

Ellis 1971; Carmichael & al. 1980.

***Helicosporium vegetum* Nees, 1817, Das System der Pilze und Schwämme: 68.**

Conidiophores macronematous, setiform, erect, flexuous, usually unbranched, subulate, mid to dark brown, up to  $350 \times 4-5 \mu\text{m}$ . Conidiogenous cells integrated, frequently intercalary, blastic, denticulate. Conidia solitary, pleurogenous, helicoid, septa if present indistinct, hyaline, greenish yellow in mass,  $10-20 \mu\text{m}$  in diameter, filaments about  $1 \mu\text{m}$  thick (Fig. 44).

Anamorph of *Tubeufia cerea* (Berk. & Curt.) Booth, 1964.

Homotypic synonyms: *Helicotrichum vegetum* (Nees) Wallr., 1833; *Helicomycetes vegetus* (Nees) Pound & Clem., 1896.

On dead leaves of *Quercus ilex*.

Ellis 1971; Ellis & Ellis 1997.

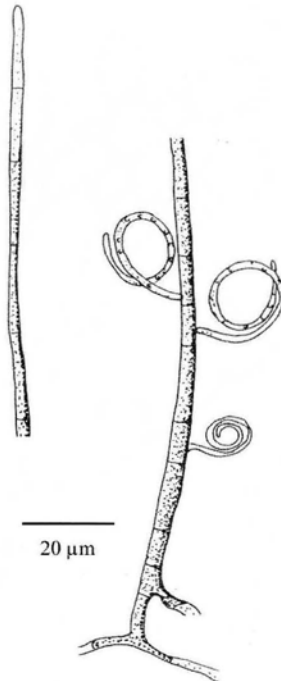


Fig. 44 - *Helicosporium vegetum*. Conidiophores setiform, erect. Conidiogenous cells blastic, denticulate. Conidia solitary, helicoid, hyaline.



*Helicosporium pannosum* (Berk. & M. A. Curtis) R. T. Moore, 1957, *Mycologia*, 49: 582. Conidiophores macronematous, erect, setiform, gently flexuous, golden brown, smooth or slightly echinulate, up to  $350 \times 7-10 \mu\text{m}$ . Conidiogenous cells blastic, intercalary, integrated, sympodial, denticulate. Conidia solitary, pleurogenous, helicoid, septate, subhyaline or very clear brown, slightly echinulate, up to  $500 \mu\text{m}$  in diameter, filaments  $4-8 \mu\text{m}$  thick ( $2.5 - 13.5 \mu\text{m}$ , Matsushima 1975) (Fig. 45).

Basionym: *Drepanospora pannosa* Berk. & M. A. Curtis, 1875.

On dead leaves of *Cistus monspeliensis*.

Matsushima 1975; Ellis 1976.

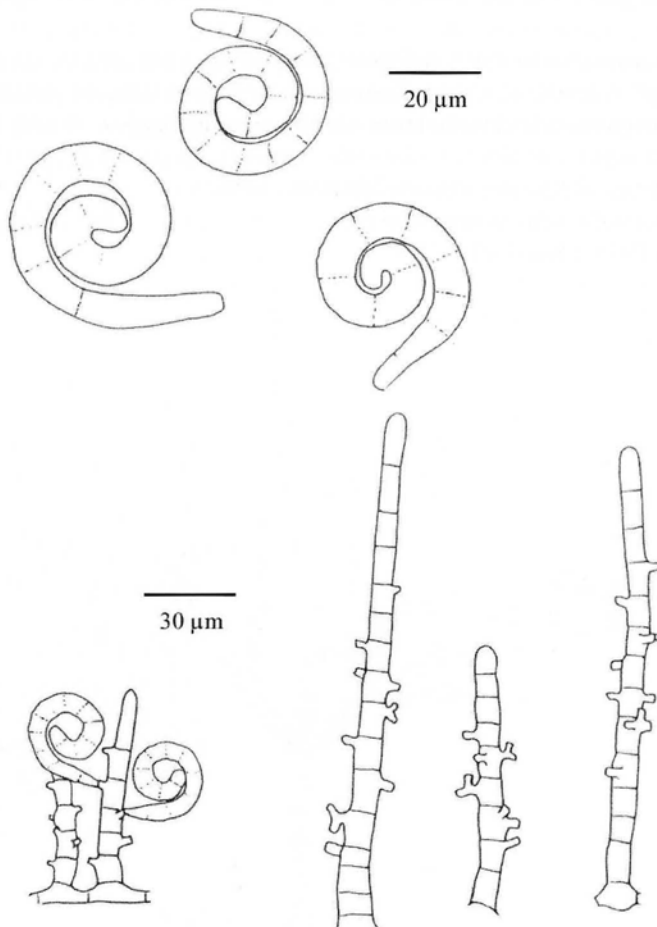


Fig. 45 - *Helicosporium pannosum*. Conidiophores setiform, erect. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, helicoid, septate, subhyaline to clear brown.

***Polyscytalum* Riess**  
(1853, Bot. Ztg., 11: 138)

Conidiophores macronematous, mononematous, unbranched or irregularly branched, usually straight, dark brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sometimes discrete, determinate, cylindrical, often denticulate, denticles short, cylindrical. Conidia in acropetal usually branched chains, easily fragmenting, cylindrical with rounded ends, aseptate or 1-septate, hyaline or clear brown, smooth.

Type species: *Polyscytalum fecundissimum* Riess, 1853.

Ellis 1971.

***Polyscytalum gracilisporum* (Matsush.) B. Sutton & Hodges, 1977, Nova Hedwigia, 28: 488.**

Conidiophores macronematous, mononematous, simple or branched, straight, clear brown, smooth,  $35-60 \times 2.5-3.5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, determinate, denticulate, cylindrical. Ramo-conidia present. Conidia in long acropetal chains, cylindrical, 1-septate, hyaline or subhyaline, smooth,  $15-20 \times 2-2.5 \mu\text{m}$  (Fig. 46).

Basionym: *Sympodiella gracilispora* Matsush., 1975.

On dead leaves of *Cistus monspeliensis*.

Matsushima 1975; Ellis & Ellis 1997.

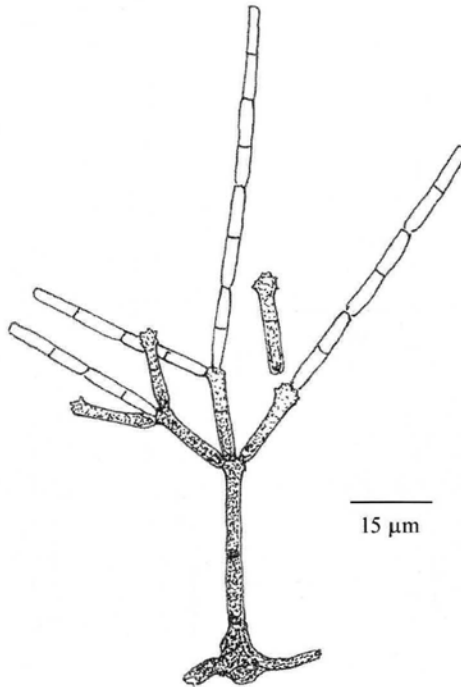


Fig. 46 - *Polyscytalum gracilisporum*. Conidiophores solitary, frequently branched. Conidiogenous cells polyblastic, determinate, denticulate. Ramo-conidia present. Conidia in acropetal chains, cylindrical, 1-septate, subhyaline.

***Chuppia* Deighton**  
(1965, Mycol. Pap., 101: 32)

Conidiophores micronematous, irregularly branched, yellow brown to dark olive brown, smooth. Conidiogenous cells monoblastic, integrated, intercalary, determinate, cylindrical, denticulate, with conical denticles. Conidia solitary, pleurogenous, simple, ellipsoidal, irregular in shape, muriform, constricted at the septa, with a basal protuberant hilum, dark yellow brown, smooth to verruculose.

Type species: *Chuppia sarcinifera* Deighton, 1965.

Ellis 1971; Carmichael & al. 1980.

***Chuppia sarcinifera* Deighton, 1965, Mycol. Pap., 101: 32.**

Conidiophores micronematous, irregularly branched, olive brown, smooth. Conidiogenous cells monoblastic, integrated, determinate, doliiform, intercalary, denticulate, yellow brown. Conidia solitary, pleurogenous, ellipsoidal irregular in shape, muriform, sarciniform, constricted at the septa with protuberant hilum, dark brown, smooth, 16-32 (up to 48) × 10-20 (up to 30) μm (Fig. 47).

On dead leaves of *Pistacia lentiscus*.

Ellis 1971; Matsushima 1975.

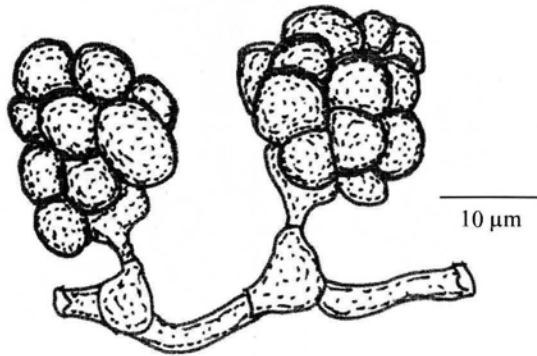


Fig. 47 - *Chuppia sarcinifera*. Conidiophores micronematous. Conidiogenous cells monoblastic, determinate, denticulate. Conidia muriform, sarciniform, dark brown.

***Botrytis*** P. Micheli  
(1794, Neues Mag. Bot., 1: 120)

Sclerotia frequently present. Conidiophores macronematous, mononematous, solitary or in groups, erect, straight or flexuous, branched, often dichotomously or trichotomously, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal on branches, determinate, denticulate, inflated, clavate, spherical or subspherical. Conidia acropleurogenous, ellipsoidal or spherical, aseptate or rarely septate, pale brown, smooth. A phialidic state with conidia subspherical, colourless, frequently present

Type species: *Botrytis cinerea* Pers.: Fr., 1794.

Ellis 1971; Hennebert 1973; Carmichael & al. 1980; Domsch & al. 1993.

***Botrytis cinerea*** Pers.: Fr., 1794, Neues Mag. Bot., 1: 126.

Sclerotia very dark or black. Conidiophores macronematous, frequently grouped, branched, smooth, clear brown in the lower part, very long up to 2 mm or more, 16-30  $\mu\text{m}$  large. Conidiogenous cells polyblastic, integrated, terminal on branches, determinate, denticulate, inflated, very different in form and dimensions, colourless or very pale brown. Conidia ellipsoidal or obovoid, frequently with a small protuberant hilum, aseptate, colourless to pale brown, smooth, 6-18  $\times$  4-11  $\mu\text{m}$  (Fig. 48).

On dead leaves of *Arbutus unedo*, *Chamaerops humilis*, *Cistus incanus*, *C. monspeliensis*, *Myrtus communis*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Quercus ilex*.

Ellis 1971; Matsushima 1975; Domsch & al. 1993; Ellis & Ellis 1997.

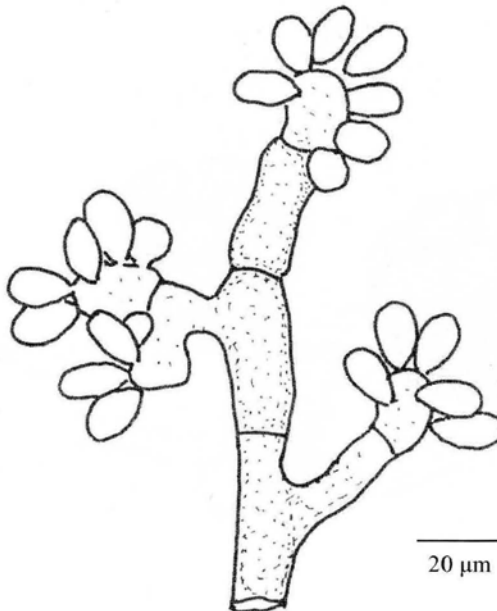


Fig. 48 - *Botrytis cinerea*. Conidiophores grouped. Conidiogenous cells polyblastic, determinate, obscurely denticulate. Conidia ellipsoidal or obovoid, 0-septate, colourless to pale brown, smooth.

*Botrytis allii* Munn, 1917, Bulletin of the New York Agricultural Experimental Station, 437: 396.

Sclerotia present, frequently aggregated. Conidiophores macronematous, branched, clear brown, smooth, up to 1 mm long. Conidiogenous cells polyblastic, integrated, terminal on branches, determinate, denticulate, inflated, very different in form and dimensions. Conidia strongly ellipsoidal, pyriform, occasionally septate, colourless, smooth,  $5-11 \times 3-8 \mu\text{m}$  (Fig. 49).

Synonym: *Botrytis aclada* Fresen., 1850.

On dead leaves of *Euphorbia dendroides*.

Ellis 1971; Ellis & Ellis 1997.

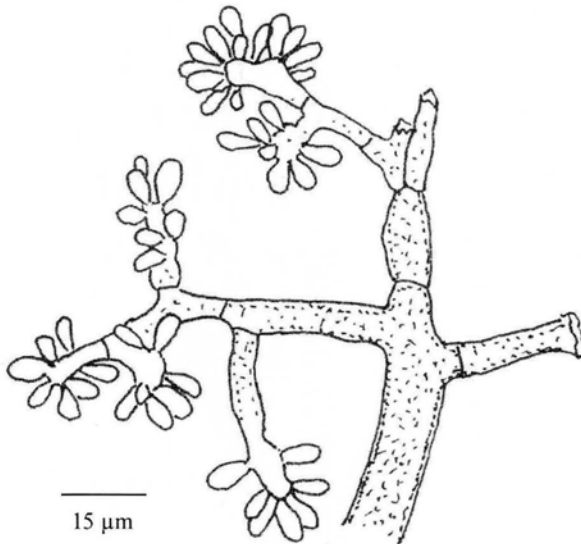


Fig. 49 - *Botrytis allii*. Conidiophores branched. Conidiogenous cells polyblastic, determinate, denticulate. Conidia strongly ellipsoidal, rarely septate, colourless, smooth.

***Anungitea*** B. Sutton  
(1973, Mycol. Pap., 132: 10)

Conidiophores macronematous, mononematous, sometimes caespitose, erect, straight or flexuous, unbranched, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate. Conidia solitary or in acropetal unbranched chains, cylindrical, fusiform, with scar at each end, aseptate or septate, hyaline to pale brown, smooth.

Type species: *Anungitea fragilis* B. Sutton, 1973.

Sutton 1973; Matsushima 1975; Carmichael & al. 1980; Kirk 1982.

***Anungitea caespitosa*** Crous, W. B. Kendr. & M. J. Wingf., 1995, Can. J. Bot. 73: 225.

Conidiophores macronematous, mononematous, erect, unbranched, caespitose, brown,  $30-65 \times 3-4 \mu\text{m}$ ; long conidiophores setiform,  $70-340 \times 3.5-5 \mu\text{m}$ , sometimes sterile, also present. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, with denticles inconspicuous, hyaline to clear brown,  $10-15 \times 3 \mu\text{m}$ . Primary conidia, clavate, with rounded apex and a truncate base, producing secondary blastic conidia in short acropetal chains, clavate to ellipsoidal, aseptate, hyaline, smooth,  $11-20 \times 3-3.5 \mu\text{m}$  (Fig. 50).

On dead leaves of *Quercus ilex*.

Crous & al. 1995.

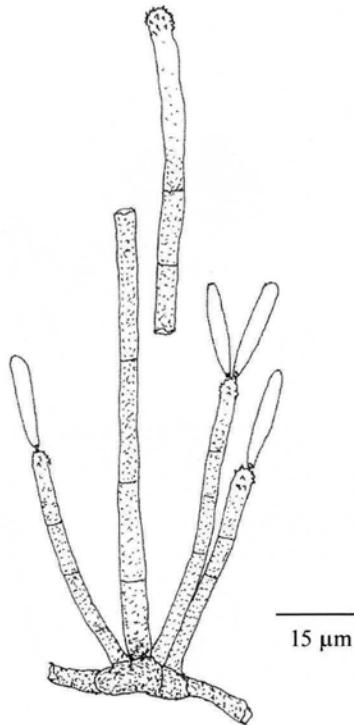


Fig. 50 - *Anungitea caespitosa*. Conidiophores caespitose, sometimes setiform. Conidiogenous cells polyblastic, terminal, sympodial, denticulate. Primary conidia forming secondary conidia in blastic acropetal chains, 0-septate, hyaline, smooth.

*Anungitea fragilis* B. Sutton, 1973, Mycol. Pap., 132: 10

Conidiophores macronematous, mononematous, erect, unbranched, dark brown, up to  $65 \times 2.5\text{--}4 \mu\text{m}$  at the base, occasionally extended to a setiform conidiophore up to  $400 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, clear brown. Conidia solitary or in acropetal chains, cylindrical, with conspicuous scar at each end, 1-septate, very pale brown, smooth,  $10\text{--}13 \times 1.5\text{--}2 \mu\text{m}$  (Fig. 51).

On dead leaves of *Ilex aquifolium*, *Olea europea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Taxus baccata*.

Sutton 1973; Ellis & Ellis 1997.

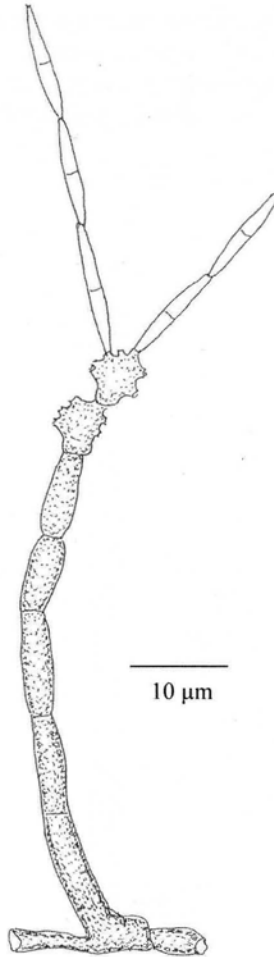


Fig. 51 - *Anungitea fragilis*. Conidiophores erect, unbranched. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia in acropetal chains, cylindrical, 1-septate, pale brown, smooth.

*Anungitea uniseptata* Matsush., 1975, *Icones Microfungorum a Matsushima Lectorum*: 8. Conidiophores macronematous, mononematous, solitary, erect, straight or gently curved, unbranched, clear brown,  $35-80 \times 2-3 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, brown. Conidia in acropetal chains, cylindrical, with scar at each end, 1-septate in the middle part, hyaline, smooth,  $12-17 \times 2-3 \mu\text{m}$  (Fig. 52). On dead leaves of *Olea europaea* var. *sylvestris*, *Pistacia lentiscus*, *Quercus ilex*. Matsushima 1975, 1987.

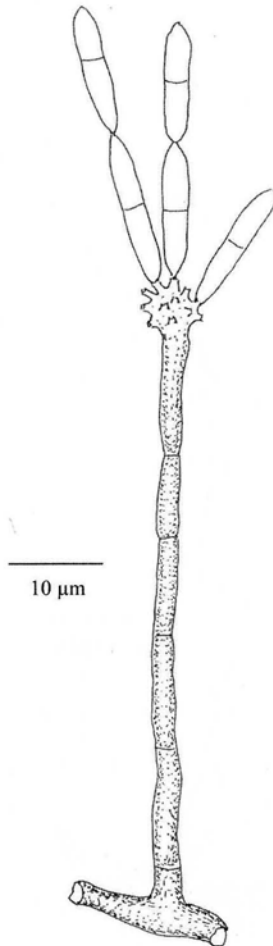


Fig. 52 - *Anungitea uniseptata*. Conidiophores erect, unbranched. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia in acropetal chains, cylindrical, 1-septate, hyaline, smooth.



**Anungitea longicatenata** Matsush., 1975, *Icones Microfungorum a Matsushima Lectorum*: 7.

Conidiophores macronematous, mononematous, solitary, erect, straight, unbranched, brown,  $40-100 \times 2.8-3.5 \mu\text{m}$ . Conidiogenous cell polyblastic, integrated, terminal, sympodial, denticulate. Conidia in acropetal chains, cylindrical, 0-2-septate, commonly 1-septate, hyaline, smooth,  $11-18 \times 2.5-4 \mu\text{m}$  (Fig. 53).

On dead leaves of *Arbutus unedo*.

Matsushima 1975.

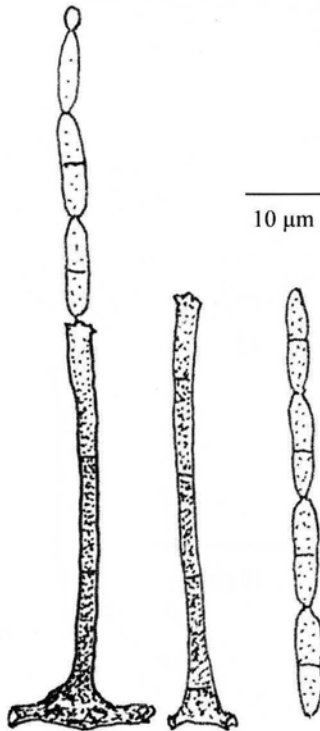


Fig. 53 - *Anungitea longicatenata*. Conidiophores erect, solitary. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia in acropetal chains, cylindrical, 0-1-septate, hyaline, smooth.

***Oncopodiella*** G. Arnaud  
(1965, *Persoonia*, 3: 409)

Conidiophores macronematous, mononematous, flexuous, unbranched, clear brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, cylindrical. Conidia solitary, acropleurogenous, corniculate, pyriform, subspherical, muriform with a protuberant hilum, pale to dark brown, 3-4 hyaline or subhyaline horns, smooth.

Type species: *Oncopodiella trigonella* (Sacc.) Rifai, 1965.

Ellis 1971; Carmichael & al. 1980.

***Oncopodiella trigonella*** (Sacc.) Rifai 1965, *Persoonia*, 3: 409.

Conidiophores macronematous, mononematous, unbranched, flexuous, clear brown, smooth, up to  $30 \times 1-3 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticles cylindrical. Conidia solitary, acropleurogenous, corniculate, pyriform, subspherical, muriform with a protuberant hilum, and 2-4 conical hyaline horns  $2-3 \mu\text{m}$  long, pale to dark brown, smooth,  $14-19 \times 12-16 \mu\text{m}$  (Fig. 54).

Basionym: *Sporidesmium trigonellum* Sacc., 1882.

Synonym: *Piricauda trigonella* (Sacc.) R. T. Moore, 1959.

On dead leaves of *Pistacia lentiscus*.

Ellis 1971; Ellis & Ellis 1997.

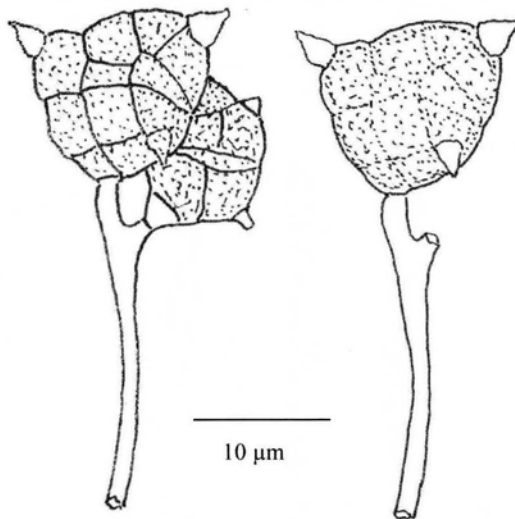


Fig. 54 - *Oncopodiella trigonella*. Conidiophores unbranched, flexuous. Conidiogenous cells sympodial, denticulate. Conidia corniculate, muriform, with protuberant hilum, pale to dark brown, smooth.

*Camposporium* Harkn.

(1884, Bulletin of the California Academy of Science, 1: 37)

Conidiophores macronematous, mononematous, erect, straight or slightly flexuous, unbranched, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, cylindrical or subulate, each denticle a cylindrical pedicel or separating cells. Conidia solitary, acropleurogenous, cylindrical with rounded ends or rounded at the apex and conico-truncate at the base, sometimes appendiculate, with several septa, clear brown, with end cells colourless or subhyaline, smooth.

Type species: *Camposporium antennatum* Harkn., 1884.

Ellis 1971; Carmichael & al. 1980.

*Camposporium antennatum* Harkn., 1884, Bulletin of the California Academy of Science, 1: 37.

Conidiophores macronematous, mononematous, unbranched, brown, smooth, up to  $170 \times 5-8 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticles cylindrical like a pedicel or separating cells. Conidia solitary, cylindrical sometimes with basal pedicel, 4-14-septate, clear brown, smooth,  $45-75 \times 7-9 \mu\text{m}$  ( $68-100 \times 8-10.5$ , Matsushima 1975), often with 1-3 divergent setulae aseptate up to  $40 \times 1 \mu\text{m}$  on the apical cell (Fig. 55).

On dead leaves of *Phillyrea angustifolia*, *Pistacia lentiscus*, *Quercus ilex*.

Ellis 1971; Matsushima 1975, 1980, 1983, 1989, 1993, 1996; Ellis & Ellis 1997.

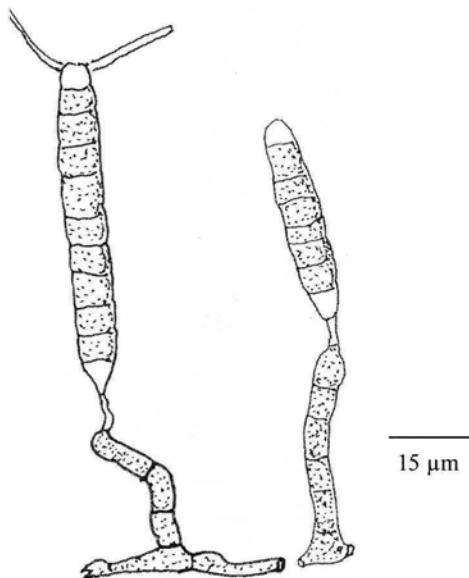


Fig. 55 - *Camposporium antennatum*. Conidiophores, unbranched. Conidiogenous cells polyblastic, sympodial, denticulate. Separating cells present. Conidia solitary with divergent setulae, clear brown, smooth.

***Camposporium pellucidum*** (Grove) S. Hughes, 1951, Mycol. Pap., 36: 9.

Conidiophores macronematous, mononematous, unbranched, brown, smooth, up to  $150 \times 5-8 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticles cylindrical like a pedicel or separating cells. Conidia solitary, cylindrical frequently with basal pedicel, up to 16 septa, apex rounded or prolonged in a septate appendage up to  $145 \times 2 \mu\text{m}$ , clear brown, smooth,  $80-140 \times 7.5-12 \mu\text{m}$  (Figs. 56, 57).

Basionym: *Bactrodesmium caulicola* var. *pellucidum* Grove, 1886.

On dead leaves of *Quercus ilex*.

Ellis 1971; Matsushima 1983; Ellis & Ellis 1997.

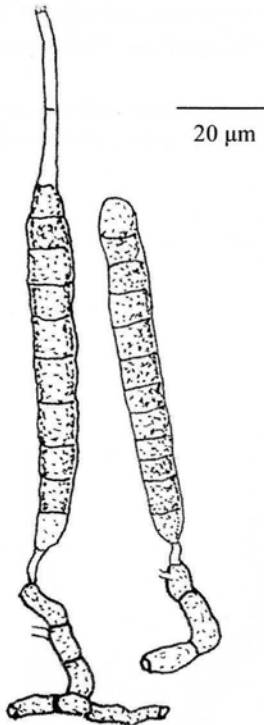


Fig. 56 - *Camposporium pellucidum*. Conidiophores unbranched. Conidiogenous cells polyblastic, sympodial, denticulate. Separating cells present. Conidia solitary, with apical, septate appendage, clear brown, smooth.

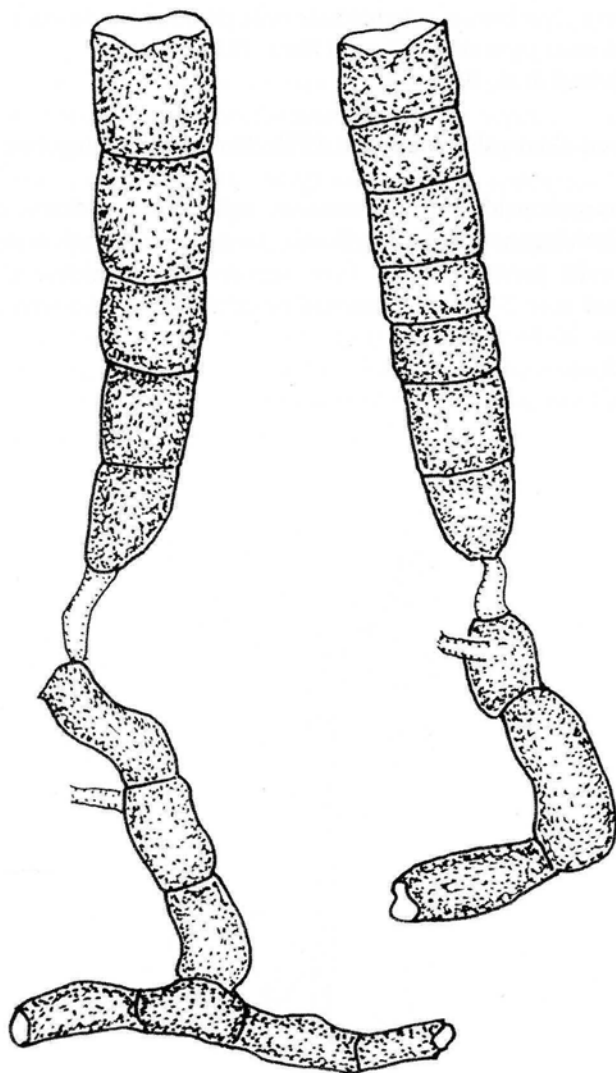


Fig. 57 - *Camposporium pellucidum*. Detail of separating cells.

*Nakataea* Hara

(1939, Diseases of the Rice Plant: 2. ed. 185)

Conidiophores macronematous, mononematous, rarely branched, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, intercalary, sympodial, sometimes geniculate, denticulate, cylindrical. Denticles giving rise, from septation, to a separating cell. Conidia solitary, acropleurogenous, detached by separating cells breaking, falcate, sigmoid, mid to pale brown, frequently 3-septate and with cells of different colour, end cells hyaline or very clear brown, intermediate cells clear brown, smooth.

Type species: *Nakataea sigmoidea* (Cavara) Hara, 1939.

Ellis 1971; Carmichael & al. 1980.

*Nakataea fusispora* (Matsush.) Matsush., 1975, Icones Microfungorum a Matsushima Lectorum: 100.

Conidiophores macronematous, mononematous, unbranched, solitary, erect, flexuous, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate. Separating cells present formed from septation of denticles. Conidia solitary, fusiform, with basal scar, 3-septate, intermediate cells clear brown, end cells very clear brown, verruculose,  $26-34 \times 4.5-6 \mu\text{m}$  (Fig. 58).

Basionym: *Vakrabeeja fusispora* Matsush., 1971.

On dead leaves of *Pistacia lentiscus*, *Quercus ilex*.

Matsushima 1975.

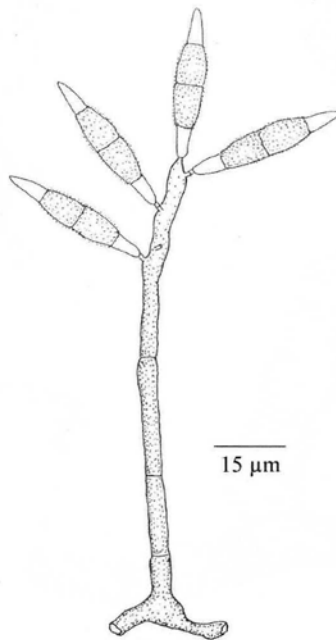


Fig. 58 - *Nakataea fusispora*. Conidiophores unbranched, erect. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, fusiform, with end cells paler, smooth.

***Hansfordia*** S. Hughes  
(1915, Mycol. Pap., 43: 15)

Conidiophores macronematous, mononematous, sometimes setiform, erect or repent, branched, straight or flexuous, hyaline or brown, smooth. Conidiogenous cells polyblastic, integrated, terminal or discrete, sympodial, denticulate, cylindrical or clavate, each denticule a separating cell. Conidia solitary, acropleurogenous, simple, spherical or subspherical, ellipsoidal, fusiform, aseptate, hyaline to clear brown, smooth or echinulate. Hughes 1951 a; Ellis 1971; Carmichael & al. 1980.

***Hansfordia pulvinata*** (Berk. & M. A. Curtis) S. Hughes, 1958, Can. J. Bot. 36: 771.

Conidiophores macronematous, mononematous, erect or repent, sometimes setiform, repeatedly branched in the upper part, clear to clear brown, very variable in length, 2-5  $\mu\text{m}$  thick. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, each denticule is a subhyaline separating cell, smooth, up to  $20 \times 1.5\text{-}4 \mu\text{m}$ . Conidia solitary, acropleurogenous, simple, subspherical, aseptate, pale brown, minutely echinulate, 4-7  $\mu\text{m}$  in diameter (Figs. 59, 60).

Basionym: *Polyactis pulvinata* Berk. & M. A. Curtis, 1875.

Synonym: *Dicyma pulvinata* (Berk. & M. A. Curtis) Arx, 1981.

On dead leaves of *Cistus monspeliensis*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Smilax aspera*.  
Ellis 1971; Matsushima 1975, 1980; Ellis & Ellis 1997.

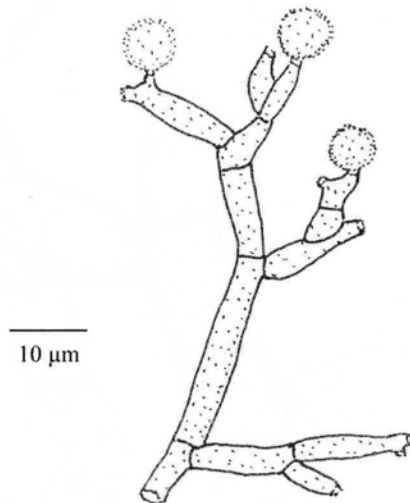


Fig. 59 - *Hansfordia pulvinata*. Conidiophores erect, repeatedly branched in the upper part. Conidiogenous cells polyblastic, sympodial, denticulate, each denticule a separating cell. Conidia solitary, subspherical, 0-septate, pale brown, minutely echinulate.

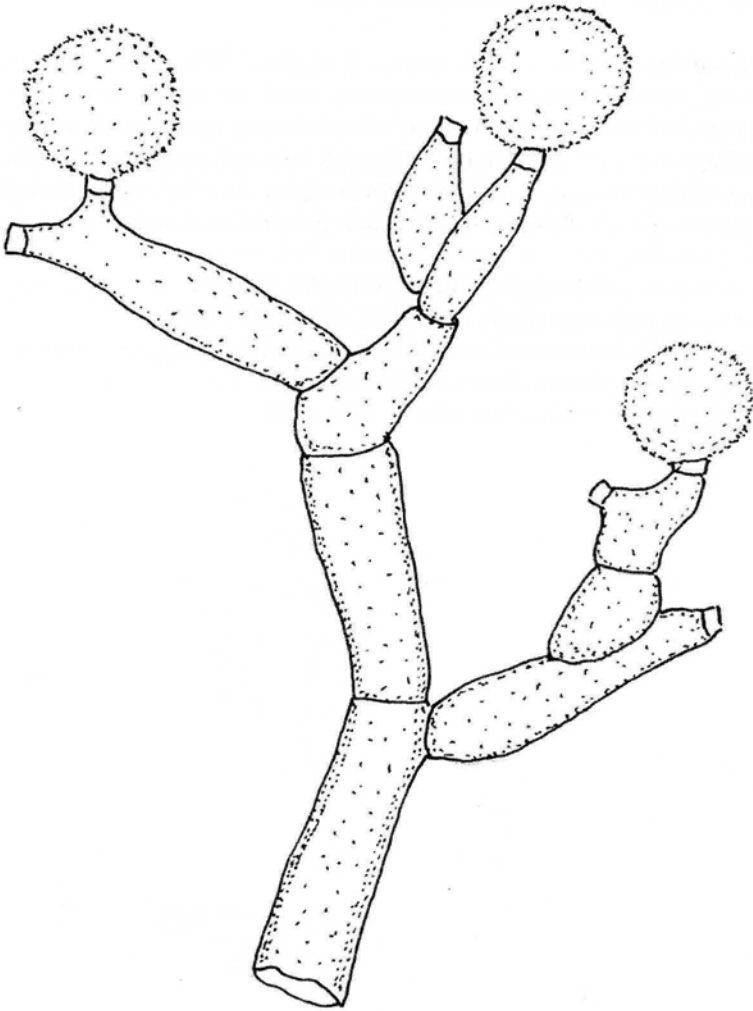


Fig. 60 - *Hansfordia pulvinata*. Detail of separating cells.



*Conoplea* Pers.

(1801, Tent. disp. meth. Fung.: 55)

Conidiophores macronematous, mononematous, straight or flexuous, torsive in some species, branched, clear to dark brown, mostly finely and densely echinulate. Conidiogenous cells polyblastic, integrated, terminal, frequently discrete, sympodial, denticulate. Separating cells disk-like. Conidia solitary, acropleurogenous, simple, ellipsoidal, aseptate, clear to dark brown, mostly finely and densely echinulate, rarely smooth. Hughes 1960; Ellis 1971; Carmichael & al. 1980.

*Conoplea mangenotii* Reisinger, 1967, Revue Mycol., 31: 339.

Conidiophores macronematous, mononematous, repeatedly branched, septate with dark septa that separate more pigmented parts very variable in length, clear to dark brown, smooth or with scattered warts. Conidiogenous cells polyblastic, integrated, terminal, rarely intercalary, sympodial, denticulate with very small denticles, and disk-like separating cells,  $4-12 \times 4-7 \mu\text{m}$ . Conidia solitary, acropleurogenous, simple, ellipsoidal, aseptate, brown, smooth,  $8-11 \times 6-10 \mu\text{m}$  (Fig. 61).

Homotypic synonym: *Rhinocladium mangenotii* (Reisinger) Furlan. & Dianese, 1996.

On dead leaves of *Quercus ilex*.

Ellis 1976.

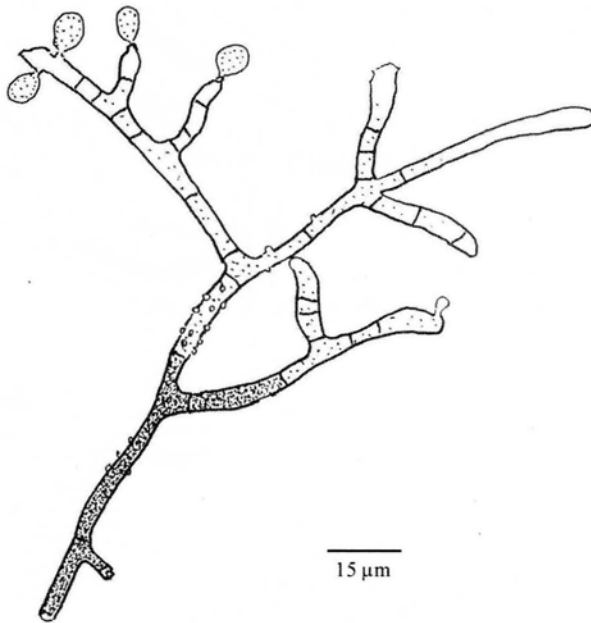


Fig. 61 - *Conoplea mangenotii*. Conidiophores branched. Conidiogenous cells polyblastic, sympodial, denticulate with disk-like separating cells. Conidia solitary, ellipsoidal, 0-septate, brown, smooth.

*Ardhachandra* (Matsush.) Subram. & Sudha  
(1978, Can. J. Bot., 56: 730)

Conidiophores macronematous, mononematous, erect, clear brown to brown. Conidiogenous cells polyblastic, integrated, terminal, sympodial, with prominent denticles, clear brown. Conidia solitary, *in aspectu frontali* fusiform, ellipsoidal, *in aspectu laterali* selenoid or lenticular, pointed at the ends, with lateral crest or bands, aseptate, clear brown or light yellow.

Type species: *Ardhachandra selenoides* (de Hoog) Subram. & Sudha, 1978.  
Subramanian & Sudha 1978.

*Ardhachandra cristaspora* (Matsush.) Subram. & Sudha, 1978, Can. J. Bot., 56: 731.

Conidiophores macronematous, mononematous, solitary, erect, straight or flexuous, clear brown to brown, 40-140 (230) × 3-4 μm. Conidiogenous cells polyblastic, terminal, integrate, sympodial, denticulate, clear brown. Conidia solitary, with pointed ends, *in aspectu frontali* broadly fusiform, 21-24 × 6.5-7.5 μm, *in aspectu laterali* selenoid, 5-6 μm large, with lateral crest, clear brown (Fig. 62).

Basionym: *Rhinochlaeniella cristaspora* Matsush., 1971.

Synonym: *Pseudobeltrania cristaspora* (Matsush.) de Hoog, 1977.

On dead leaves of *Myrtus communis*, *Pistacia lentiscus*.

Matsushima 1971, 1975, 1980, 1987, 1989.

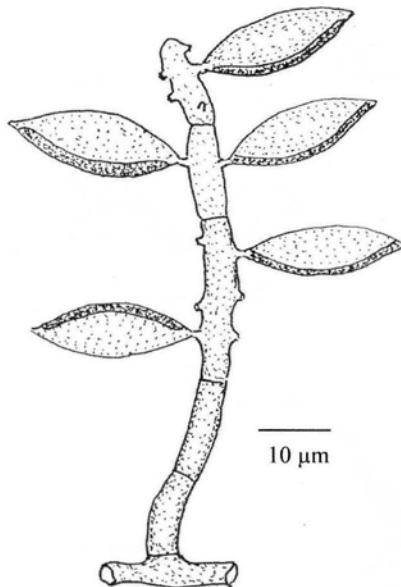


Fig. 62 - *Ardhachandra cristaspora*. Conidiophores solitary, erect or flexuose. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, fusiform, with a lateral crest, clear brown.

*Ardhachandra aequilatera* Matsush., 1987, Matsushima Mycological Memoirs 5: 3.  
Conidiophores macronematous, mononematous, solitary, unbranched, clear brown to brown,  $20-50 \times 3-4 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, clear brown. Conidia solitary, with pointed ends, aseptate, clear brown, *in aspectu frontali* broadly fusiform,  $15.5-18.5 \times 5.5-7.5 \mu\text{m}$ , *in aspectu laterali* lenticular  $4.5-6 \mu\text{m}$  large, with two lateral bands (Fig. 63).  
On dead leaves of *Myrtus communis*, *Pistacia lentiscus*.  
Matsushima 1987.

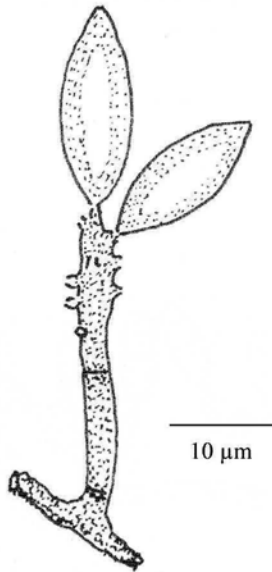


Fig. 63 - *Ardhachandra aequilatera*. Conidiophores solitary, erect. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, fusiform, with lateral bands, clear brown.

***Scolecobasidium*** E. V. Abbott  
(1927, *Mycologia*, 19: 30)

Conidiophores macronematous, mononematous, sometimes very short, erect or flexuous, unbranched, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal or rarely intercalary, sympodial, denticulate, cylindrical or clavate, denticles thread-like, usually breaking in two parts, one remains attached to the conidium. Conidia solitary, acropleurogenous, ellipsoidal, cylindrical, fusiform very variable in shapes, 0-3-septate, clear brown or olivaceous, smooth, verruculose or echinulate.

Type species: *Scolecobasidium terreum* E. V. Abbott, 1927.  
Ellis 1971; Carmichael & al. 1980; Domsch & al. 1993.

***Scolecobasidium constrictum*** E. V. Abbott, 1927, *Mycologia*, 19: 30.

Conidiophores, macronematous, mononematous, solitary, unbranched, clavate or cuneiform, clear brown, very short,  $5-30 \times 1.5-2.5 \mu\text{m}$ . Conidiogenous cells polyblastic, terminal, intercalary, sympodial, denticulate, denticle thread-like, usually breaking in two parts, one remains attached to the conidium. Conidia solitary, acropleurogenous, oblong ellipsoidal, 1-septate, usually constricted at the septum, pale olivaceous brown, verruculose or finely echinulate,  $5-12.5 \times 2-4 \mu\text{m}$  (Fig. 64).

Homotypic synonyms: *Dactylaria constricta* (E. V. Abbott) D. M. Dixon & Salkin, 1986; *Ochroconis constricta* (E. V. Abbott) de Hoog & Arx, 1974.

Synonym: *Heterosporium terrestre* R. G. Atk., 1952.

On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus salvifolius*, *Myrtus communis*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Smilax aspera*.

Ellis 1971; Matsushima 1975; Domsch & al. 1993.

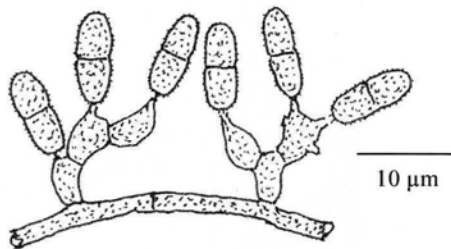


Fig. 64 - *Scolecobasidium constrictum*. Conidiophores very short. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, ellipsoidal, 1-septate, pale olivaceous brown, verruculose.

*Scolecobasidium tshawytschae* (Doty & D. W. Slater) MacGinnis & Aiello, 1974, Trans Br. mycol. Soc., 63: 202.

Conidiophores macronematous, mononematous, erect, unbranched, clear brown, smooth,  $4-25 \times 1.5-2.5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticle thread-like, usually breaking in two parts, one remains attached to the conidium. Conidia solitary, acropleurogenous, cylindrical rounded at the ends, 1-3-septate, sometimes constricted at the septa, clear brown, verruculose of finely echinulate,  $9-20 \times 2.5-4.5 \mu\text{m}$ . Chlamyospores rarely present (Fig. 65).

Basionym: *Heterosporium tshawytschae* Doty & D. W. Slater, 1946.

Synonyms: *Scolecobasidium variable* G. L. Barron & L. V. Busch, 1962; *Scolecobasidium macrosporum* R. Y. Roy, R. S. Dwivedi & R. R. Mishra, 1962; *Ochroconis tshawytschae* (Doty & D. W. Slater) Kiril. & Al-Achmed, 1977.

On dead leaves of *Chamaerops humilis*, *Pistacia lentiscus*, *Quercus ilex*. Ellis 1971; Domsch & al. 1993; Matsushima 1980.

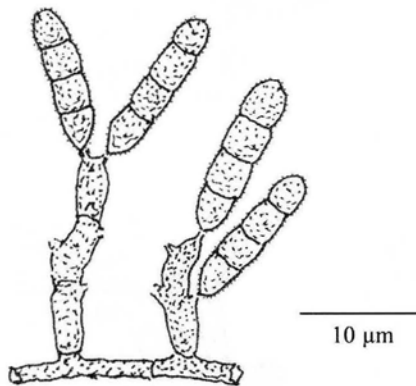


Fig. 65 - *Scolecobasidium tshawytschae*. Conidiophores erect, unbranched. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, cylindrical, septate, clear brown, verruculose.

*Scolecobasidium humicola* G. L. Barron & L. V. Busch, 1962, Can. J. Bot., 40: 83.

Conidiophores, macronematous, mononematous, solitary, erect, flexuous, unbranched, brown to dark brown,  $20-300 \times 2-2.5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal sympodial, slightly clavate, denticulate, denticles thread-like breaking in two parts, one remains attached to the conidium. Conidia solitary, acropleurogenous, oblong to cylindrical, rounded at the ends, generally 1-septate, infrequently constricted at the septum, pale olivaceous brown, finely echinulate,  $7-15 \times 2.5-4.5 \mu\text{m}$  (Figs. 66, 67).

Homotypic synonym: *Ochroconis humicola* (G. L. Barron & L. V. Busch) de Hoog & Arx, 1973.

On dead leaves of *Phillyrea angustifolia*.

Ellis 1971; Matsushima 1975, 1980, 1989; Domsch & al. 1993.

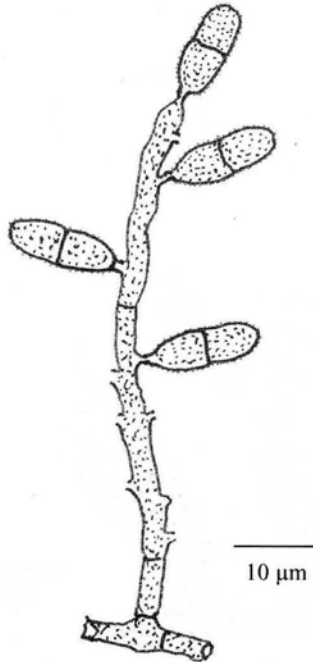


Fig. 66 - *Scolecobasidium humicola*. Conidiophore solitary; gently flexuous. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, cylindrical, 1-septate, pale olivaceous brown, finely echinulate.

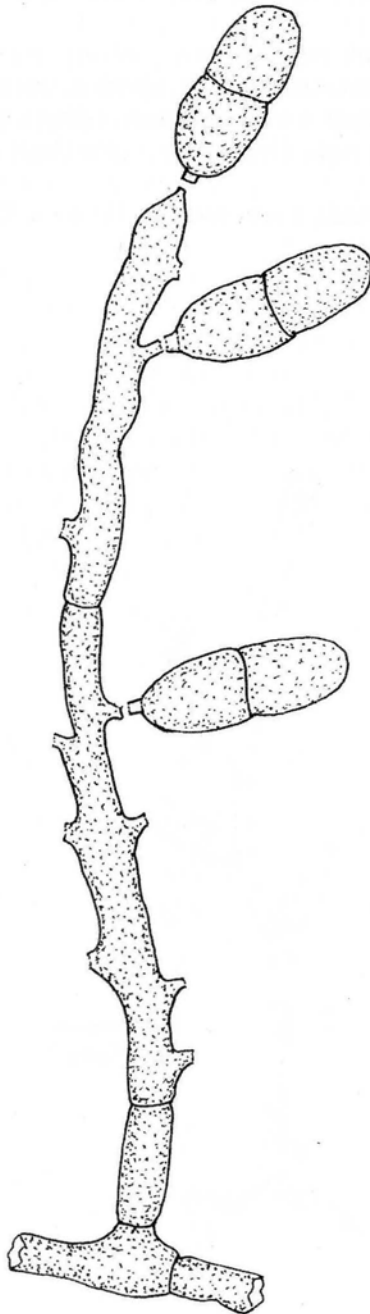


Fig. 67 - *Scolecobasidium humicola*. Detail of conidiogenous cells, denticles breaking in two parts.

*Scolecobasidium longiphorum* Matsush., 1975, *Icones Microfungorum a Matsushima Lectorum*: 127.

Conidiophores macronematous, mononematous, solitary, erect, flexuous, unbranched, brown,  $50-600 \times 2-3 \mu\text{m}$ . Conidiogenous cells polyblastic, terminal, intercalary, sympodial, denticulate. Conidia solitary, acropleurogenous, cylindrical, rounded at the ends, 3-septate, not constricted at the septa, clear brown, verruculose,  $12-19 \times 3.5-4.5 \mu\text{m}$  (Fig. 68).

On dead leaves of *Arbutus unedo*, *Cistus incanus*, *C. monspeliensis*, *Phillyrea latifolia*, *Pistacia lentiscus*, *Quercus ilex*.

Matsushima 1975.

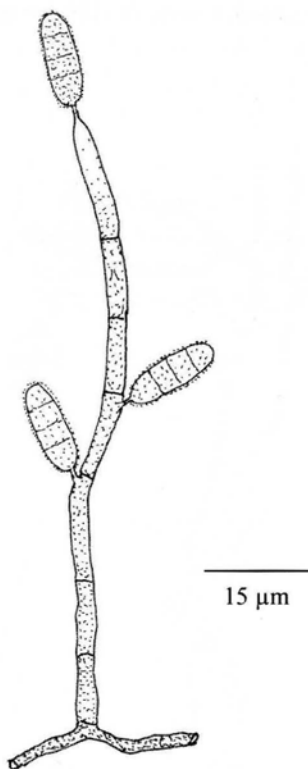


Fig. 68 - *Scolecobasidium longiphorum*. Conidiophore erect, flexuous. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, cylindrical, 3-septate, clear brown, verruculose.



***Selenodriella*** R.F. Castañeda & W. B. Kendr.  
(1990, University of Waterloo, Biology Series, 33: 34)

Conidiophores macronematous, mononematous, erect, setiform, straight or flexuous, sometimes branched, brown, clear brown, smooth. Conidiogenous cells polyblastic, discrete lageniform, sympodial, denticulate, borne laterally and terminally on the conidiophore or its branches. Conidia acerose or fusiform, frequently aggregated, colourless, smooth.

Type species: *Selenodriella fertilis* (Piroz. & Hodges) R. F. Castañeda & W. B. Kendr., 1990.

Castañeda Ruiz & Kendrick 1990 b.

***Selenodriella fertilis*** (Piroz. & Hodges) R. F. Castañeda & W. B. Kendr., 1990, University of Waterloo, Biology Series, 33: 34.

Conidiophores macronematous, mononematous, setiform, frequently branched in the upper part, solitary or in small group, brown, 60-140 (or more)  $\times$  3-4  $\mu$ m. Conidiogenous cells polyblastic, discrete, sympodial, denticulate, ampulliform, hyaline, produced laterally and terminally on branches or on the main axis of the conidiophore. Conidia aggregated, hyaline, falcate, aseptate or with a middle septum in some strains, smooth, 12-20  $\times$  1.5-3  $\mu$ m (Fig. 69).

Basionym: *Circinotrichum fertile* Piroz. & Hodges, 1973.

Synonym: *Idriella fertilis* (Piroz. & Hodges) Matsush., 1975.

On dead leaves of *Chamaerops humilis*, *Cistus monspeliensis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *Pistacia lentiscus*.

Matsushima 1975; Castañeda Ruiz & Kendrick 1990 b.

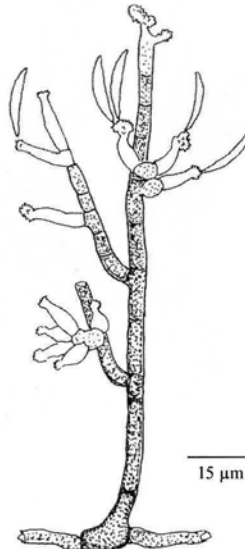


Fig. 69 - *Selenodriella fertilis*. Conidiophores frequently branched. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia aggregated, falcate, 0-septate, hyaline, smooth.

***Dicyma* Boulanger**  
(1897, Rev. Gén. Bot., 9: 18)

Conidiophores macronematous or semi-macronematous, mononematous, straight or flexuous, repeatedly branched, dark or olivaceous brown, smooth. Conidiogenous cells on branches, polyblastic, integrated, terminal, or discrete, sympodial, cylindrical to clavate, denticulate, denticles cylindrical. Conidia solitary, acropleurogenous, obovoid, ellipsoidal or subspherical, aseptate, olivaceous, smooth or verruculose.

Type species: *Dicyma ampullifera* de Lesd., 1897.

Ellis 1971; Carmichael & al. 1980.

***Dicyma ovalispora*** (S. Hughes) Arx, 1981, Gen. Fungi Sporul. Cult., Ed. 3 : 316.

Conidiophores macronematous, mononematous, brown in the lower part, branched, with apex setiform, up to  $600 \times 3-4 \mu\text{m}$ . Conidiogenous cells on branches, polyblastic, integrated, terminal, sympodial, denticulate, pale brown, up to  $30 \times 2-4 \mu\text{m}$ . Conidia solitary, ellipsoidal, aseptate, subhyaline, smooth,  $8-11 \times 4-6 \mu\text{m}$  (Fig. 70).

Basionym: *Hansfordia ovalispora* S. Hughes, 1951.

On dead leaves of *Olea europaea* var. *sylvestris*.

Ellis 1971.

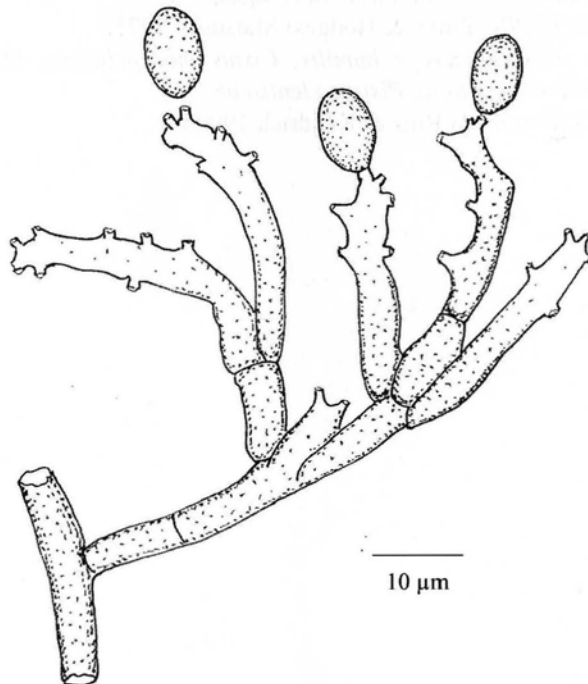


Fig. 70 - *Dicyma ovalispora*. Conidiophores repeatedly branched. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, ellipsoidal, 0-septate, subhyaline, smooth.

***Dicyma olivacea*** (Emoto & Tubaki) Arx, 1981, Gen. Fungi Sporul. Cult., Ed. 3: 316.

Conidiophores macronematous, erect, brown, dicotomously branched, branches needle-shaped, up to  $150 \times 2-3 \mu\text{m}$ . Conidiogenous cells on lateral branches, polyblastic, sympodial, denticulate, cylindrical, short and slightly swollen, brown. Conidia solitary, ellipsoidal, aseptate, light-brown, smooth,  $4.5-6 \times 3-3.3 \mu\text{m}$  (Fig. 71).

Anamorph of *Ascotricha erinacea* Zambett., 1955.

Basionym: *Gonytrichella olivacea* Emoto & Tubaki, 1971.

Synonym: *Puciola spinosa* De Bert., 1976.

On dead leaves of *Myrtus communis*.

De Bertoldi 1976.

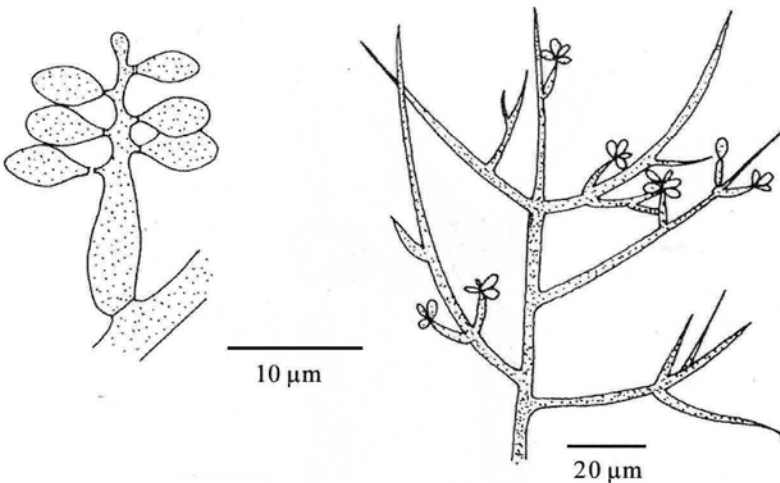


Fig. 71 - *Dicyma olivacea*. Conidiophores dichotomously branched. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, ellipsoidal, 0-septate, pale brown, smooth.

***Dactylaria* Sacc.**(1880, *Michelia*, 2: 20)

Conidiophores macronematous, mononematous, erect, straight or flexuous, cylindrical, subhyaline or brown. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticles cylindrical. Conidia acropleurogenous, solitary, variously shaped, septate, hyaline to clear brown, smooth.

Type species: *Dactylaria purpurella* (Sacc.) Sacc., 1880.

Ellis 1976; Carmichael & al. 1980; Hoog 1985.

***Dactylaria fusiformis*** Shearer & J. L. Crane, 1971, *Mycologia*, 63: 243.

Conidiophores macronematous, mononematous, simple, erect, cylindrical, clear brown to brown,  $50-120 \times 3-4.5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticles cylindrical  $0.6 \mu\text{m}$  long. Conidia solitary, acropleurogenous, hyaline, fusiform, curved, 3-7-septate, generally 3-septate,  $30-40 \times 2.5 \mu\text{m}$ , smooth (Fig. 72).

Homotypic synonym: *Mirandina fusiformis* (Shearer & J. L. Crane) Matsush., 1987.

On dead leaves of *Myrtus communis*.

Matsushima 1975; Hoog 1985; Ellis & Ellis 1997.

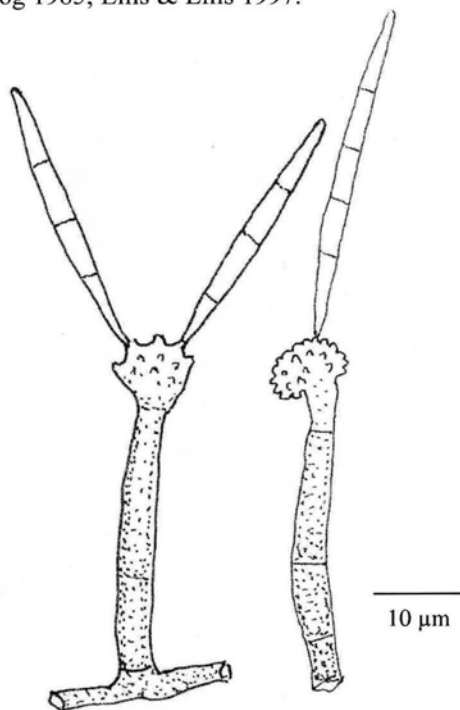


Fig. 72 - *Dactylaria fusiformis*. Conidiophores erect. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, fusiform, septate, hyaline, smooth.

*Dactylaria obtriangularia* Matsush., 1975, *Icones Microfungorum a Matsushima Lectorum*: 51.

Conidiophores macronematous, mononematous, densely aggregated, erect, unbranched, straight or slightly flexuous, cylindrical, brown,  $5-45 \times 2.5-4 \mu\text{m}$ . Conidiogenous cells polyblastic, terminal, sympodial, denticulate, denticles cylindrical  $0.5 \mu\text{m}$  wide, growing at right angles. Conidia solitary, acropleurogenous, clavate, obtriangular, hyaline or very clear brown, with a septum above the middle, rarely 0 or 2-septate,  $24-37 \times 2-3 \mu\text{m}$  ( $18-24 \times 2-2.8 \mu\text{m}$ , Hoog 1985) (Fig. 73).

On dead leaves of *Myrtus communis*.

Matsushima 1975, 1980, 1996; Ellis & Ellis 1997; Hoog 1985.

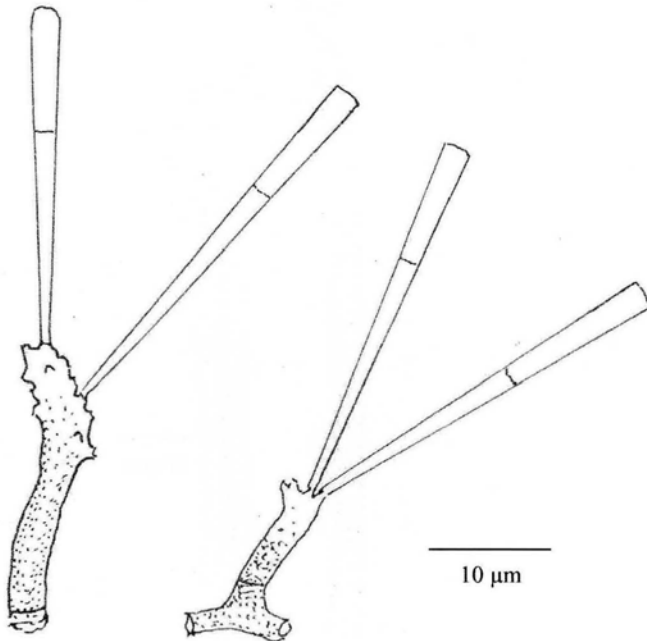


Fig. 73 - *Dactylaria obtriangularia*. Conidiophores erect or slightly flexuous. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, obtriangular, 1-septate, hyaline, smooth.

***Dactylaria parvispora*** (Preuss) de Hoog & Arx, 1973, Kavaka, 1: 58.

Conidiophores macronematous, mononematous, simple, erect, dark brown,  $100-300 \times 4-6$   $\mu\text{m}$ . Conidiogenous cells integrated, terminal, sympodial, denticulate. Conidia solitary, acropleurogenous, fusiform to obovoid, with base acuminate, 3-septate, subhyaline, smooth or verruculose,  $10-20 \times 3.5-5.5$   $\mu\text{m}$  (Fig. 74).

Basionym: *Cordana parvispora* Preuss, 1853.

Synonyms: *Pleurophragmium simplex* (Berk. & Boome) S. Hughes, 1958; *Pleurophragmium parvisporum* (Preuss) Hol.-Jech., 1972; *Pleurophragmium taiwanense* Matsush., 1987.

On dead leaves of *Arbutus unedo*, *Phillyrea angustifolia*, *Pistacia lentiscus*.

Hoog 1985.

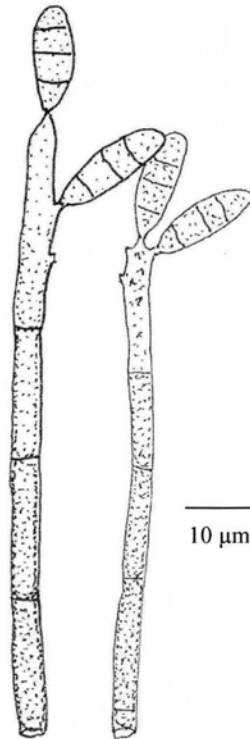


Fig. 74 - *Dactylaria parvispora*. Conidiophores erect. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, ellipsoidal, 3-septate, subhyaline.

*Dactylaria chrysosperma* (Sacc.) G. C. Bhatt & W. B. Kendr., 1968, Can. J. Bot., 46: 1257. Conidiophores macronematous, mononematous, erect, brown, up to  $120 \times 3-5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate. Conidia solitary, acropleurogenous, fusiform, 1-septate, hyaline or yellowish, smooth,  $18-26 \times 3-4 \mu\text{m}$  (Fig. 75).

Basionym: *Rhinotrichum chrysospermum* Sacc., 1876.

Synonym: *Diplorhinotrichum chrysospermum* (Sacc.) S. Hughes, 1958.

On dead leaves of *Chamaerops humilis*.

Ellis 1976; Hoog 1985; Ellis & Ellis 1997.

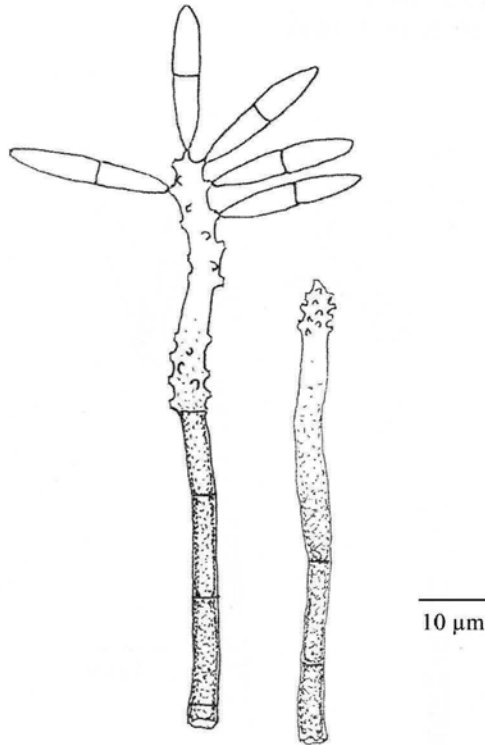


Fig. 75 - *Dactylaria chrysosperma*. Conidiophores erect. Conidiogenous cells polyblastic, sympodial, denticulate. Conidia solitary, ellipsoidal to fusiform, 1-septate, hyaline, smooth.

*Solosympiella* Matsush.

(1971, Microfungi of the Solomon Islands and Papua New Guinea: 55)

Conidiophores macronematous, mononematous, sometimes with few branches, solitary, erect, hyaline or pigmented. Conidiogenous cells polyblastic, integrated, terminal, sympodial, denticulate, denticles cone-shaped. Conidia acropleurogenous, ellipsoidal to clavate, truncate at the base, sometimes septate, clear brown.

Type species: *Solosympiella clavata* Matsush., 1971.

Matsushima 1971; Carmichael & al. 1980.

*Solosympiella clavata* Matsush., 1971, Microfungi of the Solomon Islands and Papua New Guinea: 55.

Conidiophores macronematous, mononematous, solitary, unbranched, erect, brown, up to  $160 \times 2-3.5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, geniculate, denticulate, denticles cone-shaped. Conidia aggregated, clavate, truncate at the base, 1-septate, rarely 2-septate, subhyaline,  $12-18 \times 2-3 \mu\text{m}$  (Fig. 76).

On dead leaves of *Pistacia lentiscus*.

Matsushima 1971, 1975, 1980, 1987, 1989.

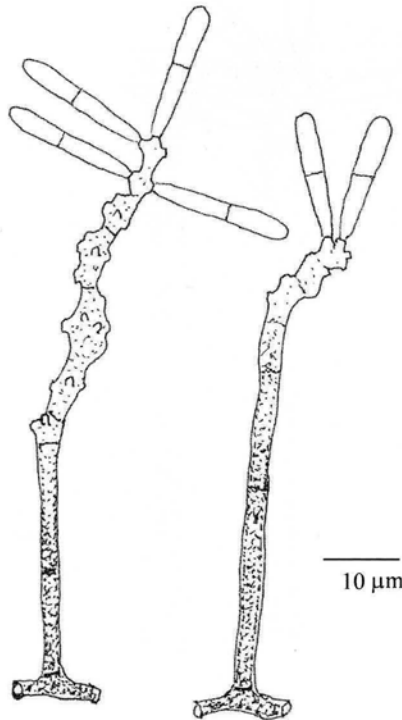


Fig. 76 - *Solosympiella clavata*. Conidiophores erect. Conidiogenous cells polyblastic, sympodial, denticulate, geniculate. Conidia clavate, septate, clear brown, subhyaline.



***Pleurophragmium* Costantin**  
(1888, Mucéd. Simpl.: 100)

Stroma often present, brown. Conidiophores macronematous, mononematous, unbranched, erect or flexuous, clear to dark brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sympodial, cylindrical, denticulate, denticle tapered to a point. Conidia solitary, acropleurogenous, simple, ellipsoidal to subclavate, tapered to a point at the base, aseptate or with few septa, hyaline to brown, smooth or verruculose.

Type species: *Pleurophragmium bicolor* Costantin, 1888.

Ellis 1971; Carmichael & al. 1980.

***Pleurophragmium triseptatum* Matsush.**, 1975, *Icones Microfungorum a Matsushima Lectorum*: 116.

Conidiophores macronematous, mononematous, solitary or grouped, erect, unbranched, brown,  $220-300 \times 4.5-6.5 \mu\text{m}$ . Conidiogenous cells polyblastic, terminal, integrated, sympodial, denticulate, cylindrical, geniculate. Conidia solitary, acropleurogenous, simple, cylindrical with obconical truncate base and rounded apex, 3-septate, subhyaline, smooth,  $17-23 \times 4.3-5.7 \mu\text{m}$  (Fig. 77).

Homotypic synonym: *Dactylaria triseptata* (Matsush.) R. F. Castañeda & W. B. Kendr., 1991.

On dead leaves of *Arbutus unedo*, *Quercus ilex*.

Matsushima 1975; Castañeda Ruitz & Kendrick 1991.

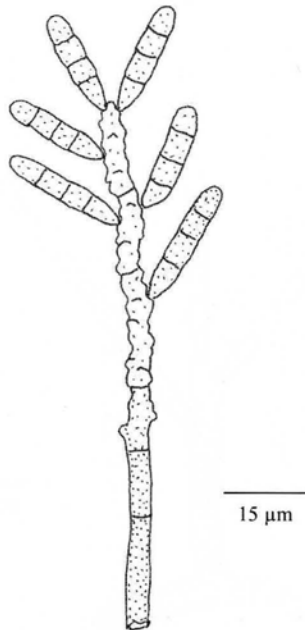


Fig. 77 - *Pleurophragmium triseptatum*. Conidiophores sometimes caespitose, erect. Conidiogenous cells polyblastic, sympodial, denticulate, geniculate. Conidia solitary, ellipsoidal, 3-septate, subhyaline, smooth.

***Subulispora* Tubaki**

(1971, Trans. Mycol. Soc. Japan, 12: 20)

Conidiophores macronematous, mononematous, unbranched, erect, straight or flexuous, septate, brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, sympodial, geniculate, cicatrized, with broad scars. Conidia solitary, acropleurogenous, subulate, truncate at the base, septate or rarely aseptate, colourless, smooth.

Type species: *Subulispora procurvata* Tubaki, 1971.

Ellis 1976; Carmichael & al. 1980; Hoog 1985.

***Subulispora britannica* B. Sutton, 1973, Trans. Br. mycol. Soc., 61: 422.**

Conidiophores macronematous, mononematous, erect, straight or flexuous, septate, brown, smooth, up to  $35 \times 3-4 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, sympodial, geniculate, with evident scars. Conidia sometimes slightly curved, truncate at the base, subulate, 2-8-septate, hyaline, smooth,  $45-85 \times 2.5-3 \mu\text{m}$  (Fig. 78).

On dead leaves of *Ilex aquifolium*, *Pistacia lentiscus*, *Quercus ilex*.

Ellis 1976; Hoog & Oorschot 1985; Ellis & Ellis 1997.

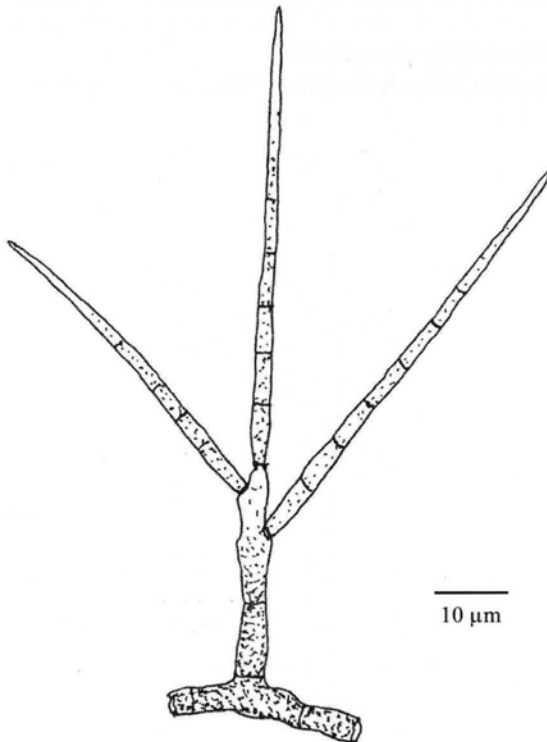


Fig. 78 - *Subulispora britannica*. Conidiophores erect, flexuous. Conidiogenous cells polyblastic, sympodial, geniculate, with evident scars. Conidia subulate, gently curved, septate, hyaline, smooth.

***Embellisia*** E. G. Simmons  
(1971, *Mycologia*, 63: 380)

Conidiophores macronematous, mononematous, simple or rarely branched, erect, straight or flexuous, clear to dark brown, usually smooth. Conidiogenous cells polytretic, integrate, terminal, becoming intercalary, sympodial, cicatrized, scars frequently crater-like, geniculate at successive sites of conidium production. Conidia solitary, very variable in shape, with transverse, oblique and occasional longitudinal septa, septa thick and dark in contrast to the flexible exospore wall, brown, smooth or inconspicuously verruculose. Chlamydospore present.

Type species: *Embellisia allii* (Campan.) E. G. Simmons, 1971.  
Ellis 1976; Carmichael & al. 1980.

***Embellisia chlamydospora*** (Hoes, G. W. Bruehl & C. G. Shaw) E. G. Simmons, 1971, *Mycologia*, 63: 384.

Conidiophores macronematous, mononematous, erect, straight or flexuous, brown to light brown, up to  $150 \times 3-5 \mu\text{m}$ . Conidiogenous cells polytretic, integrate, sympodial, cicatrized. Conidia solitary, subcylindrical to ellipsoidal, brown, 3-5-septate, occasionally with 1-2 longitudinal or oblique septa, septa thick and dark in contrast to the flexible exospore wall, generally smooth,  $20-30 \times 7-9 \mu\text{m}$ . Chlamydospore abundant, very variable in form and dimensions, dark brown (Figs. 79, 80).

Synonym: *Pseudostemphylium chlamydosporum* Hoes, G. W. Bruehl & C. G. Shaw, 1965.  
On dead leaves of *Chamaerops humilis*.  
Matsushima 1975; Ellis 1976.

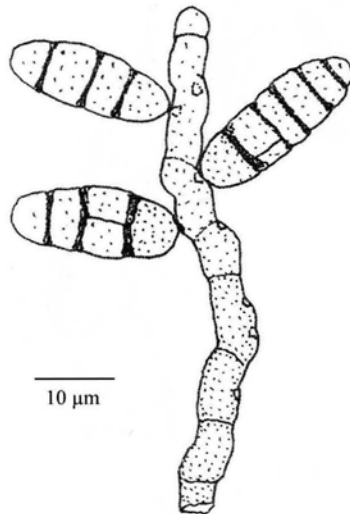


Fig. 79 - *Embellisia chlamydospora*. Conidiophores erect, gently flexuous. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia ellipsoidal, transversely and longitudinally septate, with dark septa, brown, smooth.

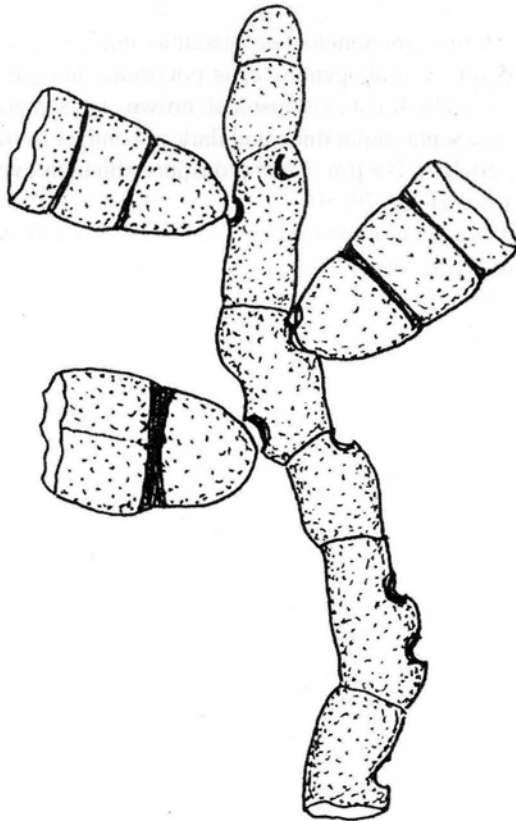


Fig. 80 - *Embellisia chlamydospora*. Detail of cicatrized conidiogenous cells.

***Alternaria* Nees**  
(1817, Syst. Pilze Schw.: 72)

Conidiophores macronematous, mononematous, simple or irregularly branched, solitary or caespitose, brown or clear brown. Conidiogenous cells polytretic, integrated, terminal, becoming intercalary, sympodial, cicatrized. Conidia catenate or solitary, typically ovoid or obclavate, often rostrate, with transverse, oblique or longitudinal septa, pale to clear olivaceous brown, smooth or verrucose.

Type species: *Alternaria tenuis* Nees, 1817.

Ellis 1971; Carmichael & al. 1980; Domsch & al. 1993; Mercado Sierra & al. 1997.

***Alternaria alternata* (Fr.) Keissl., 1912, Beihefte Bot. Centralbl., Abt., 1 29: 434.**

Conidiophores macronematous, mononematous, solitary or in small group, simple or branched, straight or flexuous, sometimes geniculate, pale to clear olivaceous or golden brown, smooth, up to  $50 \times 3-6 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal, becoming intercalary, geniculate, sympodial. Conidia in long often branched chains, obclavate, obpyriform, ovoid or ellipsoidal, with up to 8 transverse and several longitudinal or oblique septa, pale to golden brown, smooth or verrucose,  $18-65 \times 8-18 \mu\text{m}$ , with a beak often one third the length of the conidium (Fig. 81).

Basionym: *Torula alternata* Fr., 1832.

Synonyms: *Alternaria tenuis* Nees, 1817; *Alternaria rugosa* McAlpine, 1896; *Alternaria fasciculata* (Cooke & Ellis) L. R. Jones & Grout, 1897.

On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus incanus*, *C. monspeliensis*, *Euphorbia dendroides*, *Juniperus phoenicea*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Rosmarinus officinalis*.

Ellis 1971; Ellis & Ellis 1997;

Mercado Sierra & al. 1997.

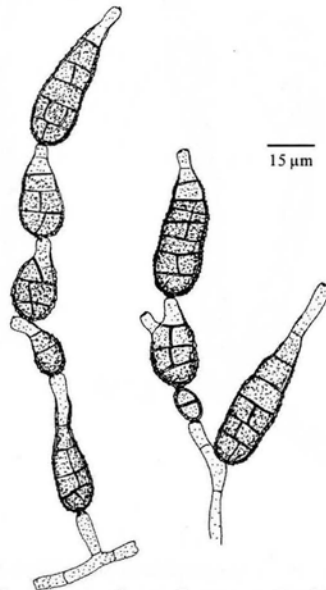


Fig. 81 - *Alternaria alternata*. Conidiophores sometimes flexuous. Conidiogenous cells polytretic, sympodial, geniculate. Conidia in chains, ellipsoidal, often with a beak, muriform, pale golden brown.

*Alternaria tenuissima* (Kunze) Wiltshire, 1933, Trans. Br. mycol. Soc., 18: 157.

Conidiophores macronematous, mononematous, solitary or caespitose, simple or branched, erect or flexuous, pale or clear brown, smooth, up to  $115 \times 3.5-6 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal, becoming intercalary, sympodial. Conidia solitary or in short chains, straight or curved, obclavate or ellipsoidal, tapering gradually to a beak up to half the length of the conidium, pale to clear golden brown, generally with 3-8 transverse and several longitudinal or oblique septa, smooth, sometimes minutely verruculose,  $22-95 \times 8-19 \mu\text{m}$  (Fig. 82).

Basionym: *Helminthosporium tenuissimum* Kunze, 1818.

On dead leaves of *Arbutus unedo*.

Ellis 1971; Matsushima 1975; Ellis & Ellis 1997; Mercado Sierra & al. 1997.

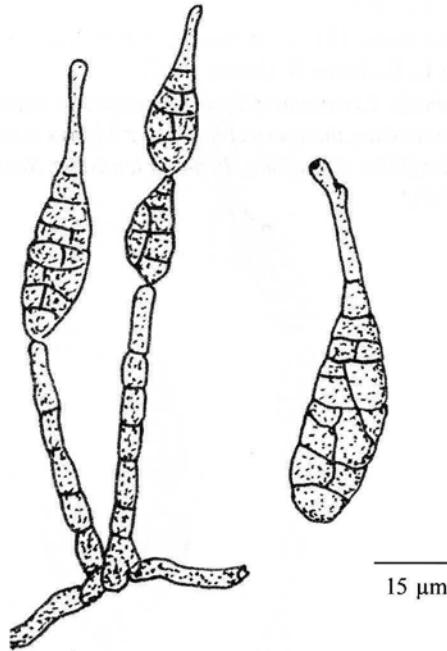


Fig. 82 - *Alternaria tenuissima*. Conidiophores sometimes branched. Conidiogenous cells polytretic, sympodial. Conidia solitary or in short chains, clavate, with a long beak, muriform, pale to clear golden brown.

***Ulocladium* Preuss**  
(1851, *Linnaea*, 24: 111)

Conidiophores macronematous, mononematous, unbranched or branched, straight or flexuous, often geniculate, clear to mid brown, smooth or verruculose. Conidiogenous cells polytretic, integrated, terminal becoming intercalary, sympodial, cicatrized, cylindrical. Conidia solitary or in short chains, acropleurogenous, simple, mostly broadly ellipsoidal or obovoid, sometimes clavate, pyriform or subspherical, frequently with a minute projecting hilum, with transverse and frequently longitudinal or oblique septa; septation sometimes cruciate, pale to brown or black, smooth to verrucose. Chlamyospore sometimes present. Type species: *Ulocladium botrytis* Preuss, 1851.

Ellis 1971; Carmichael & al. 1980; Ellis & Ellis 1997; Mercado Sierra & al. 1997.

***Ulocladium tuberculatum* E. G. Simmons, 1967, *Mycologia*, 59: 83.**

Conidiophores macronematous, mononematous, unbranched, straight or flexuous, rarely geniculate, pale golden brown, mostly smooth, up to  $200 \times 4-5 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal becoming intercalary, sympodial, cicatrized, cylindrical. Conidia solitary, acropleurogenous, simple, broadly ellipsoidal or subspherical, muriform often cruciately septate, golden brown, tuberculate,  $12-20 \times 11-17 \mu\text{m}$  (Fig. 83).

On dead leaves of *Phillyrea angustifolia*.

Ellis 1976.



Fig. 83 - *Ulocladium tuberculatum*. Conidiophores unbranched, frequently flexuous. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia solitary, subspherical, often cruciately septate, dark brown, tuberculate.

*Ulocladium alternariae* (Cooke) E. G. Simmons, 1967, Mycologia, 59 (1): 82.

Conidiophores macronematous, mononematous unbranched, pale golden brown, smooth or inconspicuously roughened, up to  $100 \times 4-7 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal becoming intercalary, sympodial, cicatrized, cylindrical. Conidia ellipsoidal, with 1-5 transverse and 1 or more longitudinal or oblique septa, golden brown, smooth or finely roughened,  $18-35 \times 15-20 \mu\text{m}$  (Fig. 84).

Basionym: *Sporidesmium alternariae* Cooke, 1871.

Synonym: *Stemphylium alternariae* (Cooke) Sacc., 1886.

On dead leaves of *Chamaerops humilis*, *Cistus salvifolius*.  
Ellis 1976.

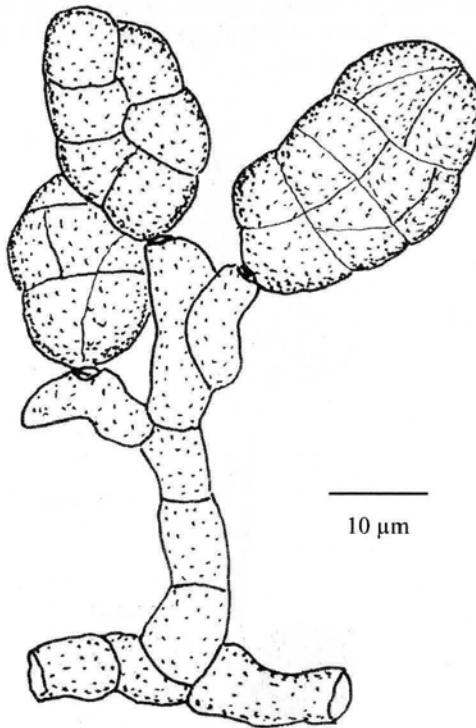


Fig. 84 - *Ulocladium alternariae*. Conidiophores erect, unbranched. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia ellipsoidal, muriform, golden brown, finely roughened.



*Ulocladium consortiale* (Thüm.) E. G. Simmons, 1967, *Mycologia*, 59: 84.

Conidiophores macronematous, mononematous, pale golden brown, smooth, up to  $60 \times 4-5 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal becoming intercalary, sympodial, cylindrical, cicatrized. Conidia ellipsoidal, with 1-5 transverse and several longitudinal and oblique septa, golden brown, generally smooth,  $16-34 \times 10-15 \mu\text{m}$  (Fig. 85).

Basionym: *Macrosporium consortiale* Thüm., 1876.

Synonyms: *Alternaria consortialis* (Thüm.) J. W. Groves & S. Hughes, 1953; *Pseudostemphylium consortiale* (Thüm.) Subram., 1961.

On dead leaves of *Chamaerops humilis*, *Phillyrea angustifolia*.

Matsushima 1975; Ellis 1976; Ellis & Ellis 1997.

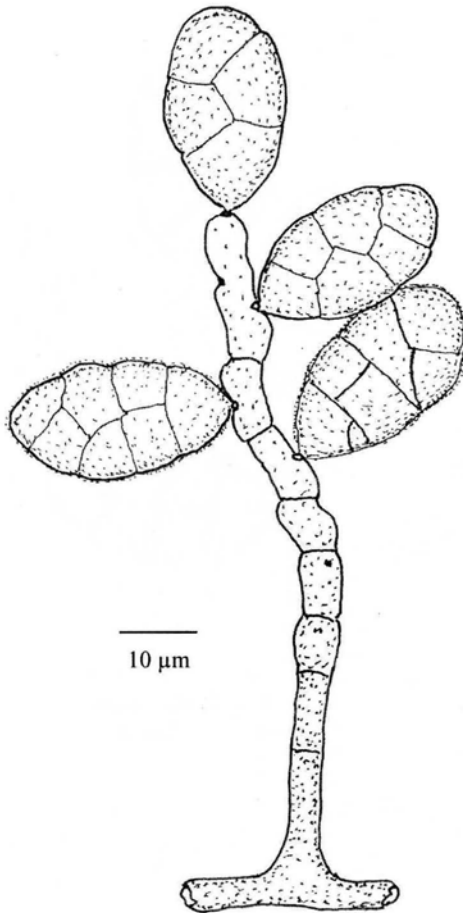


Fig. 85 - *Ulocladium consortiale*. Conidiophores erect flexuous. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia ellipsoidal, muriform, golden brown, generally smooth.

*Ulocladium botrytis* Preuss, 1851, *Linnaea*, 24: 111.

Conidiophores macronematous, mononematous, frequently dichotomously branched, geniculate, clear to mid golden brown, smooth, up to  $100 \times 3-5 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal becoming intercalary, cicatrized, sympodial, cylindrical. Conidia solitary, ellipsoidal or obovoid, frequently with a minute basal hilum, with 1-3 transverse and 1 or more longitudinal septa, rarely cruciately septate, golden brown, verruculose to verrucose,  $13-30 \times 6-19 \mu\text{m}$  (Fig. 86).

Homotypic synonym: *Stemphylium botryosum* var. *ulocladium* (Preuss) Sacc., 1886.

On dead leaves of *Cistus monspeliensis*.

Ellis 1971; Ellis & Ellis 1997.

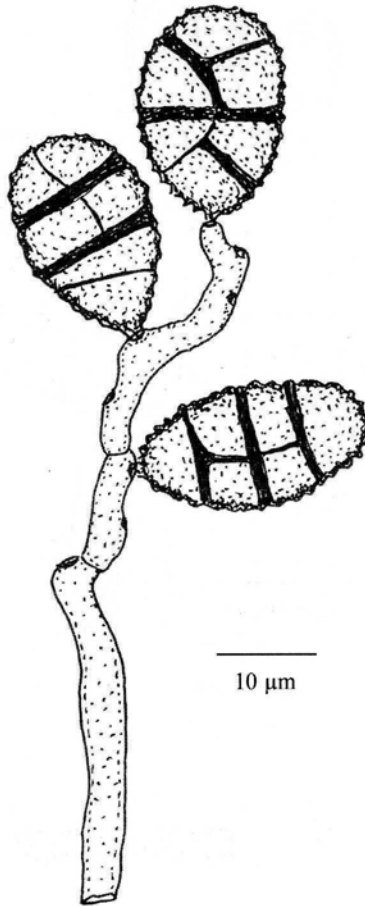


Fig. 86 - *Ulocladium botrytis*. Conidiophores frequently dichotomously branched, geniculate. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia ellipsoidal, frequently with basal hilum, muriform, golden brown, verruculose.

*Ulocladium atrum* Preuss, 1852, *Linnaea*, 25: 75.

Conidiophores macronematous, mononematous, solitary, sometimes branched, clear to golden brown, smooth rarely verrucose, up to  $120 \times 3-8 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal becoming intercalary, sympodial, cylindrical, cicatrized. Conidia ellipsoidal, obovoid, spherical or subspheroidal, irregular, with 1-3 transverse and 1 or more longitudinal septa, frequently subspherical, cruciately septate, golden brown or dark reddish brown, verrucose,  $15-32 \times 11-18 \mu\text{m}$  (Fig. 87).

Homotypic synonym: *Stemphylium atrum* (Preuss) Sacc., 1886.

On dead leaves of *Cistus salvifolius*, *Phillyrea angustifolia*, *Pistacia lentiscus*.  
Matsushima 1975; Ellis 1976; Ellis & Ellis 1997; Mercado Sierra & al. 1997.

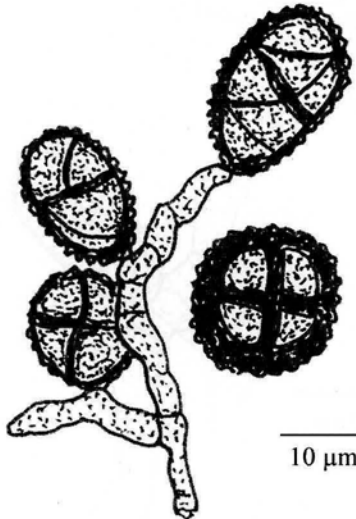


Fig. 87 - *Ulocladium atrum*. Conidiophores sometimes branched. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia spherical or subspheroidal, muriform or cruciately septate, brown, verrucose.

*Ulocladium oudemansii* E. G. Simmons, 1967, *Mycologia*, 59: 86.

Conidiophores macronematous, mononematous, branched, straight or flexuous, golden brown, smooth, up to  $250 \times 5-8 \mu\text{m}$ . Conidiogenous cells polytretic, integrated, terminal becoming intercalary, sympodial, cylindrical, cicatrized. Conidia obovate, clavate or ellipsoidal, with 3-5 transverse and several longitudinal septa, golden brown or dark reddish brown, verrucose, with basal cell usually smooth,  $18-34 \times 9-17 \mu\text{m}$  (Fig. 88).

On dead leaves of *Chamaerops humilis*, *Phillyrea angustifolia*.

Ellis 1976.

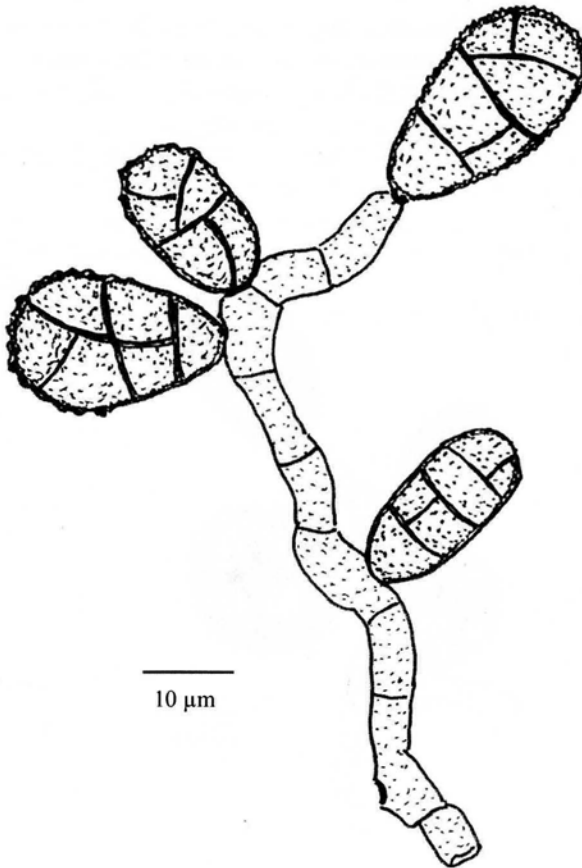


Fig. 88 - *Ulocladium oudemansii*. Conidiophores erect, flexuous. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia ellipsoidal, with basal cell smooth, muriform, brown.

***Phaeoramularia* Munt.-Cvetk.**  
(1960, Lilloa, 30: 209)

Conidiophores macronematous or micronematous, mononematous, caespitose, unbranched or loosely branched, straight or flexuous, clear to olivaceous brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, becoming intercalary or occasionally discrete, sympodial, cicatrized, cylindrical. Ramo-conidia sometimes present. Conidia in branched or unbranched chains, acropleurogenous, simple, cylindrical, ellipsoidal or broadly fusiform, with 0-1 or several transverse septa, hyaline to brown, smooth.

Type species: *Phaeoramularia gomphrenicola* (Speg.) Munt.-Cvetk., 1960. Ellis 1971.

***Phaeoramularia hachijoensis* Matsush., 1975, Icones Microfungorum a Matsushima Lectorum: 111.**

Conidiophores micronematous, branched, light brown, smooth. Conidiogenous cells polyblastic, integrated, terminal or intercalary, sympodial, cicatrized. Ramo-conidia 1-3-septate, up to 30  $\mu\text{m}$ . Conidia in branched chains, oblong ellipsoidal, 0-3-septate, mostly 1-septate, clear brown, smooth, 10-21  $\times$  2-4  $\mu\text{m}$  (Fig. 89).

Homotypic synonyms: *Cladophialophora hachijoensis* (Matsush.) U. Braun & Feiler., 1995; *Pseudocladosporium hachijoense* (Matsush.) U. Braun, 1998.

On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus incanus*, *C. monspeliensis*, *C. salvifolius*, *Ilex aquifolium*, *Juniperus oxycedrus* ssp. *macrocarpa*, *J. phoenicea*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Rosmarinus officinalis*, *Smilax aspera*, *Taxus baccata*, *Thymelaea tartonraira*.

Matsushima 1975.

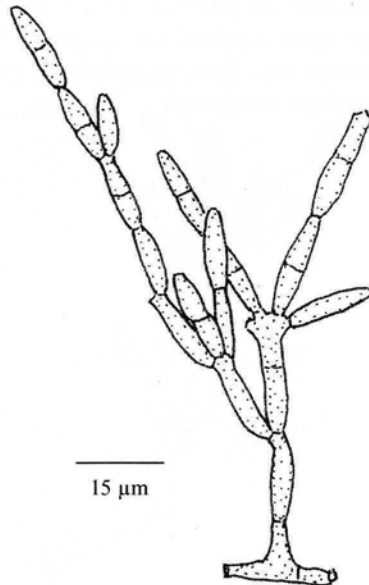


Fig. 89 - *Phaeoramularia hachijoensis*. Conidiophores micronematous, irregularly branched. Conidiogenous cells polyblastic, sympodial, cicatrized. Ramo-conidia present. Conidia in branched or unbranched chains, ellipsoidal, clear brown, smooth.

***Cladosporium* Link**(1816, *Magazin Ges. Naturf. Freunde*, Berlin, 7: 37)

Stroma sometimes present. Conidiophores macronematous, semi-macronematous, rarely micronematous, solitary or caespitose, erect, straight or flexuous, unbranched or with branches near the apex, brown, smooth or verrucose. Ramo-conidia often present. Conidiogenous cells polyblastic, integrated, terminal, intercalary, rarely discrete, sympodial, cylindrical, cicatrized, with scars frequently prominent. Conidia generally in acropetal chains, frequently branched, acropleurogenous, ellipsoidal, fusiform, subspherical, frequently with protuberant scars at the ends, 0-3 or more septa, pale to dark brown, smooth to verruculose or echinulate.

Type species: *Cladosporium herbarum* (Pers.) Link, 1816.

Ellis 1971; Carmichael & al. 1980; Domsch & al. 1993; Ellis & Ellis 1997.

***Cladosporium cladosporioides*** (Fresen.) G. A. de Vries, 1952, *Contrib. Knowledge of the Genus Cladosporium* Link: 57.

Conidiophores macronematous or micronematous, solitary or caespitose, pale to brown, smooth or rarely verruculose, up to  $350 \times 2-6 \mu\text{m}$ . Ramo-conidia 0-1-septate, smooth, occasionally minutely verruculose, up to  $30 \times 2-5 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal, intercalary, sympodial, with scars. Conidia in long branched chains, ellipsoidal or limoniform, aseptate, clear brown, commonly smooth,  $3-11 \times 2-5 \mu\text{m}$  (Figs. 90, 91).

Basionym: *Penicillium cladosporioides* Fresen., 1850.

Synonym: *Monilia humicola* Oudem., 1902.

On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus incanus*, *C. monspeliensis*, *C. salvifolius*, *Euphorbia dendroides*, *Ilex aquifolium*, *Juniperus phoenicea*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Quercus pubescens*, *Rosmarinus officinalis*, *Smilax aspera*, *Taxus baccata*, *Thymelaea tartonraira*.

Ellis 1971; Domsch & al. 1993;

Ellis & Ellis 1997.

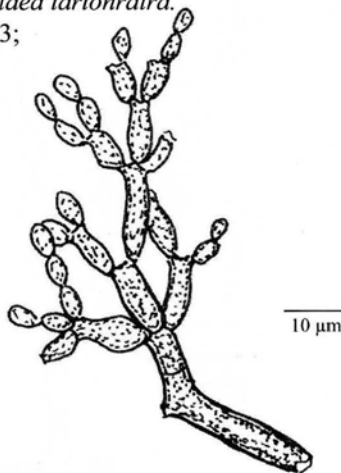


Fig. 90 - *Cladosporium cladosporioides*. Conidiophores solitary or caespitose. Ramo-conidia present. Conidiogenous cells polyblastic, sympodial, cicatrized. Conidia in branched chains, ellipsoidal, 0-septate, clear brown.

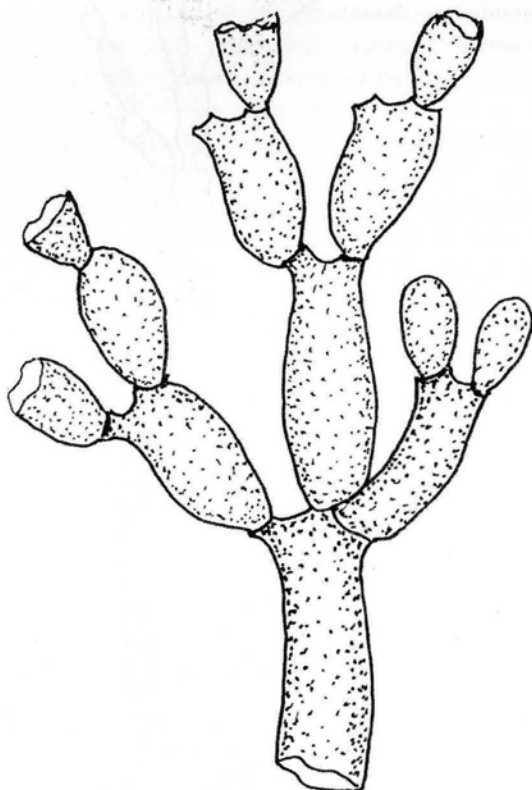


Fig. 91 - *Cladosporium cladosporioides*. Detail of ramo-conidia.

*Cladosporium uniseptosporum* Matsush., 1975, Icones Microfungorum a Matsushima Lectorum: 36.

Conidiophores macronematous, solitary, erect, straight, unbranched, clear to brown, (20-) 40-90 × 2.5-3.5 μm. Ramo-conidia present. Conidiogenous cells polyblastic, integrated, terminal or intercalary, sympodial, cicatrized. Conidia in short chains, cylindrical, ellipsoidal, 1-septate, clear to brown, smooth, 5.5-10 × 2.5-3 μm (Fig. 92).

On dead leaves of *Myrtus communis*.

Matsushima 1975.

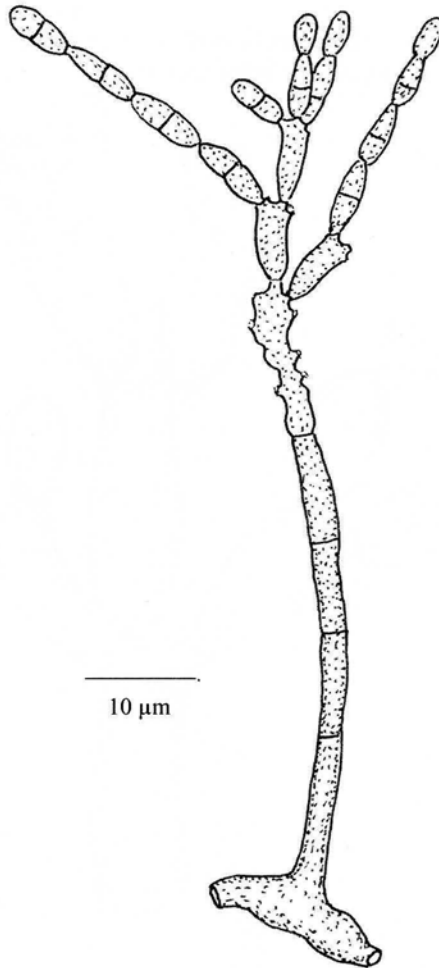


Fig. 92 - *Cladosporium uniseptosporum*. Conidiophores solitary, erect. Conidiogenous cells polyblastic, sympodial, cicatrized. Conidia in chains, ellipsoidal, 1-septate, clear brown, smooth.



*Cladosporium acaciicola* M. B. Ellis, 1976, More Dematiaceous Hyphomycetes: 342.

Conidiophores macronematous, solitary, straight or flexuous, clear to brown, smooth, up to  $60 \times 3-6 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal or intercalary, sympodial, cicatrized. Ramo-conidia present. Conidia in long branched chains, ellipsoidal or cylindrical, 0-3-septate, commonly 2-septate, often constricted at usually dark septa, clear brown, smooth or minutely roughned,  $5-25 \times 3-8 \mu\text{m}$ . Chlamydo-spore often present (Fig. 93).

On dead leaves of *Myrtus communis*, *Quercus ilex*.

Ellis 1976.

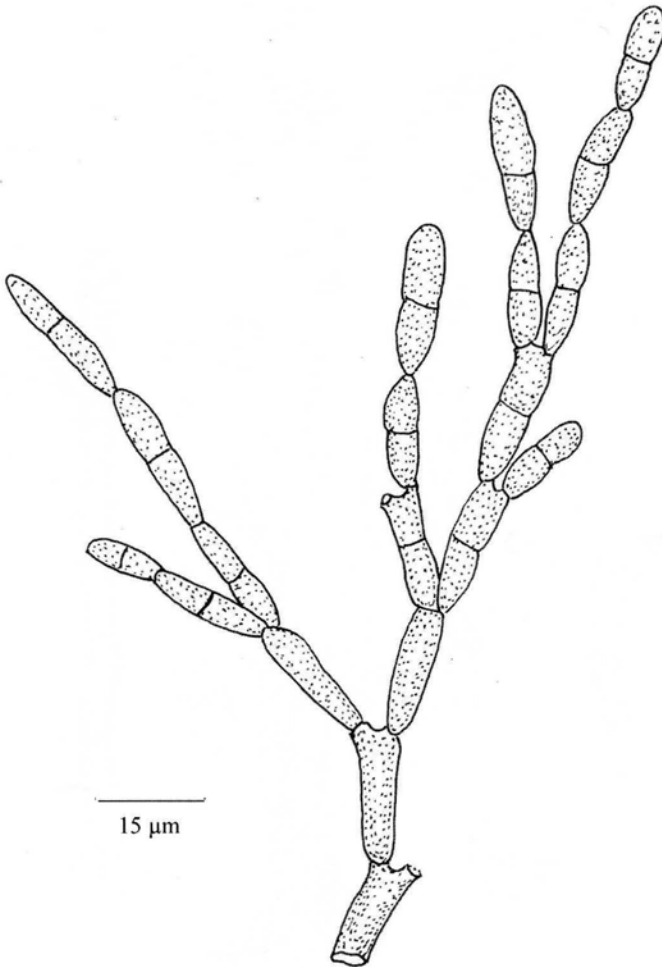


Fig. 93 - *Cladosporium acaciicola*. Conidiophores solitary. Conidiogenous cells polyblastic, sympodial, cicatrized. Conidia in branched chains, ellipsoidal, 0-3-septate, clear brown.

*Cladosporium apicale* Berk. & Broome, 1873, J. Linn. Soc., 14: 99.

Stroma dark. Conidiophores macronematous, commonly caespitose, straight or flexuous, subulate, often branched at the apex, dark reddish brown, smooth, up to  $250 \times 8-16 \mu\text{m}$  at the base. Conidiogenous cells polyblastic, integrated, terminal or intercalary, sympodial, cicatrized, with several small scars. Ramo-conidia present. Conidia subspherical, ellipsoidal, fusiform, 0-3-septate, clear to brown, smooth,  $3-20 \times 2.5-6 \mu\text{m}$  (Fig. 94).

On dead leaves of *Arbutus unedo*.

Ellis 1976.

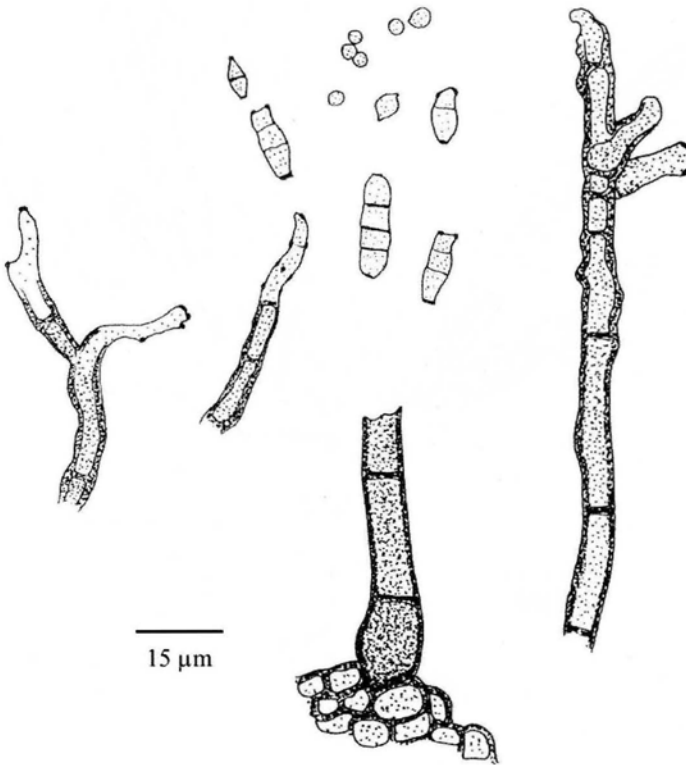


Fig. 94 - *Cladosporium apicale*. Conidiophores caespitose. Conidiogenous cells polyblastic, sympodial, cicatrized. Conidia ellipsoidal, 0-3-septate, clear to brown, smooth.

*Cladosporium herbarum* (Pers. : Fr.) Link, 1816, Nat. Arr. Br. Pl., 1: 556.

Stroma often present. Conidiophores macronematous, caespitose or solitary, straight or flexuous, nodose, geniculate, clear to brown, smooth, up to  $250 \times 3-6 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal or intercalary, sympodial, cicatrized. Ramo-conidia variable in shape and dimensions. Conidia in branched chains, ellipsoidal, rounded at the ends, frequently with small prominent scars, mostly 0-1-septate, pale to brown, verrucose,  $5-23 \times 3-8 \mu\text{m}$  (Fig. 95).

Basionym: *Dematium herbarum* Pers., 1794.

Synonym: *Byssus herbarum* (Pers.) DC., 1815.

On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus incanus*, *C. monspeliensis*, *Euphorbia dendroides*, *Juniperus phoenicea*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Rosmarinus officinalis*.

Ellis 1971; Domsch & al. 1993; Ellis & Ellis 1997.

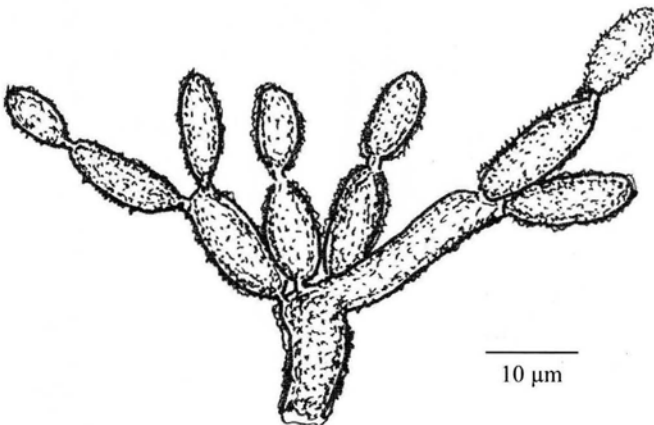


Fig. 95 - *Cladosporium herbarum*. Conidiophores caespitose, geniculate. Conidiogenous cells polyblastic, sympodial, cicatrized. Ramo-conidia present. Conidia in branched chains, ellipsoidal, 0-1-septate, pale to brown, verrucose.

*Cladosporium macrocarpum* Preuss, 1848, Sturm Deutschl. Flora., 6: 27.

Stroma sometimes present. Conidiophores usually macronematous, caespitose, straight or flexuous, geniculate or nodose, pale to brown, smooth or in part verruculose, up to  $300 \times 4-8 \mu\text{m}$ . Conidiogenous cells polyblastic, integrated, terminal or intercalary, sympodial, cicatrized. Conidia in short chains, oblong or ellipsoidal with rounded ends, 0-3-septate, clear to brown, verrucose,  $9-28 \times 5-13 \mu\text{m}$  (Fig. 96).

Synonym: *Cladosporium herbarum* var. *macrocarpum* (Preuss) M. H. M. Ho & Dugan, 1999.

On dead leaves of *Phillyrea angustifolia*.

Ellis 1971; Domsch & al. 1993; Ellis & Ellis 1997.

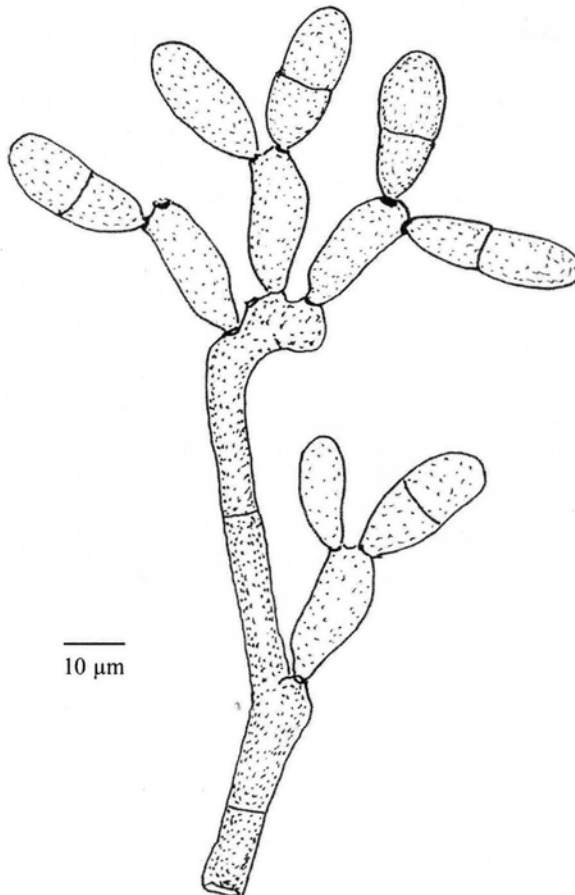


Fig. 96 - *Cladosporium macrocarpum*. Conidiophores caespitose, geniculate or nodose. Conidiogenous cells polyblastic, sympodial, cicatrized. Conidia in short chains, ellipsoidal, 0-3-septate, clear to brown, verrucose.

*Curvularia* Boedijn

(1933, Bulletin du Jardin Botanique de Buitenzorg, 13: 123)

Conidiophores macronematous, mononematous, erect, straight or flexuous, often geniculate, brown, frequently smooth. Conidiogenous cells polytretic, integrated, terminal, sometimes becoming intercalary, sympodial, cicatrized. Conidia solitary, acropleurogenous, simple, often curved, clavate, ellipsoidal, obovoid, broadly fusiform, pyriform, with 3 or more transverse septa, clear to dark brown, frequently with clear end cells, sometimes with dark band at the septa, smooth or verrucose, hilum sometimes present.

Type species. *Curvularia lunata* (Wakker) Boedijn, 1933.

Ellis 1971; Carmichael & al. 1980; Domsch & al. 1993; Mercado Sierra & al. 1997.

*Curvularia pallescens* Boedijn, 1933, Bulletin du Jardin Botanique de Buitenzorg, 13: 127.

Conidiophores macronematous, mononematous, solitary or in group, rarely branched, erect, brown to dark brown. Conidiogenous cells polytretic, integrated, terminal, sympodial, cicatrized. Conidia acropleurogenous, usually straight or slightly curved, ellipsoidal to fusiform, clavate, predominantly 3-septate, middle septum not median, pale or clear brown, with clear end cells, hilum scarcely protuberant, smooth, 15-32 × 5-12.5 μm (Fig. 97).

Anamorph of *Pseudocochliobolus pallescens* Tsuda & Ueyama, 1983.

On dead leaves of *Phillyrea angustifolia*.

Ellis 1971; Tsuda & Ueyama 1983.

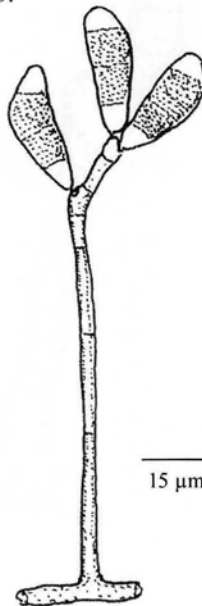


Fig. 97 - *Curvularia pallescens*. Conidiophores erect. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia curved or slightly curved, mostly 3-septate, clear brown, with end cells clear, smooth.

*Curvularia clavata* B. L. Jain, 1962, Trans. Br. mycol. Soc., 45: 542.

Conidiophores macronematous, mononematous, erect, brown. Conidiogenous cells polytretic, integrated, terminal, sympodial, cicatrized. Conidia straight, symmetrical, clavate, predominantly 3-septate, middle septum not median, mid to dark brown, usually with the end cells clear, hilum scarcely protuberant, smooth,  $17-29 \times 7-13 \mu\text{m}$  (Fig. 98).

On dead leaves of *Chamaerops humilis*.

Ellis 1971.

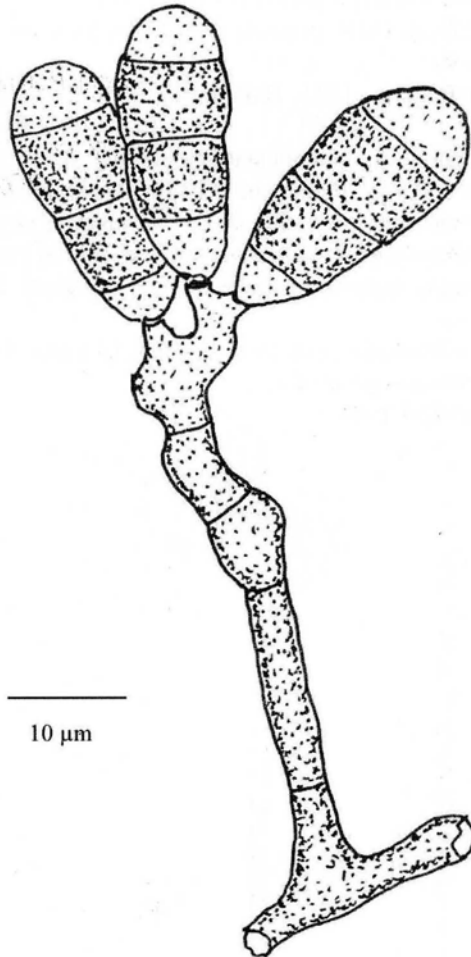


Fig. 98 - *Curvularia clavata*. Conidiophores erect. Conidiogenous cells polytretic, sympodial, cicatrized. Conidia clavate, not curved, mostly 3-septate, brown with end cells clear, smooth.

***Verticicladium* Preuss**  
(1851, *Linnaea*, 24: 127)

Conidiophores macronematous, mononematous, solitary, sometimes caespitose, repeatedly branched at the apex, erect, branches verticillate usually at right angles, mid to dark brown, smooth. Conidiogenous cells polyblastic, sometimes integrated, terminal, frequently discrete on branches, sympodial, subulate. Conidia solitary, acropleurogenous, simple, ellipsoidal, aseptate, hyaline or clear brown, finely verruculose.

Type species: *Verticicladium trifidum* Preuss, 1851.

Hughes 1951 a; Ellis 1971; Carmichael & al. 1980.

***Verticicladium trifidum* Preuss, 1851, *Linnaea*, 24: 127.**

Conidiophores macronematous, mononematous, branched at the apex, branches verticillate, clear to dark brown, smooth, up to  $800 \times 8-12 \mu\text{m}$ . Conidiogenous cells on branches, polyblastic, terminal, discrete, sympodial, subulate, up to  $60 \times 3-5 \mu\text{m}$ . Conidia solitary, acropleurogenous, ellipsoidal, aseptate, hyaline to pale brown, finely verruculose,  $4-6 \times 2.5-3.5 \mu\text{m}$  (Fig. 99).

Anamorph of *Desmazierella acicola* Lib., 1829.

On dead leaves of *Euphorbia dendroides*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *Pistacia lentiscus*.

Ellis 1971.

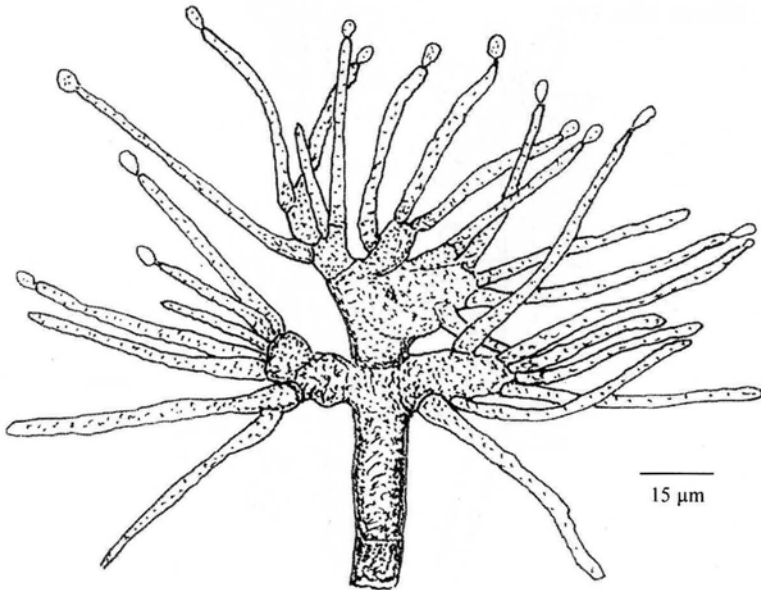


Fig. 99 - *Verticicladium trifidum*. Conidiophores branched, branches verticillate. Conidiogenous cells terminal on branches, polyblastic, sympodial. Conidia solitary, ellipsoidal, 0-septate, hyaline to pale brown, finely verruculose.

***Rhinocladiella* Nannf.**

(1934, Svensk Skogsvårdsförening Tidskr., 32: 461)

Conidiophores macronematous, or semi-macronematous, mononematous, rarely branched, straight or flexuous, clear to dark brown, smooth, verruculose or echinulate. Conidiogenous cells polyblastic, integrated, terminal, sometimes intercalary, sympodial, cicatrized, cylindrical. Ramo-conidia often present. Conidia solitary, acropleurogenous, simple, ellipsoidal, cylindrical, clavate, fusiform, aseptate, rarely 1 or more septate, hyaline to clear brown, smooth or verruculose.

Type species: *Rhinocladiella atrovirens* Nannf., 1934.

Ellis 1971; Hoog 1977; Carmichael & al. 1980.

***Rhinocladiella ellisii* D. Hawksw., 1977, Taxon, 26: 208.**

Conidiophores macronematous, mononematous, echinulate, clear brown. Conidiogenous cells polyblastic, integrated, terminal and intercalary, sympodial, smooth, cicatrized, with several small scars. Ramo-conidia very variable in dimensions, cylindrical, 0-3-septate. Conidia solitary, acropleurogenous, ellipsoidal, clavate, aseptate or rarely septate, colourless to clear brown, smooth or minutely verruculose, usually  $4-8 \times 1.5-2.5 \mu\text{m}$ , very variable in length (Fig. 100).

Synonym: *Rhinocladiella cellaris* (Pers.) M. B. Ellis, 1971.

On dead leaves of *Chamaerops humilis*, *Cistus monspeliensis*, *Juniperus oxycedrus* spp. *macrocarpa*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Quercus ilex*, *Smilax aspera*.

Ellis 1971; Ellis & Ellis 1998.

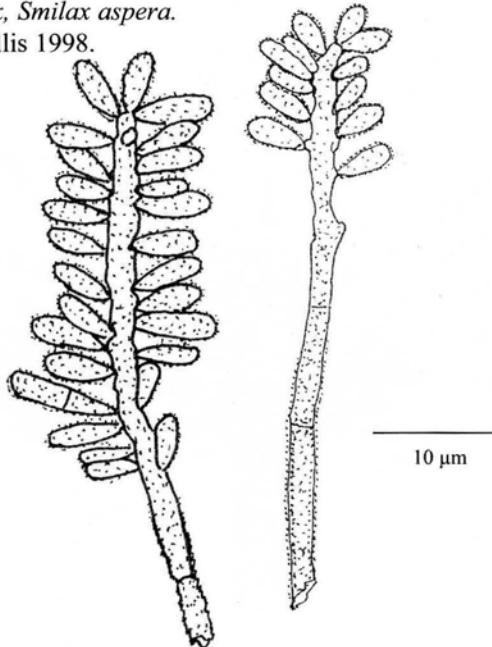


Fig. 100 - *Rhinocladiella ellisii*. Conidiophores erect. Conidiogenous cells polyblastic, sympodial, with small scars. Conidia solitary, ellipsoidal, colourless to clear brown, smooth or minutely verruculose.



*Rhinocladiella atrovirens* Nannf., 1934, Svensk Skogsvårdsförening Tidskr., 32: 461.

Conidiophores macronematous, mononematous, simple or branched, flexuous, clear to brown, smooth. Conidiogenous cells polyblastic, integrated, terminal, intercalary, sympodial, cylindrical, cicatrized, up to  $60 \times 2-3 \mu\text{m}$ . Conidia solitary, acropleurogenous, ellipsoidal or cylindrical, aseptate, colourless, smooth,  $4-6 \times 1-2 \mu\text{m}$  (Fig. 101).

On dead leaves of *Pistacia lentiscus*.

Ellis 1971; Hoog 1977.

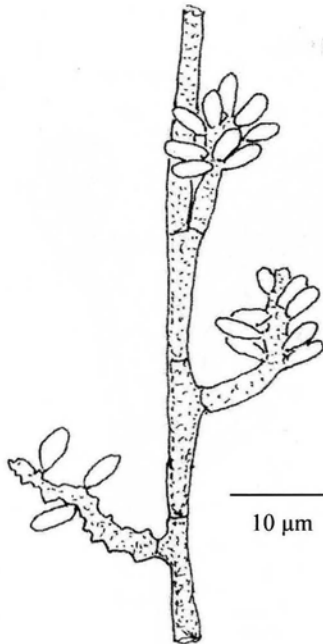


Fig. 101 - *Rhinocladiella atrovirens*. Conidiophores erect, flexuous, simple or branched. Conidiogenous cells polyblastic, sympodial, cicatrized. Conidia solitary, ellipsoidal, 0-septate, clear brown, smooth.

***Pseudodictyosporium* Matsush.**

(1971, Bulletin of the National Science Museum, Tokyo, New Series, 14: 473)

Conidiophores macronematous, mononematous, solitary, erect, branched, clear brown. Conidiogenous cells monoblastic, integrated, terminal, determinate, cicatrized, subhyaline. Conidia solitaria, acrogenous, cheiroid, composed by 2 or 3 parallel branches, repeatedly septate, brown, smooth.

Type species: *Pseudodictyosporium wauense* Matsush., 1971.

Matsushima 1971.

***Pseudodictyosporium wauense* Matsush., 1971, Bulletin of the National Science Museum, Tokyo, New Series, 14: 473.**

Conidiophores macronematous, mononematous, solitary, erect, branched, clear brown, verrucose near the base, up to  $100 \times 2.5-3.5 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal on branches, determinate, cicatrised, clear brown. Conidia solitary, cheiroid composed by 2 or 3 parallel vertical branches, repeatedly septate, constricted at the septa, flattened in one plane, with apiculate base, clear brown, smooth,  $19-33 \times 12-19 \mu\text{m}$  (Fig. 102).

On dead leaves of *Juniperus phoenicia*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Quercus ilex*.

Matsushima 1971, 1975, 1987, 1996.

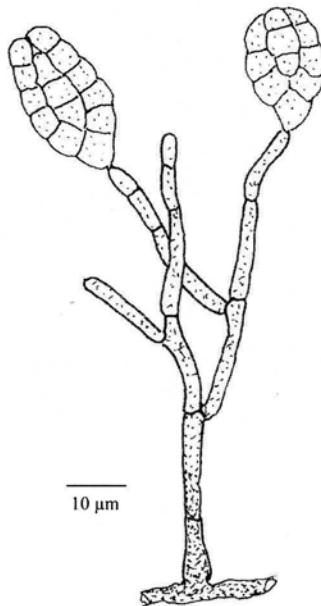


Fig. 102 - *Pseudodictyosporium wauense*. Conidiophores erect, branched. Conidiogenous cells monoblastic, terminal on branches, determinate, cicatrized. Conidia with parallel branches, flattened, septate, clear brown, smooth.

***Triposporium* Corda**  
(1837, Icon. Fung., 1: 16)

Conidiophores macronematous, mononematous, solitary, straight or flexuous, unbranched, almost cylindrical, brown, smooth. Conidiogenous cells blastic, integrated, terminal, percurrent, cylindrical, doliiform or lageniform. Conidia solitary, acrogenous, branched, usually composed by 3 or 4 conical septate arms joined at the base of a small, clavate, doliiform or cylindrical stalk cell. Conidia dark brown at the centre, arms hyaline or subhyaline at the tips, smooth.

Type species: *Triposporium elegans* Corda, 1837.  
Ellis 1971.

***Triposporium elegans* Corda, 1837, Icon. Fung., 1: 16.**

Conidiophores macronematous, mononematous, solitary, erect, straight, unbranched, cylindrical, up to  $230 \times 5-8 \mu\text{m}$ . Conidiogenous cells blastic, integrated, terminal, percurrent, cylindrical. Conidia solitary, branched, with conical arms 3-9-septate, often slightly constricted at the septa, joined at the base to a small clavate, doliiform or cylindrical stalk cell, smooth, commonly  $20-40 (70) \times 9-12 \mu\text{m}$  at the base (Fig. 103).

On dead leaves of *Quercus ilex*.

Ellis 1971; Matsushima 1985; Ellis & Ellis 1997.

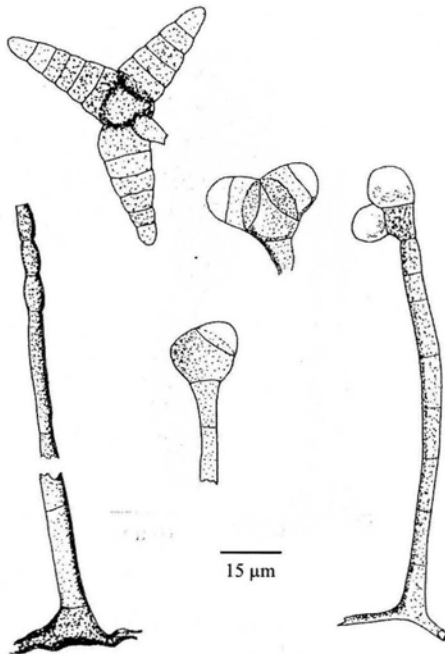


Fig. 103 - *Triposporium elegans*. Conidiophores erect. Conidiogenous cells blastic, terminal, percurrent. Conidia composed by septate arms, brown, smooth.

***Arachnophora* Hennebert**  
(1963, Can. J. Bot., 41: 1165)

Conidiophores macronematous, mononematous, unbranched, brown. Conidiogenous cells blastic, integrated, terminal, percurrent. Conidia solitary, terminal, complex, subhyaline, with a brown body often 1-septate, bearing spine-like processes on lateral protuberances. Type species: *Arachnophora fagicola* Hennebert, 1963. Ellis 1971; Carmichaell & al. 1980.

***Arachnophora fagicola* Hennebert, 1963, Can. J. Bot., 41: 1166.**

Conidiophores macronematous, mononematous, solitary or grouped, unbranched, erect, brown to dark brown, up to  $150 \times 4-6 \mu\text{m}$ . Conidiogenous cells blastic, integrated, terminal, percurrent. Conidia solitary, terminal, complex, with a central body usually 1-septate, smooth,  $16-20 \times 10-13 \mu\text{m}$ ; each central cells with several pale brown lateral protuberances  $4-7 \mu\text{m}$  in diameter, each bearing 1 or more inwardly curved, hyaline, spine-like processes  $10-25 \times 1-3 \mu\text{m}$  (Fig. 104).

On dead leaves of *Quercus ilex*.  
Ellis 1971; Ellis & Ellis 1997.

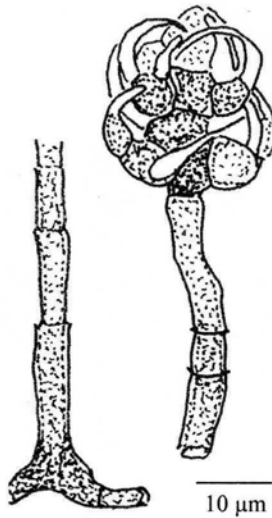


Fig. 104 - *Arachnophora fagicola*. Conidiophores erect. Conidiogenous cells blastic, terminal, percurrent. Conidia solitary, composed by central cells with lateral protuberances each with curved spine-like processes hyaline.

***Stemphylium* Wallr.**  
(1833, Fl. crypt. Germ., 2: 300)

Stromata sometimes present. Conidiophores macronematous, mononematous, solitary or caespitose, unbranched or occasionally branched, straight or flexuous, usually nodose, pale to olivaceous brown, smooth or in part verruculose. Conidiogenous cells blastic, integrated, terminal, percurrent, cicatrized, at first clavate or subspherical, later calyciform. Conidia solitary, acrogenous, oblong rounded at the ends, ellipsoidal, subspherical, obclavate, muriform, often constricted at one or more septa, cicatrized at the base, in some species with conical apex and one with lateral conical protrusions, pale to brown, smooth, verrucose, echinulate.

Type species: *Stemphylium botryosum* Wallr., 1833.  
Ellis 1971.

***Stemphylium sarciniforme*** (Cavara) Wiltshire, 1938, Trans. Br. mycol. Soc., 21: 228.

Conidiophores macronematous, mononematous, unbranched, straight or flexuous, usually nodose, pale to golden brown, up to  $50 \times 6-10 \mu\text{m}$ . Conidiogenous cells blastic, integrated, terminal, percurrent. Conidia subspherical or very broadly ellipsoidal, with usually 3 transversal and several longitudinal septa, sometimes constricted at the median transverse septum, golden brown, smooth,  $30-50 \times 22-33 \mu\text{m}$  (Fig. 105).

Basionym: *Macrosporium sarciniforme* Cavara, 1890.

Synonym: *Thyrospora sarciniforme* (Cavara) Tehon & E.Y. Daniels, 1925.

On dead leaves of *Chamaerops humilis*, *Ceratonia siliqua*, *Euphorbia dendroides*, *Pistacia lentiscus*.

Ellis 1971; Ellis & Ellis 1997.

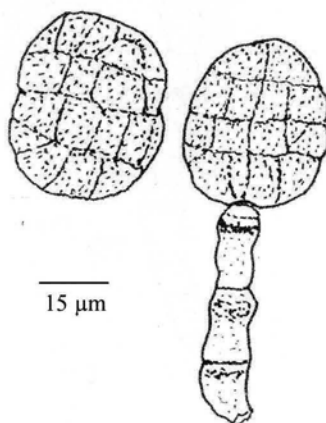


Fig. 105 - *Stemphylium sarciniforme*. Conidiophores erect or slightly flexuous, with vesicular swellings. Conidiogenous cells blastic, percurrent, cicatrized. Conidia subspherical or ellipsoidal, muriform, golden brown, smooth.

*Stemphylium vesicarium* (Wallr.) E. G. Simmons, 1969, Mycologia, 61: 9.

Conidiophores macronematous, mononematous, occasionally branched, often caespitose, nodose, pale to brown, with dark bands, smooth or minutely verruculose, up to  $70 \times 3-8 \mu\text{m}$ . Conidiogenous cells blastic, integrated, terminal, percurrent. Conidia oblong rounded at the ends, ellipsoidal, with up to 6 transverse and several longitudinal septa, often constricted at the 3 major transverse septa, pale to olivaceous brown, verrucose,  $20-50 \times 15-26 \mu\text{m}$  (Fig. 106).

Basionym: *Helminthosporium vesicarium* Wallr., 1833

Synonym: *Macrosporium vesicarium* (Wallr.) Sacc., 1886.

On dead leaves of *Pistacia lentiscus*, *Thymelaea tartonraira*.

Ellis 1971; Ellis & Ellis 1997.

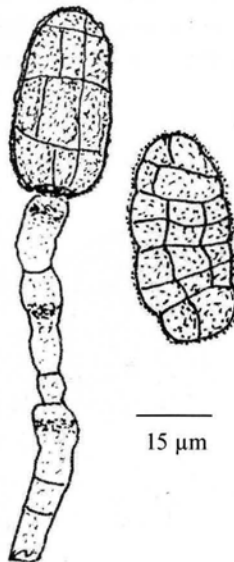


Fig. 106 - *Stemphylium vesicarium*. Conidiophores often caespitose, nodose. Conidiogenous cells blastic, percurrent. Conidia oblong, ellipsoidal, muriform, pale to olivaceous brown, verrucose.

*Stemphylium botryosum* Wallr., 1833, Fl. crypt. Germ., 2: 300.

Stroma present not superficial. Conidiophores macronematous, mononematous, often caespitose, nodose, pale to brown, up to  $80 \times 4-7 \mu\text{m}$ . Conidiogenous cells blastic, integrated, terminal, percurrent, with dark verrucose band. Conidia oblong, rounded at the ends, ellipsoidal, subspherical, commonly with 3 transverse and 1-3 longitudinal septa, constricted at the median transverse septum, pale to brown, minutely verruculose or echinulate,  $27-42 \times 24-30 \mu\text{m}$  (Fig. 107).

Anamorph of *Pleospora tarda* E. G. Simmons, 1986.

On dead leaves of *Arbutus unedo*, *Cistus monspeliensis*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Rosmarinus officinalis*.

Ellis 1971; Carmichael & al. 1980.

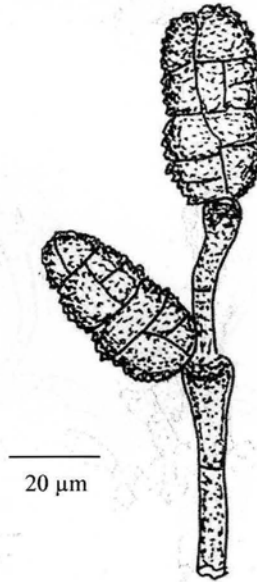


Fig. 107 - *Stemphylium botryosum*. Conidiophores often caespitose, nodose. Conidiogenous cells blastic, percurrent. Conidia oblong, ellipsoidal, muriform, with a constricted median transverse septum, pale to brown, minutely verruculose.

*Spegazzinia* Sacc.  
(1879, *Spegazzinia*: 1)

Conidiophores macronematous, mononematous, basauxic, arising from a mother cell subspherical, ampulliform, unbranched, straight or flexuous, subhyaline to brown, smooth or verrucose, long and short conidiophores producing different conidia. Conidiogenous cells monoblastic, integrated, terminal, cylindrical. Conidia solitary, acrogenous of one or two types: on long conidiophores, conidia composed by 4 or 8 subglobose cells, with very long spines, dark brown; on short conidiophores conidia subspherical, flattened, cruciately septate or muriform, constricted at the septa, clear to dark brown, smooth or with short spines. Type species: *Spegazzinia ornata* Sacc., 1880.

Ellis 1971; Carmichael & al. 1980.

*Spegazzinia tessartha* (Berk. & M. A. Curtis) Sacc., 1886, Syll. fung., 4: 758.

Mother cells  $4-8 \times 3-6 \mu\text{m}$ . Conidiophores basauxic, macronematous, mononematous. Long conidiophores, producing spiny conidia, dark brown and often verrucose in the upper part, up to  $180 \mu\text{m}$  long; short conidiophores, producing muriform conidia, up to  $15 \mu\text{m}$  long. Conidiogenous cells monoblastic, integrated, terminal, cylindrical, clear brown. Spiny conidia  $12-18 \mu\text{m}$  with spines up to  $10 \mu\text{m}$  long, and composed by subglobose dark brown cells; muriform conidia cruciately septate, flattened, smooth or with short spines, brown,  $13-17 \times 8-9 \mu\text{m}$  (Fig. 108).

Basionym: *Sporidesmium tessarthurum* Berk. & M. A. Curtis, 1868.

On dead leaves of *Pistacia lentiscus*.

Ellis 1971.

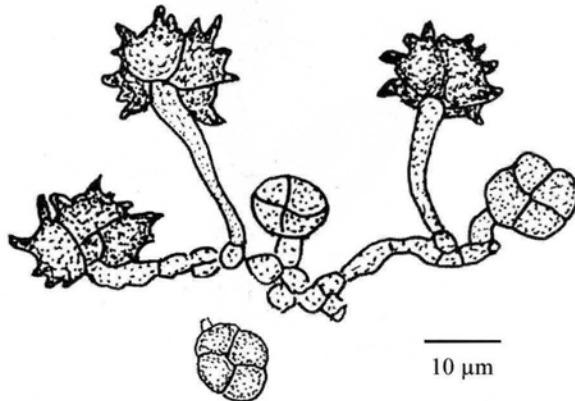


Fig. 108 - *Spegazzinia tessartha*. Conidiophores basauxic, flexuous. Conidiogenous cells monoblastic, terminal, integrated. Conidia spiny composed by subglobose cells; conidia of a second type muriform and cruciately septate, brown.



*Spegazzinia parkeri* Sivasith., 1974, Trans. Br. mycol. Soc., 62: 427.

Mother cells  $5-10 \times 4-6 \mu\text{m}$ . Conidiophores basauxic, macronematous, momonematous, clear brown, up to  $35 \times 2-3.5 \mu\text{m}$ . Conidiogenous cell monoblastic, integrated, cylindrical, clear brown. Conidia composed usually of 8 cells in two tiers of four cells each, subglobose blackish-olive to black,  $20-30 \times 15-25 \mu\text{m}$  (Fig. 109).

On dead leaves of *Phillyrea angustifolia*.

Ellis 1976.

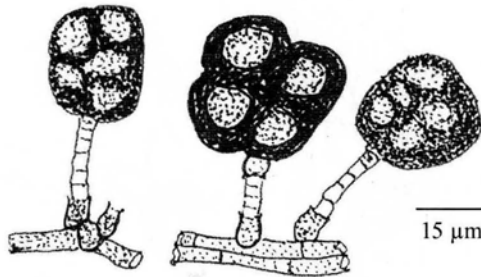


Fig. 109 - *Spegazzinia parkeri*. Conidiophores basauxic, erect. Conidiogenous cells monoblastic, terminal, integrated. Conidia subglobose, composed by 8 cells, olive to black.

***Zygosporium* Mont.**

(1842, Sagra, Historia física, polirica y nayturál de la islea de Cuba: 303)

Conidiophores sometimes setiform, macronematous or micronematous, mononematous, solitary, branched or unbranched, brown, smooth or finely echinulate, with dark brown, curved, swollen vesicles sometimes on short or long stalks, upper part of conidiophore frequently sterile, sometimes ending in a small knob. Conidiogenous cells monoblastic, discrete, determinate, ampulliform, ellipsoidal, sometimes curved, tapering to a point, colourless or pale brown, on dark brown vesicles. Conidia solitary, acrogenous, subspheroidal or ellipsoidal, aseptate, hyaline to light brown, smooth, verruculose to verrucose.

Type species: *Zygosporium oscheoides* Mont., 1842.

Hughes 1951 b; Ellis 1971.

***Zygosporium echinosporum* Bunting & E. W. Mason, 1941, Mycol. Pap., 5: 135.**

Conidiophores macronematous, mononematous, setiform, with hyaline knob in the upper sterile part, 5-7  $\mu\text{m}$  in diameter, branched, up to 300  $\mu\text{m}$  long, with one or several vesicles borne laterally on long stalks, vesicles 9-15  $\times$  7-10  $\mu\text{m}$ . Conidiogenous cells monoblastic, discrete, determinate, ellipsoidal, on dark brown vesicles. Conidia solitary, spherical, aseptate, hyaline, verruculose, 6-9  $\mu\text{m}$  in diameter (Fig. 110).

On dead leaves of *Olea europaea* var. *sylvestris*, *Pistacia lentiscus*.

Hughes 1951 b; Ellis 1971;

Ellis & Ellis 1997.

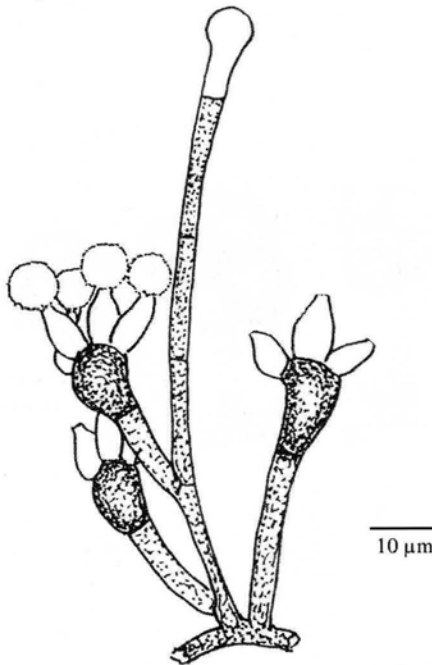


Fig. 110 - *Zygosporium echinosporum*. Conidiophores branched, with dark vesicles and apical knob. Conidiogenous cells monoblastic, determinate, ellipsoidal on dark vesicles. Conidia solitary, spherical, 0-septate, hyaline, verruculose.

*Zygosporium minus* S. Hughes, 1951, Mycol. Pap., 44: 6.

Conidiophores macronematous, mononematous, setiform, branched, up to 50  $\mu\text{m}$  long, with a single lateral vesicle on short stalk near the base, vesicles, 8-12  $\times$  4-8  $\mu\text{m}$ . Conidiogenous cells monoblastic, discrete, determinate, hyaline, ellipsoidal, on dark brown vesicles. Conidia solitary, spherical, aseptate, hyaline to pale brown, verruculose, 6-9  $\mu\text{m}$  in diameter (Fig. 111).

On dead leaves of *Smilax aspera*.

Hughes 1951 b; Ellis 1971.

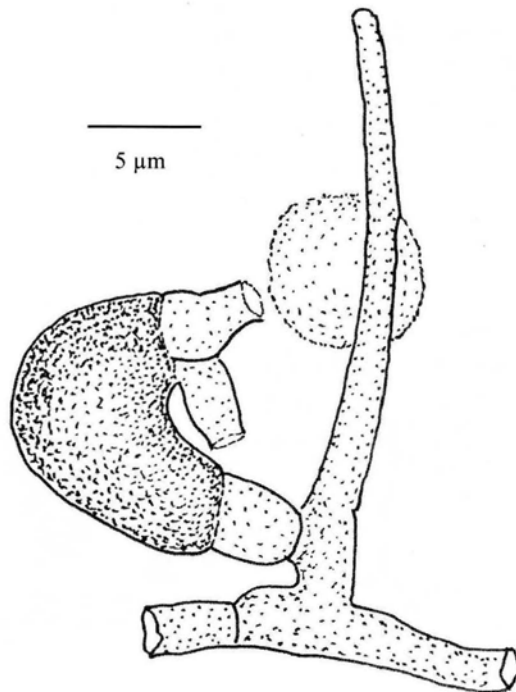


Fig. 111 - *Zygosporium minus*. Conidiophore setiform, with a single lateral vesicle. Conidiogenous cells monoblastic, determinate, ellipsoidal, on dark vesicle. Conidia solitary, spherical, 0-septate, hyaline, verruculose.

*Zygosporium mycophilum* (Vuill.) Sacc, 1911, *Annls mycol.*, 9: 256.

Conidiophores macronematous, mononematous, erect, unbranched with apical vesicles,  $12-15 \times 6-8 \mu\text{m}$ . Conidiogenous cells monoblastic, discrete, determinate, hyaline, ellipsoidal, on dark brown vesicles. Conidia solitary, ellipsoidal, aseptate, hyaline, smooth or minutely verrucose,  $5-10 \times 4-6 \mu\text{m}$  (Fig. 112).

Basionym: *Urophiala mycophila* Vuill., 1909.

On dead leaves of *Myrtus communis*.

Hughes 1951 b; Ellis 1971.

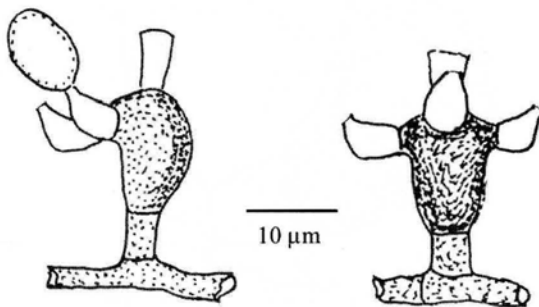


Fig. 112 - *Zygosporium mycophilum*. Conidiophores erect, unbranched. Conidiogenous cells monoblastic, determinate, hyaline on apical dark vesicles. Conidia solitary, ellipsoidal, 0-septate, hyaline, smooth or minutely verrucose.

*Zygosporium gibbum* (Sacc., M. Rousseau & E. Bommer) S. Hughes, 1958, Can. J. Bot., 36: 825.

Conidiophores semi-macronematous, erect, unbranched, with apical vesicles,  $10-15 \times 7-9 \mu\text{m}$ . Conidiogenous cells monoblastic, discrete, determinate, hyaline, ellipsoidal, on dark brown vesicles. Conidia solitary, spherical, aseptate, hyaline, smooth to minutely verrucose,  $4.5-6 \mu\text{m}$  in diameter (Fig. 113).

Basionym: *Clasterosporium gibbum* Sacc., M. Rousseau & E. Bommer, 1884.

Synonym: *Zygosporium parasiticum* (Grove) Bunting & E. W. Mason, 1941.

On dead leaves of *Arbutus unedo*, *Ceratonia siliqua*, *Chamaerops humilis*, *Cistus monspeliensis*, *C. salvifolius*, *Myrtus communis*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Pistacia lentiscus*, *Quercus ilex*, *Smilax aspera*.

Ellis 1971; Ellis & Ellis 1998.

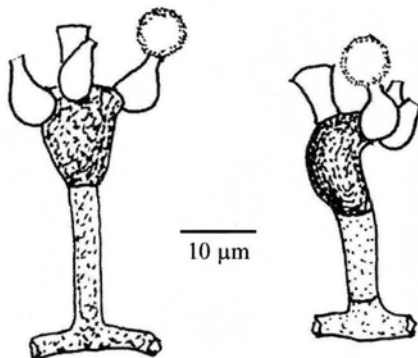


Fig. 113 - *Zygosporium gibbum*. Conidiophores erect, unbranched. Conidiogenous cells monoblastic, determinate, hyaline on apical dark vesicles. Conidia solitary, spherical, 0-septate, hyaline, smooth or minutely verrucose.

***Periconia* Tode**

(1791, Fung. Mecklenb. Sel., 2: 2)

Stroma frequently present, pseudoparenchymatous, clear to dark brown. Conidiophores, macronematous, rarely micronematous, mononematous; macronematous conidiophores often with stipe and spherical head, sometimes branched or setiform, straight or flexuous, pale to dark brown, smooth, rarely verrucose. Conidiogenous cell discrete, determinate on branches and stipe, monoblastic, polyblastic, ellipsoidal, spherical, subspherical. Conidia in chains often branched, spheroidal, occasionally ellipsoidal or cylindrical, aseptate, pale to dark brown, verruculose or echinulate.

Type species: *Periconia lichenoides* Tode, 1791.

Rao & Rao 1964; Ellis 1971.

***Periconia echinochloae* (Bat.) M. B. Ellis, 1971, Dematiaceous Hyphomycetes: 347.**

Conidiophores macronematous, mononematous, solitary or in small groups, erect, straight or flexuous, smooth, dark brown, branched in the upper part, branches of the same colour of the conidiophore, up to  $500 \times 10\text{-}20 \mu\text{m}$  at the base. Conidiogenous cell blastic, determinate, discrete, ellipsoidal. Conidia in short chains, ellipsoidal, aseptate, golden brown, verruculose,  $10\text{-}33 \times 6\text{-}12 \mu\text{m}$  (Fig. 114).

Basionym: *Periconiella echinochloae* Bat., 1952.

On dead leaves of *Chamaerops humilis*.

Ellis 1971.

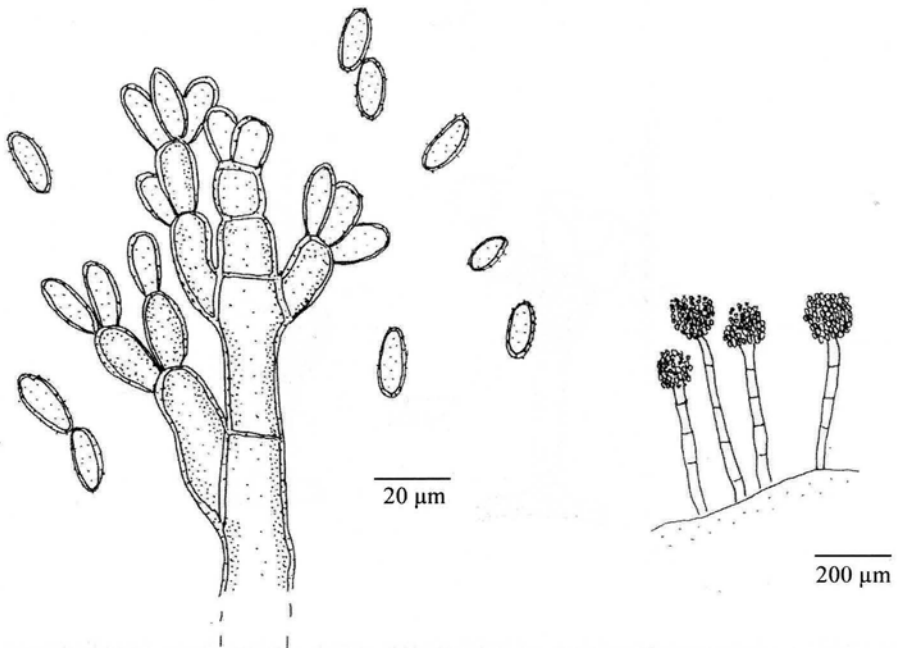


Fig. 114 - *Periconia echinochloae*. Conidiophores erect or flexuous. Conidiogenous cells blastic, determinate. Conidia in chains, ellipsoidal, 0-septate, golden brown, verruculose.

*Periconia minutissima* Corda, 1837, Icon. Fung., 1: 19.

Conidiophores macronematous, mononematous, erect, straight or flexuous, branched in the upper part, brown or light brown, smooth, up to  $550 \times 8-14 \mu\text{m}$  at the base. Conidiogenous cells blastic, discrete, determinate, subspherical, light brown, smooth. Conidia simple, in long branched chains, spherical, aseptate, pale brown, verruculose,  $4-6 (-7) \mu\text{m}$  in diameter (Fig. 115).

On dead leaves of *Chamaerops humilis*, *Phillyrea angustifolia*.  
Ellis 1971; Ellis & Ellis 1997.

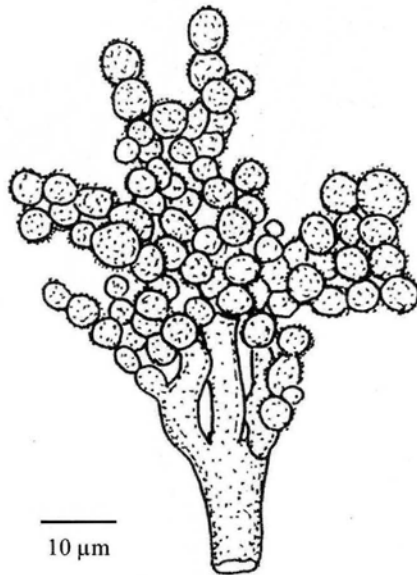


Fig. 115 - *Periconia minutissima*. Conidiophores erect or flexuous, branched in the upper part. Conidiogenous cells blastic, determinate. Conidia in branched chains, spherical, 0-septate, pale to brown, verruculose.

***Periconia digitata*** (Cooke) Sacc., 1886, Syll. fung., 4: 274.

Conidiophores macronematous, mononematous, erect, straight or flexuous, branched, brown, branches of the same colour of the conidiophore, smooth, up to  $660 \times 9-15 \mu\text{m}$  at the base. Conidiogenous cells blastic, discrete, determinate, subspherical. Conidia simple, spherical, aseptate, brown, verruculose to finely echinulate,  $7-11 \mu\text{m}$  in diameter (Fig. 116).

Basionym: *Sporocybe digitata* Cooke, 1883.

On dead leaves of *Chamaerops humilis*.

Ellis 1971; Ellis & Ellis 1998.

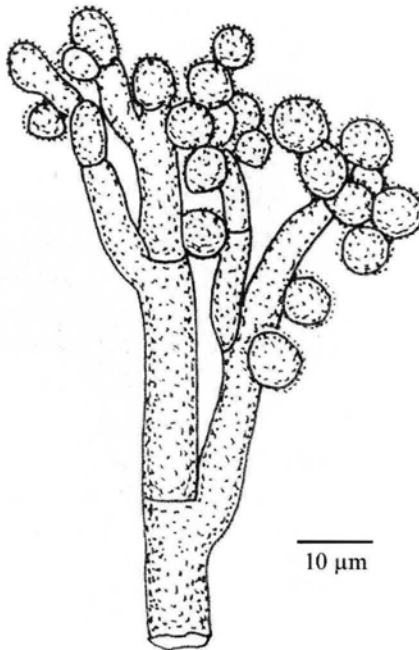


Fig. 116 - *Periconia digitata*. Conidiophores erect, repeatedly branched. Conidiogenous cells blastic, determinate. Conidia spherical, 0-septate, brown, verrucose.



*Periconia cookei* E. W. Mason & M. B. Ellis, 1953, Mycol. Pap., 56: 72.

Conidiophores macronematous, mononematous, unbranched, erect, straight or flexuous, dark brown, up to  $800 \times 14\text{--}25 \mu\text{m}$  at the base. Conidiogenous cells blastic, determinate, discrete, ellipsoidal, on the swollen apex,  $17\text{--}32 \mu\text{m}$  in diameter. Conidia sometimes in chains, spherical, aseptate, dark brown, verrucose,  $13\text{--}16 \mu\text{m}$  in diameter (Fig. 117).

On dead leaves of *Ilex aquifolium*.

Ellis 1971; Matsushima 1980, 1989; Ellis & Ellis 1997.

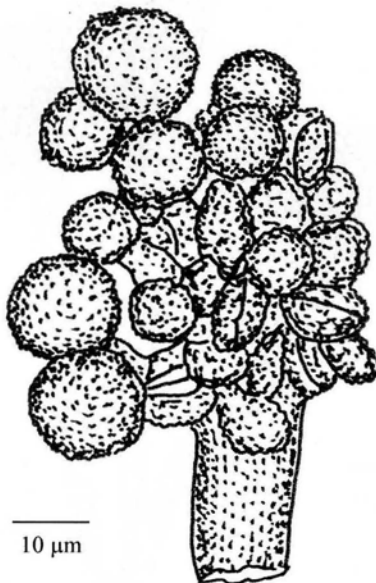


Fig. 117 - *Periconia cookei*. Conidiophores erect, flexuous. Conidiogenous cells blastic, determinate, formed on a swollen conidiophore apex, subspherical. Conidia sometimes in chains, spherical, 0-septate, dark brown, verrucose.

***Periconia byssoides*** Pers., 1801, Syn. Meth. Fung.: 18.

Conidiophores macronematous, mononematous, sometimes caespitose, unbranched, erect, straight or flexuous, dark brown to black,  $200-1400 \times 12-23 \mu\text{m}$  at the base, occasionally up to 2 mm, apical cell subhyaline,  $12-26 \times 11-28 \mu\text{m}$ . Conidiogenous cells blastic, determinate, discrete, subspherical formed over and below the apical septum. Conidia in short chains sometimes branched, spherical, aseptate, brown, verrucose,  $10-15 \mu\text{m}$  in diameter (Fig. 118).

Homotypic synonyms: *Sporocybe byssoides* (Pers.) Fr., 1832; *Sporocybe byssoides* (Pers.) Bonord., 1832.

Synonym: *Periconia pycnospora* Fresen., 1850.

On dead leaves of *Chamaerops humilis*.

Ellis 1971; Matsushima 1971; Ellis & Ellis 1998.

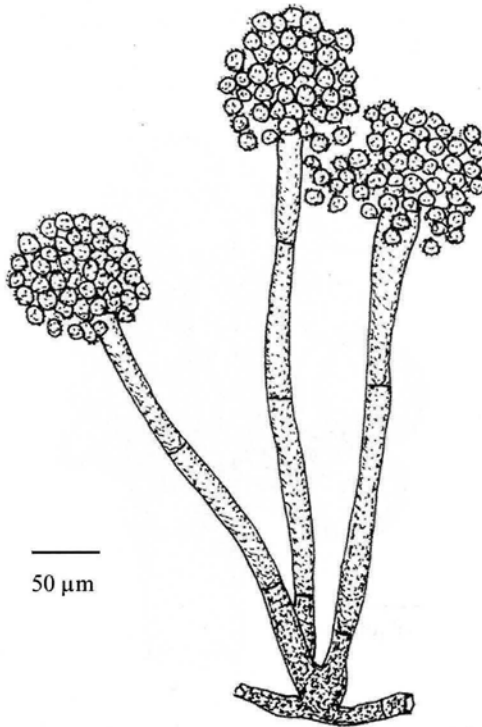


Fig. 118 - *Periconia byssoides*. Conidiophores erect, flexuous, sometimes caespitose. Conidiogenous cells blastic, determinate. Conidia in chains, simple, spherical, 0-septate, brown, verrucose.

*Torula* Pers.

(1794, Ann. Bot. Usteri, 15: 25)

Conidiophores micronematous, or semi-macronematous, sometimes irregularly branched, straight or flexuous, clear brown, smooth or verruculose. Conidiogenous cells polyblastic, rarely monoblastic, integrated, terminal, frequently discrete, determinate, spherical, smooth, verruculose, echinulate, sometimes collapsing in distal fertile part, proximal part dark brown. Conidia in chains sometimes branched, cylindrical with rounded ends, sometimes with several transverse septa with constrictions, brown or olivaceous brown, smooth, verruculose or echinulate.

Type species: *Torula herbarum* (Pers.) Link, 1809.

Ellis 1971.

*Torula ellisii* Yadav & Lal, 1966, J. Indian bot. Soc., 44: 404.

Conidiophores micronematous, clear brown, smooth, 2-3  $\mu\text{m}$  large. Conidiogenous cells blastic, determinate, integrated, terminal, frequently discrete, spherical, sometimes collapsing in distal fertile part, proximal part dark brown, 4-6  $\mu\text{m}$  in diameter. Conidia catenate, cylindrical with rounded ends or ellipsoidal, 1-septate, rarely 2-septate, dark or reddish brown, smooth or verruculose, 8-16  $\times$  5-7  $\mu\text{m}$  (Fig. 119).

On dead leaves of *Myrtus communis*.

Ellis 1976.

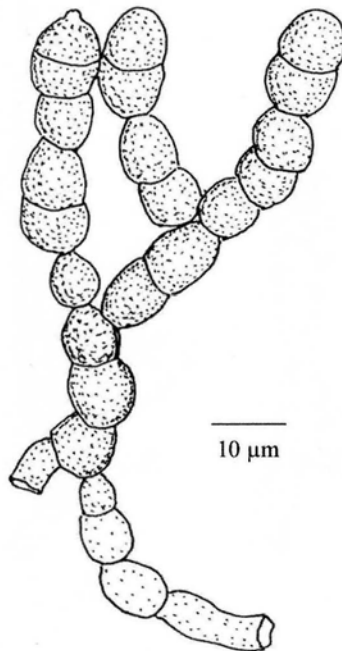


Fig. 119 - *Torula ellisii*. Conidiophores micronematous. Conidiogenous cells blastic, determinate, terminal, sometimes collapsing. Conidia in chains, ellipsoidal, septate, dark brown.

***Torula herbarum*** (Pers.) Link, 1809, Magazin Ges. Naturf. Freunde, 3: 19.

Conidiophores micronematous, semi-micronematous, clear brown, 2-6  $\mu\text{m}$  large. Conidiogenous cells blastic, determinate, integrated, terminal, frequently discrete, spherical, sometimes collapsing in distal fertile part, proximal part dark brown, 7-9  $\mu\text{m}$  in diameter. Conidia in acropetal chains, sometimes branched, cylindrical with rounded ends, 3-10-septate, constricted at the septa, clear to brown, finely echinulate or verruculose, the end-cell usually paler, 20-70  $\times$  5-9  $\mu\text{m}$  (Fig. 120).

Basionym: *Monilia herbarum* Pers., 1801

On dead leaves of *Chamaerops humilis*, *Cistus monspeliensis*, *Ceratonia siliqua*, *Euphorbia dendroides*, *Juniperus phoenicea*, *Olea europaea* var. *sylvestris*, *Phillyrea angustifolia*, *P. latifolia*, *Rosmarinus officinalis*.

Matsushima 1975; Domsch & al. 1993; Ellis & Ellis 1997, 1998.

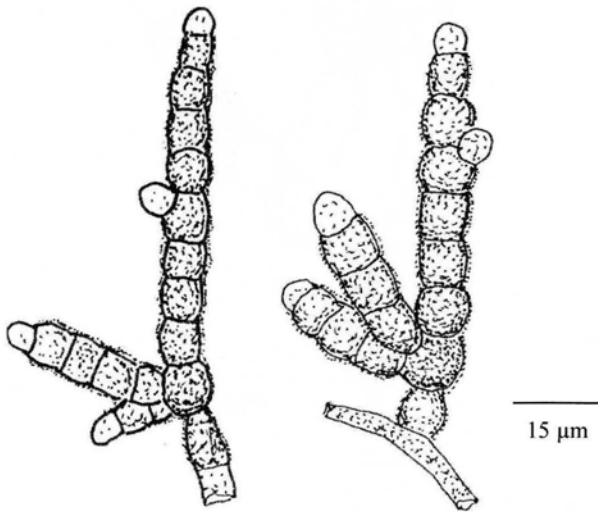


Fig. 120 - *Torula herbarum*. Conidiophores micronematous. Conidiogenous cells blastic, determinate, terminal, sometimes collapsing. Conidia acropetal, in chains sometimes branched, cylindrical, septate, clear brown, finely echinulate.

*Torula herbarum* f. *quaternella* Sacc., 1913, *Annls mycol.*, 11: 556.

Conidiophores micronematous, clear brown. Conidiogenous cells blastic, determinate, integrated, terminal, frequently discrete, spherical, sometimes collapsing in distal fertile part, proximal part dark brown. Conidia in acropetal chains, sometimes branched, cylindrical with rounded ends, 1-3-septate, constricted at the septa, clear to brown, finely echinulate or verruculose,  $10-17 \times 5-7 \mu\text{m}$  (Fig. 121).

On dead leaves of *Myrtus communis*, *Phillyrea angustifolia*.

Ellis 1971; Domsch & al. 1993.

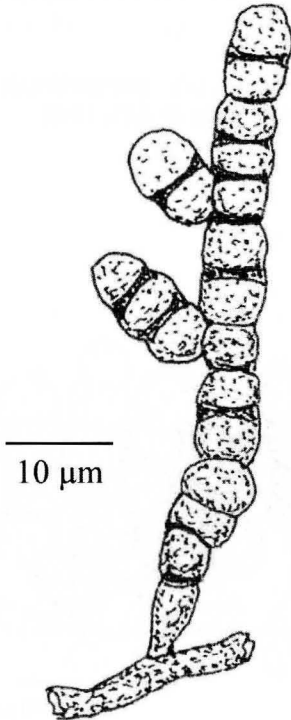


Fig. 121 - *Torula herbarum* f. *quaternella*. Conidiophores micronematous. Conidiogenous cells blastic, determinate, sometimes collapsing, terminal. Conidia in acropetal chains, sometimes branched, cylindrical, septate, clear brown, finely echinulate.

***Rutola*** J. L. Crane & Schokn.  
(1977, Can. J. Bot., 55: 3015)

Conidiophores micronematous, branched, subhyaline to clear brown. Conidiogenous cells monoblastic, poorly differentiated, integrated, terminal or intercalary, usually spherical, subhyaline to clear brown. Conidia fragmenting in segments, conidia in long simple or branched acrogenous chains, constricted at the septa, fragments with 0-to several septa. Type species: *Rutola graminis* (Desm.) J. L. Crane & Schokn., 1977. Crane & Schoknecht 1977.

***Rutola graminis*** (Desm.) J. L. Crane & Schokn., 1977, Can. J. Bot., 55: 3015.

Conidiophores micronematous, branched, subhyaline to clear brown. Conidiogenous cells monoblastic, integrated, terminal or intercalary, poorly differentiated, subhyaline to clear brown, subspherical,  $3-4.5 \times 2-3 \mu\text{m}$ . Conidia fragmenting in segments, in long simple or branched acrogenous chains, constricted at the septa, fragments with 0-to several septa, dark brown, minutely verruculose, each conidial cell subspherical,  $4-5 \times 4-6.5 \mu\text{m}$  (Fig. 122).

Basionym: *Torula graminis* Desm., 1826.

On dead leaves of *Chamaerops humilis*, *Cistus monspeliensis*.

Ellis 1971; Crane & Schoknecht 1977; Ellis & Ellis 1998.

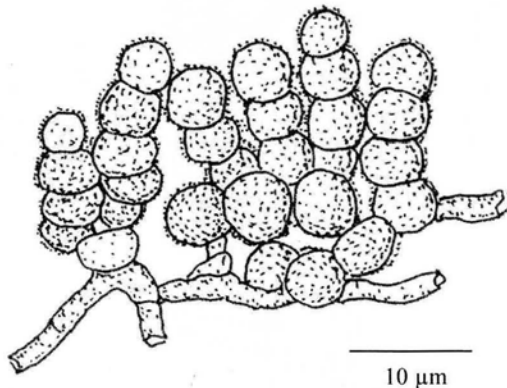


Fig. 122 - *Rutola graminis*. Conidiophores micronematous, branched. Conidiogenous cells monoblastic, terminal or intercalary, undifferentiated. Conidia in long branched chains, fragmenting into segments 0- to several septa, dark brown, finely verruculose.

***Domingoella* Petr. & Cif.**  
(1932, *Annls mycol.*, 30: 339)

Conidiophores macronematous, mononematous, erect, straight or flexuous, unbranched, cylindrical, pale brown, smooth. Conidiogenous cells monoblastic, integrated, terminal, percurrent, cylindrical. Conidia solitary, acrogenous, spherical, with a narrow cylindrical protuberant peg at the base, aseptate, clear brown to olivaceous brown, smooth.

Type species: *Domingoella asterinarum* Petr. & Cif., 1932.

Ellis 1971; Carmichael & al. 1980.

***Domingoella asterinarum* Petr. & Cif., 1932, *Annls mycol.*, 30: 339.**

Conidiophores macronematous, mononematous, straight or flexuous, unbranched, cylindrical, pale brown, smooth, up to  $120 \times 1-3 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, cylindrical. Conidia solitary, acrogenous, spherical with a narrow cylindrical protuberant peg at the base, aseptate, clear brown to olivaceous brown, smooth, 7-10  $\mu\text{m}$  in diameter (Fig. 123).

On dead leaves of *Myrtus communis*, *Pistacia lentiscus*.

Ellis 1971.

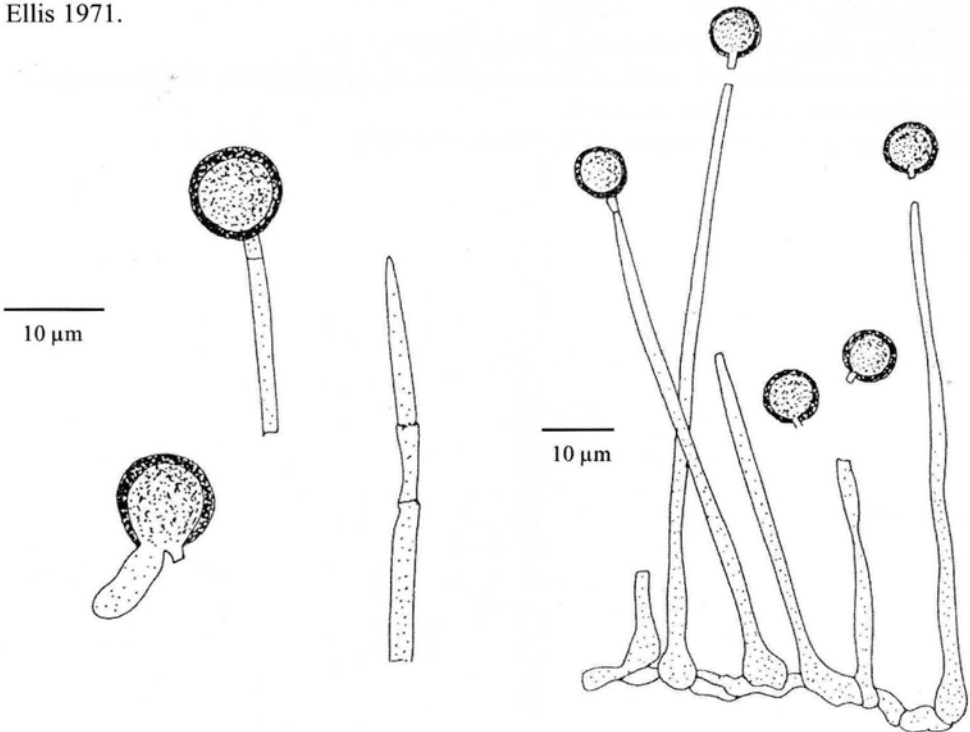


Fig. 123 - *Domingoella asterinarum*. Conidiophores erect or gently flexuous. Conidiogenous cells monoblastic, percurrent. Conidia solitary, spherical, with a protuberant peg, 0-septate, pale to olivaceous brown, smooth.

*Endophragmiella* B. Sutton  
(1973, Mycol. Pap., 132: 58)

Conidiophores macronematous, mononematous, erect, straight or flexuous, unbranched or branched near the base, septate, clear brown, smooth. Conidiogenous cells monoblastic, integrated, terminal, generally percurrent, cylindrical. Conidia solitary, acrogenous, ellipsoidal, obovoid, oblong rounded in the upper part, clavate, broadly fusiform, 1-3-septate, sometimes with a small protuberant peg at the base, clear brown, smooth or minutely verruculose.

Type species: *Endophragmiella pallescens* B. Sutton, 1973.  
Crane 1972; Ellis 1976; Carmichael & al. 1980.

*Endophragmiella boewei* (J. L. Crane) S. Hughes, 1979, N. Z. J. Bot., 17: 147.

Conidiophores macronematous, mononematous, solitary, erect, brown, smooth,  $100-300 \times 2-4 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, cylindrical, clear brown. Conidia solitary, acrogenous, obovoid, broadly pyriform, 1-septate, upper cell pale brown to brown, dome like, lower cell paler, seceding rhexolytically,  $18-23 \times 12-14 \mu\text{m}$  (Fig. 124).

Basionym: *Endophragmia boewei* J. L. Crane, 1972.

On dead leaves of *Arbutus unedo*, *Cistus salvifolius*, *C. monspeliensis*, *Phillyrea angustifolia*, *Pistacia lentiscus*, *Smilax aspera*.

Matsushima 1975, 1996; Hughes 1979; Ellis & Ellis 1997.



Fig. 124 - *Endophragmiella boewei*. Conidiophores erect, solitary. Conidiogenous cells monoblastic, percurrent. Conidia solitary, ellipsoidal, subspherical, rounded in the upper part, 1-septate, upper cell brown dome like, lower cell paler.



*Corynespora* Güssow

(1906, Z. PflKrankh. PflPath. PflSchutz, 16: 10)

Stroma sometimes present. Conidiophores macronematous, mononematous, erect, straight or flexuous, solitary or grouped, unbranched, occasionally branched, brown to olivaceous brown, smooth. Conidiogenous cells monotretic, integrated, terminal, percurrent, cylindrical or doliiform. Conidia solitary or in short chains, acrogenous, obclavate in most species, cylindrical in few, subhyaline, septate or pseudoseptate, clear to dark brown, commonly smooth.

Type species: *Corynespora mazei* Güssow, 1906.

Ellis 1971; Carmichael & al. 1980; Matsushima 1983; Mercado Sierra & al. 1997.

*Corynespora cassiicola* (Berk. & M.A. Curtis) C.T. Wei, 1950, Mycol. Pap., 34: 5.

Conidiophores macronematous, mononematous, erect, straight or flexuous, unbranched, smooth, pale to clear brown, conidiophores and conidiogenous cells  $110-850 \times 4-11 \mu\text{m}$ . Conidiogenous cells monotretic, integrated, terminal, percurrent, cylindrical, up to 9 proliferations. Conidia solitary or in short chains, acrogenous, simple, very variable in shape, obclavate to cylindrical, straight or curved, with 4-20 pseudosepta, subhyaline to pale olivaceous brown or brown, smooth,  $40-220 \times 9-22 \mu\text{m}$  (Fig. 125).

Basionym: *Helminthosporium cassiicola* Berk. & M. A. Curtis, 1868.

Synonym: *Corynespora vignicola* (E. Kawam.) Goto, 1950.

On dead leaves of *Juniperus phoenicea*.

Ellis 1971; Ellis & Ellis 1997; Mercado Sierra & al. 1997.

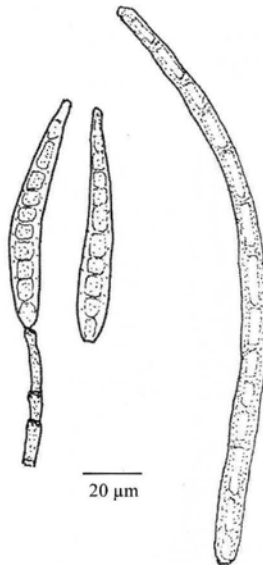


Fig. 125 - *Corynespora cassiicola*. Conidiophores erect, unbranched. Conidiogenous cells monotretic, percurrent. Conidia solitary or in chains, erect or curved, with pseudosepta, subhyaline to brown, smooth.

*Sporidesmium* Link

(1809, Magazin Ges. naturf. Freunde, 3: 41)

Stroma rarely present. Conidiophores macronematous, mononematous, sometimes caespitose, unbranched, straight or flexuous, clear to dark brown. Conidiogenous cells monoblastic, integrated, terminal, percurrent, cylindrical or lageniform. Conidia solitary, acrogenous simple, straight, curved, occasionally sigmoid, cylindrical, fusiform, obclavate, obpyriform or obturbinate, sometimes rostrate, septate or pseudoseptate, subhyaline, clear to dark brown, smooth or verruculose.

Type species: *Sporidesmium atrum* Link, 1809.

Ellis 1971; Carmichael & al. 1980.

*Sporidesmium adscendens* Berk., 1840, Ann. Mag. nat. Hist., 4: 291.

Conidiophores macronematous, mononematous, unbranched, straight or flexuous, clear to dark brown,  $20-45 \times 7-10 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, cylindrical. Conidia solitary, acrogenous, simple, flexuous, obclavate, rounded at the apex truncate at the base, 16-62-pseudoseptate, often constricted at the pseudosepta, clear to dark brown, basal cell often pale, smooth,  $110-375 \times 14-20 \mu\text{m}$ , ( $175-460 \times 14-16 \mu\text{m}$ , Matsushima 1975) (Fig. 126).

Homotypic synonyms: *Clasterosporium adscendens* (Berk.) Sacc., 1886; *Ellisembia adscendens* (Berk.) Subram., 1992.

On dead leaves of *Ceratonia siliqua*.

Ellis 1971; Matsushima 1975; Ellis & Ellis 1997.

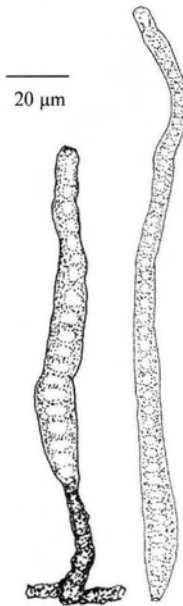


Fig. 126 - *Sporidesmium adscendens*. Conidiophores unbranched. Conidiogenous cells monoblastic, terminal, percurrent. Conidia solitary, flexuous, often constricted at the pseudosepta, clear to dark brown, smooth.

*Sporidesmium dioscoreae* M. B. Ellis, 1958, Mycol. Pap., 70: 25.

Conidiophores macronematous, mononematous, unbranched, straight or flexuous, mid to dark brown,  $40-90 \times 2.5-3.5 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, with 0-2 annellations, cylindrical. Conidia solitary, acrogenous, fusiform, septate, subhyaline to pale brown, smooth,  $18-31 \times 4-5 \mu\text{m}$  (Fig. 127).

Homotypic synonym: *Ellisembia dioscoreae* (M. B. Ellis) Subram., 1992.

On dead leaves of *Juniperus phoenicea*, *Pistacia lentiscus*.

Ellis 1976.

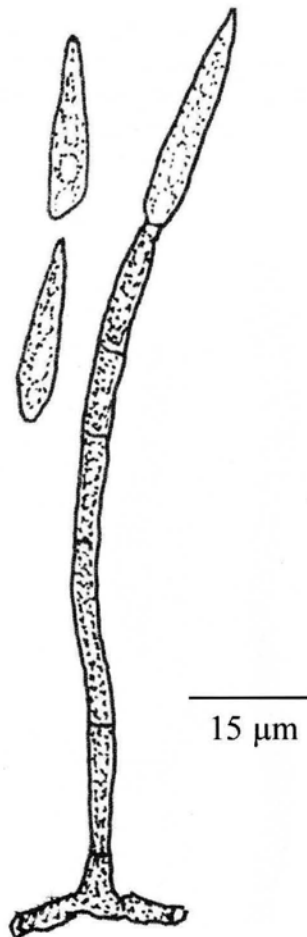


Fig. 127 - *Sporidesmium dioscoreae*. Conidiophores unbranched. Conidiogenous cells monoblastic, terminal, percurrent. Conidia solitary, septate, fusiform, subhyaline to pale brown, smooth.

*Sporidesmium nodipes* (Penz. & Sacc.) S. Hughes, 1958, Can. J. Bot., 36: 809.

Conidiophores macronematous, mononematous, unbranched, straight or flexuous, blackish brown,  $250 \times 3-5 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, lageniform. Conidia solitary, acrogenous, straight or gently curved, fusiform, obclavate, septate, dark-brown, basal cell subhyaline, smooth,  $36-67 \times 6.5-8 \mu\text{m}$  (Fig. 128).

Basionym: *Helminthosporium nodipes* Penz. & Sacc., 1902.

On dead leaves of *Chamaerops humilis*.

Ellis 1976.



Fig. 128 - *Sporidesmium nodipes*. Conidiophores unbranched. Conidiogenous cells monoblastic, terminal, percurrent. Conidia solitary, fusiform, septate, dark brown, smooth.

*Sporidesmium coffeicola* M. B. Ellis, 1976, More Dematiaceous Hyphomycetes: 87.

Conidiophores macronematous, mononematous, unbranched, straight or curved, brown to dark brown, smooth, up to  $80 \times 3-5 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, with 0-3 proliferations cylindrical or lageniform. Conidia solitary, acrogenous, obpyriform, 2-3-septate, with the lower two cells brown to dark brown, terminal cells subhyaline, smooth,  $15-21 \times 6-8 \mu\text{m}$  (Fig. 129).

Homotypic synonym: *Penzigomyces coffeicola* (M. B. Ellis) Subram., 1992.

On dead leaves of *Olea europaea* var. *sylvestris*.

Ellis 1976.

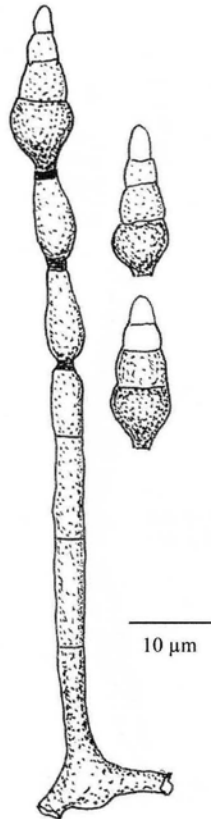


Fig. 129 - *Sporidesmium coffeicola*. Conidiophores unbranched, erect or flexuous. Conidiogenous cells monoblastic, terminal, percurrent. Conidia solitary, obpyriform, lower two cells brown or dark brown, smooth.

*Sporidesmium parvum* (S. Hughes) M. B. Ellis, 1958, Mycol. Pap., 70: 69.

Conidiophores macronematous, mononematous, unbranched, straight or flexuous, dark brown,  $40-160 \times 3.5-5 \mu\text{m}$ . Conidiogenous cells monoblastic, integrated, terminal, percurrent, with 1-2 proliferations, lageniform. Conidia solitary, acrogenous, obpyriform, septate, brown, smooth,  $19-31 \times 7-9 \mu\text{m}$  (Figs. 130, 131).

Basionym: *Podoconis parva* S. Hughes, 1953.

On dead leaves of *Pistacia lentiscus*.

Ellis 1976.

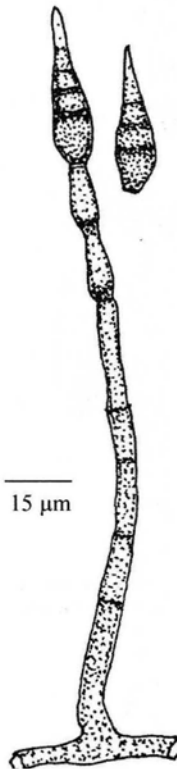


Fig. 130 - *Sporidesmium parvum*. Conidiophores unbranched. Conidiogenous cells monoblastic, terminal, percurrent. Conidia solitary, septate, obpyriform, brown, smooth.

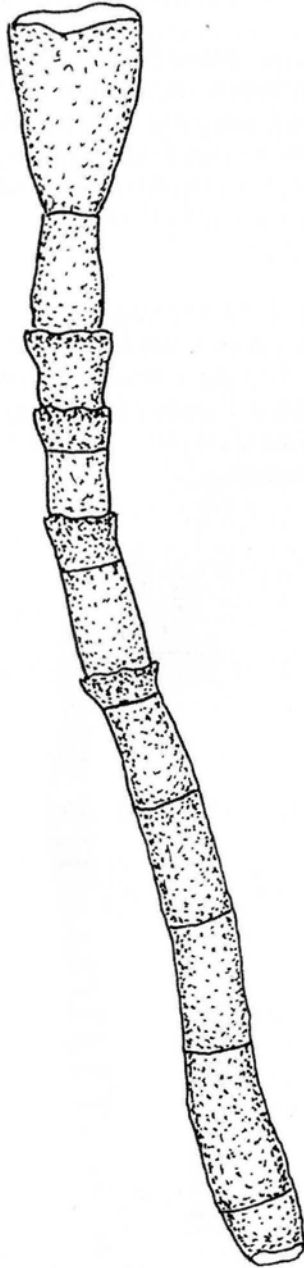


Fig. 131 – *Sporidesmium* sp. Detail of apical part of conidiophore.

***Septonema* Corda**  
(1837, Icon. Fung., 1: 9)

Conidiophores macronematous, mononematous, solitary or caespitose, sometimes branched, stright or flexuous, brown, smooth. Conidiogenous cells monoblastic, rarely polyblastic, terminal, intercalary, integrated, determinate, cylindrical. Conidia frequently acrogenous, in long and branched acropetal chains, oblong, cylindrical, usually with truncate ends, ellipsoidal, fusiform, 1 or several transverse septa clear to dark brown, smooth.

Type species: *Septonema secedens* Corda, 1837.

Ellis 1971; Carmichael & al. 1980.

***Septonema hormiscium* Sacc., 1882, Michelia, 2: 559.**

Conidiophores macronematous, mononematous, solitary or caespitose, stright, branched, dark brown, smooth,  $30-40 \times 8-12 \mu\text{m}$ . Conidiogenous cells monoblastic, terminal, integrated, determinate, subcylindrical. Conidia catenate, fusiform with truncate ends, septate, 4-9 black septa, dark brown, smooth,  $40-60 \times 7.5-12 \mu\text{m}$  (Fig. 132).

On dead leaves of *Myrtus communis*.

Matsushima 1975.

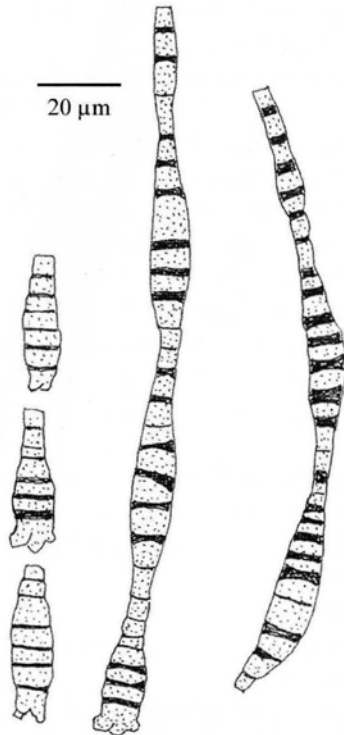


Fig. 132 - *Septonema hormiscium*. Conidiophores solitary or caespitose, branched. Conidiogenous cells monoblastic, terminal, determinate. Conidia cylindrical in chains, with black septa, brown, smooth.



## Glossary

**Acerose:** needle-like, like a pine needle, (Table 4: 3).

**Acrogenous:** development at the apex.

**Acropetal:** a chain of spores with the youngest at the tip (distal end).

**Acropleurogenous:** formed on the tip and on the sides.

**Aggregated (conidia, conidiogenous cell):** not solitary, crowded.

**Amphigenous:** making growth all round or on two sides.

**Ampulliform (conidiogenous cell):** flask-like, inflated at the base.

**Anamorph:** the asexual stage in the life cycle of a pleomorphic fungus.

**Anastomosis:** hyphal fusions.

**Annellations:** ringlike scars produced by percurrent proliferation of a blastic conidiogenous cell (annellide), (Table 2: 1-3).

**Apiculate (conidia):** having an apiculus.

**Apiculus:** a short projection at one end.

**Appendage:** a process (outgrowth) of any sort, setula, (Table 4: 4).

**Appendiculate:** with appendage, (Table 4: 4).

**Arthroconidia:** a spore resulting from the fragmentation of a pre-existing, determinate hyphal element, (Table 4: 6).

**Basipetal:** a chain of spores with the youngest at the base.

**Basoauxic:** elongating at the base.

**Basionym:** the name-bringing synonym on which a new transfer or new combination is based.

**Beak (conidia):** rostrum, (Table 4: 15, 17).

**Blastic (conidiogenous cell):** characterized by a marked enlargement of a recognizable conidial initial before delimitation by a septum. The conidium is differentiated from part of a cell at one (mono-) or several (poly-) conidiogenous loci.

**Caespitose (conidiophores):** aggregated, in groups.

**Catenate (conidia):** produced in a chain.

**Chlamyospore:** an asexual spore originating endogenously and singly within part of a pre-existing cell, often thick-walled, that generally functions as a resting spore.

**Cicatrized (conidia, conidiogenous cells):** having thickened scars, (Table 2: 6, 8).

**Circinate (setae):** twisted round, coiled, (Table 1: 4, 6).

**Clavate (conidia):** club-shaped, (Table 4: 9, 19).

**Collar branches:** branches around the conidiophores.

**Collarlet (conidiogenous cell):** a cup-shaped structure at the apex of a conidiogenous cell, (Table 3: 1, 2, 4, 6).

**Conidiogenous cell:** cell from which a conidium is formed.

**Conidiophore:** a simple or branched hypha arising from a somatic hypha and bearing one or more conidiogenous cells.

**Conidium (pl. conidia):** asexual spore produced by a conidiogenous cell.

**Crest (conidia):** lateral paler band, (Table 4: 5).

**Cuneiform:** thinner at one end than the other, wedge shaped.

**Denticulate (conidiogenous cell):** having small teeth, (Table 2: 4, 5, 7).

**Determinate (conidiogenous cell):** growth ceasing with the production of terminal conidia, (Table 3: 3).

**Dichotomous:** branching into two more or less equal arms.

**Discrete (conidiogenous cell):** separate from the main axis or branches of a conidiophore and often having a distinctive shape, (Table 3: 1, 2, 3, 5, 6).

**Doliiform:** barrel-like.

**Dyctioconidia:** dictyospore divided by intersecting septa in more than one plane, muriform spore, (Table 4: 14-19).

**Echinate:** having sharply pointed spines, spinose.

**Echinulate:** delicately echinate.

**Endogenous (conidia):** undergoing development within, (Table 3: 7).

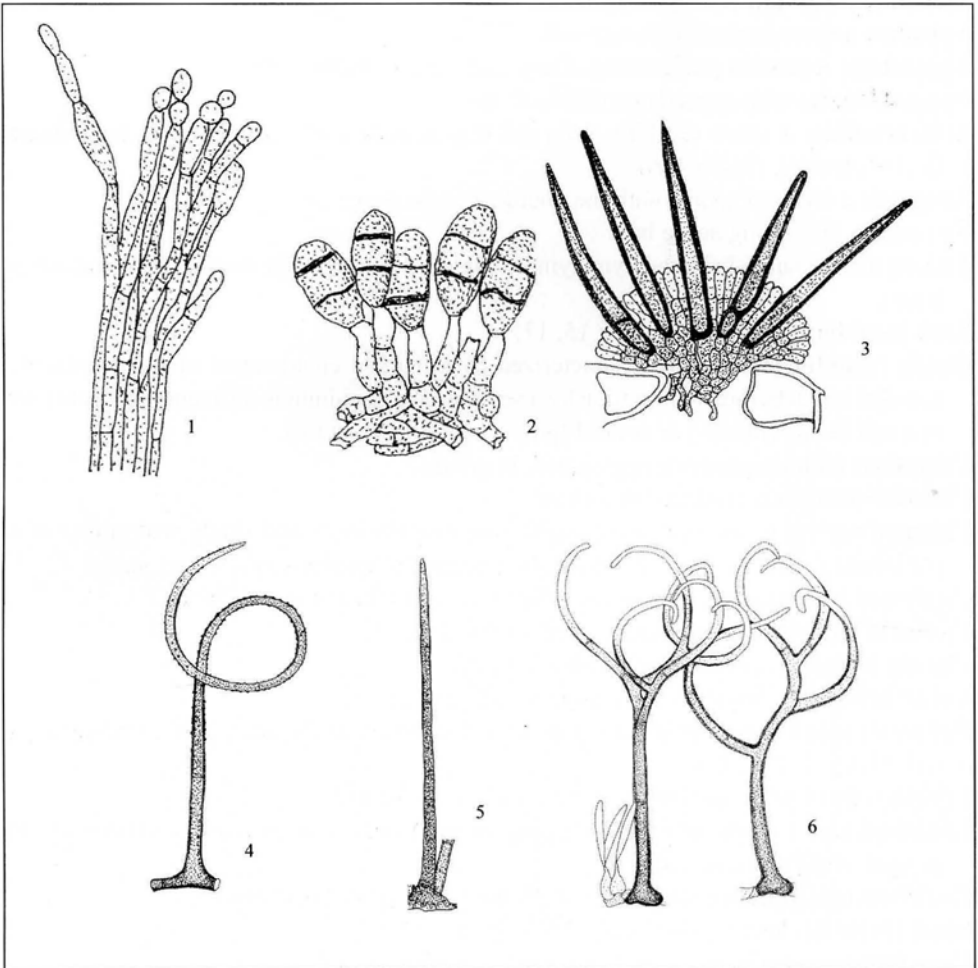


Table 1.

**Exogenous (conidia):** undergoing development outside.

**Falcate (conidia):** curved, (Table 4: 3).

**Fertile (branches):** producing conidia.

**Geniculate (conidiophores):** bent like a knee, (Table 2: 7).

**Guttulate (conidia):** having one (uni) or more oil-like drops inside.

**Helicoid (conidia):** single, usually elongated axis curved with one or more complete rotations, in two or three dimensions, (Table 4: 10).

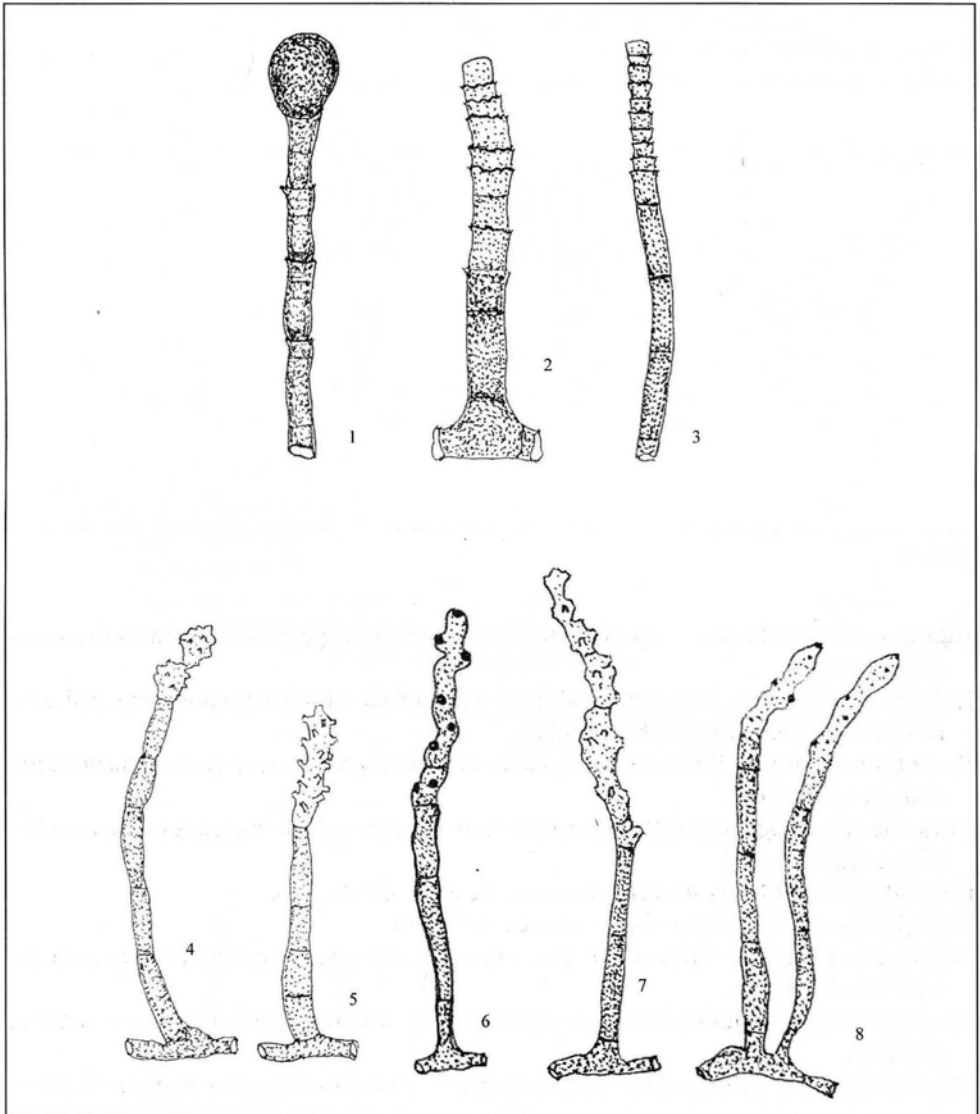


Table 2.

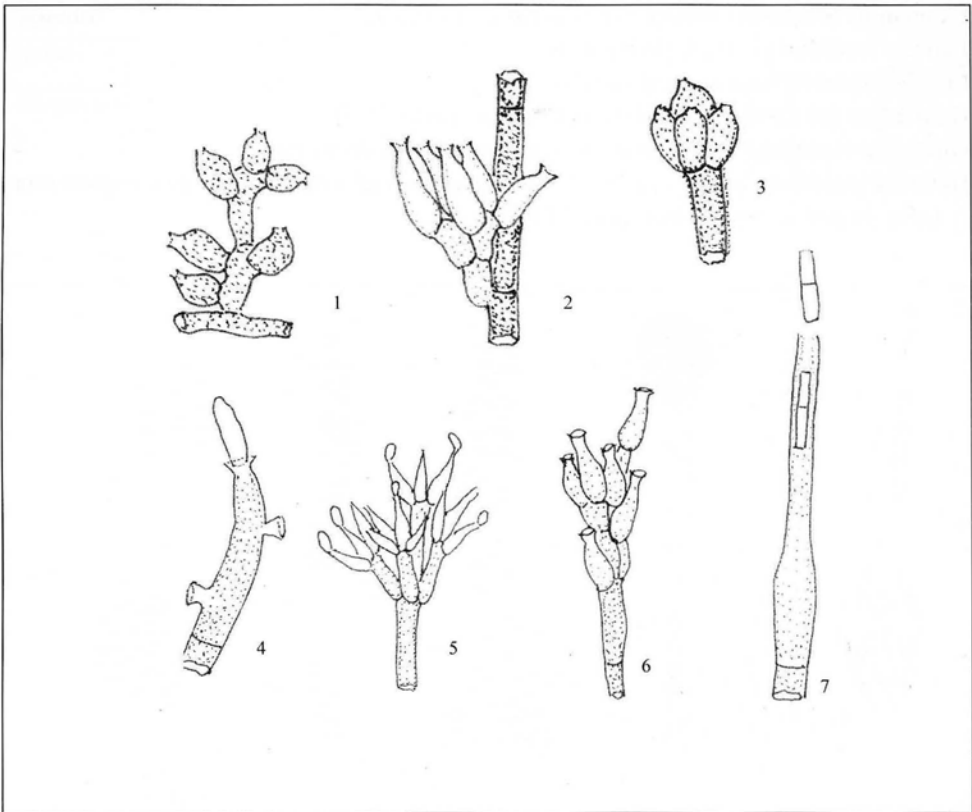


Table 3.

**Hilum:** small protuberance, especially that on a spore at the point of attachment to a conidiogenous cell.

**Holoblastic (conidia):** both outer and inner walls of the blastic conidiogenous cell contribute to the formation of the conidium.

**Homotypic synonym:** if two or more names are based on the same type, nomenclatural obligate synonyms.

**Integrate (conidiogenous cell):** incorporated in the main axis or branches of the conidiophore, (Table 2: 4-8).

**Intercalary (conidiogenous cell):** between the apex and the base.

**Lageniform:** swollen at the base, narrowed at the top.

**Lectotype:** an element selected in a later work from the original material where no holotype was designed.

**Macronematous (conidiophore):** morphologically different from vegetative hyphae, (Table 2).

**Micronematous (conidiophore):** morphologically similar to vegetative hyphae, (Table 1: 6).

**Mononematous (conidiophore):** solitary or in tufts or in loose fascicles, (Table 2: 7, 8).

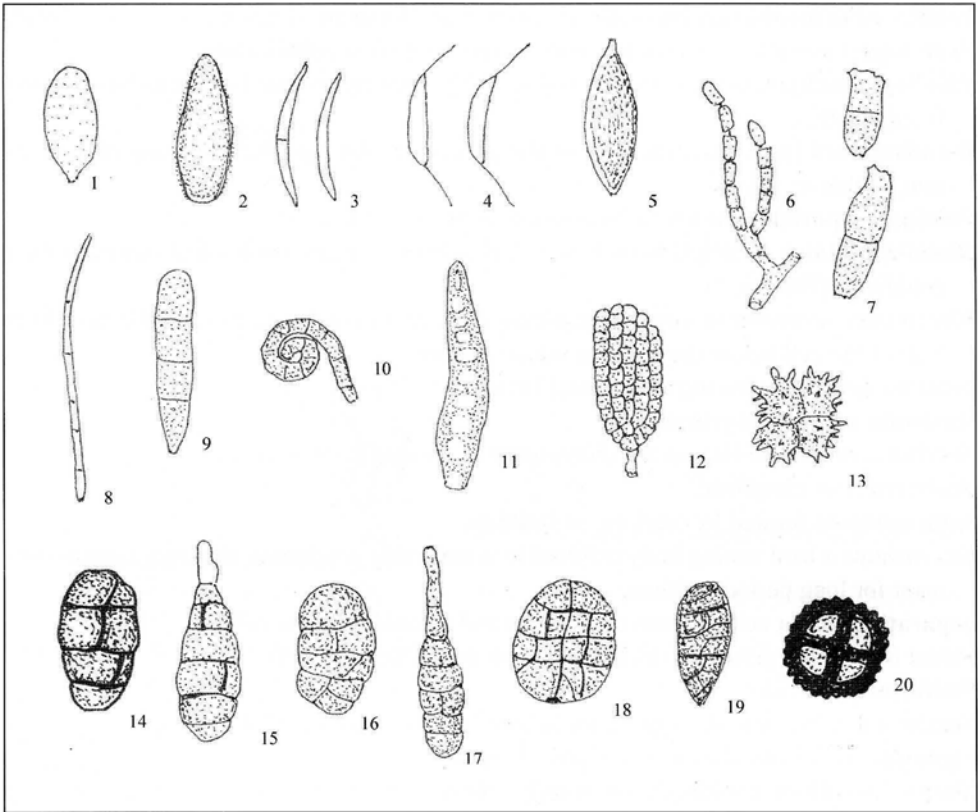


Table 4.

**Mother cell:** differentiated cell at the base of conidiophore present in some species.

**Muriform (conidia):** dyctioconidia, (Table 4: 14-19).

**Nodose (conidiophore):** geniculate, (Table 2: 7).

**Obclavate:** inversely clavate, widest at the base, (Table 4: 15).

**Obovoid:** inversely ovoid, (Table 4: 19).

**Obpyriform:** the reverse of pear-shaped.

**Obturbinate:** inversely turbinate.

**Ovoid:** like a egg with the narrower end at the top, (Table 4: 2).

**Pedicel:** a small stalk, (Table 4: 12).

**Penicillate:** like a little brush, (Table 3: 5).

**Percurrent (conidiogenous cell):** growing through the tip of the conidiogenous cell, (Table 2: 1-3).

**Periclinal:** parallel to the surface or the circumference.

**Phialidic (conidiogenous cell):** conidiogenous cell open at the end (Table 3).

**Pleomorphy:** the capacity of a fungus to exist in more than one form, usually producing more than one type of spore.

**Plerogenous:** formed on the side.

- Proliferation (conidiogenous cell):** successive development of new parts.
- Protologue:** everything associated with a name on its first publication.
- Pseudoparenchymatous:** a thick pseudotissue formed by hyphae becoming twisted and fixed together.
- Pseudoseptum (pseudosepta):** a protoplasmic or vacuolar membrane looking like a septum, (Table 4: 11).
- Pulvinate (sporodochium):** cushion-like in form (Table 1: 2, 3).
- Ramo-conidium:** an apical branch of a conidiophore which secedes and functions as a conidium, (Table 4: 7).
- Rhexolytic:** secession of conidia involving the circumscissile splitting of the periclinal wall of the cell below the basal conidium septum.
- Rostrate (conidia):** having a rostrum, (Table 4: 15, 17).
- Rostrum:** a beak-like process.
- Sarciniform:** bundle-like, as the dictyospore of *Stemphylium botryosum*.
- Scattered:** not caespitose.
- Schizogenous:** formed by cracking or splitting.
- Sclerotium:** a hard resting body resistant to unfavorable conditions, that may remain dormant for long periods of time.
- Separating cell:** a cell between a conidium and a conidiogenous cell.
- Setae:** a stiff hair, generally thick-walled and dark, (Table 1: 4-6).
- Setiform:** bristle-like.
- Setula:** a delicate hair-like appendage arising from a conidium, (Table 4: 4).
- Sigmoid:** curved like the letter S, (Table 4: 8).
- Simple (conidium, conidiophore, setae):** unbranched.
- Solitary (conidia, conisiogenous cell, conidiophore):** not aggregated.
- Spine:** a narrow sharply pointed process, (Table 4: 13).
- Sporodochium:** specialized conidia-bearing structure, in which the spore mass is supported by a superficial cushion-like mass of short conidiophores and pseudoparenchyma, (Table 1: 3).
- Stroma:** an irregular compact mass of hyphae on which or in which fructifications usually are formed.
- Subdichotomous:** approximatively dichotomous.
- Subulate:** slender and tapering to a point.
- Sympodial (conidiogenous cell):** alternate proliferation of fertile loci, (Table 2: 4-8).
- Synnema (conidiophore):** a group of conidiophores cemented together, (Table 1: 1).
- Tretic (conidiogenous cell):** producing tretoconidia by the extrusion of the inner wall through one (mono-) or several channels (poly-).
- Trichotomous:** branching into three more or less equal arms.
- Tuberculate:** having tubercles, a small wart-like process, (Table 4: 20).
- Turbinate:** like a top in form.
- Verrucose (setae, conidia):** having small rounded processes or warts.
- Verruculose:** delicately verrucose.
- Verticillate:** crowded in a rings.

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## Appendix

Species	References	Site	Substratum
<i>Alternaria alternata</i>	Mulas & al. 1991	Capo Frasca	<i>Pistacia lentiscus</i>
		Capo Mannu	<i>Pistacia lentiscus</i>
		Mortorio	<i>Pistacia lentiscus</i>
		Reulino	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	Capo Carbonara	<i>Cistus monspeliensis</i> <i>Cerantonia siliqua</i> <i>Euphorbia dendroides</i> <i>Juniperus phoenicea</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Pistacia lentiscus</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Juniperus phoenicea</i> <i>Phillyrea latifolia</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>	
<i>Alternaria tenuissima</i>	Zucconi & al. 1996	Gonnesa Torre del Sevo	<i>Arbutus unedo</i> <i>Arbutus unedo</i>
<i>Anungitea caespitosa</i>	Deplano 1	Sette Fratelli	<i>Quercus ilex</i>
<i>Anungitea fragilis</i>	Rambelli & al. 2003	Gonnesa	<i>Phillyrea angustifolia</i>
		Naracauli	<i>Pistacia lentiscus</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Phillyrea angustifolia</i>
	Mulas <sup>3</sup>	Badde Salighes	<i>Taxus baccata</i>
		Ingurtosu	<i>Phillyrea latifolia</i>
La Madonnina		<i>Ilex aquifolium</i>	
S. Caterina	<i>Olea europaea</i> var. <i>sylvestris</i>		
<i>Anungitea longicatenata</i>	Mulas <sup>3</sup>	La Madonnina	<i>Arbutus unedo</i>
<i>Anungitea uniseptata</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	S. Caterina	<i>Olea europaea</i> var. <i>sylvestris</i>
	Mulas <sup>3</sup>	Ingurtosu	<i>Pistacia lentiscus</i>
<i>Arachnophora fagicola</i>	Mulas <sup>3</sup>	Marganai	<i>Quercus ilex</i>
<i>Ardhachandra aequilatera</i>	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>

	Rambelli & al. 2003	Capo Mannu	<i>Pistacia lentiscus</i>	
		Capo S. Marco	<i>Pistacia lentiscus</i>	
		S. Caterina	<i>Pistacia lentiscus</i>	
		S. Stefano	<i>Myrtus communis</i>	
<i>Ardhachandra cristaspora</i>	Mulas <sup>3</sup>	Spargi	<i>Pistacia lentiscus</i>	
	Mulas <sup>3</sup>	Capo S. Marco	<i>Pistacia lentiscus</i>	
		S. Stefano	<i>Myrtus communis</i>	
<i>Aureobasidium pullulans</i> var. <i>pullulans</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>	
<i>Beltrania rhombica</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>	
		La Vacca	<i>Pistacia lentiscus</i>	
		S. Antioco	<i>Pistacia lentiscus</i>	
		S. Pietro	<i>Pistacia lentiscus</i>	
		Serpentara	<i>Pistacia lentiscus</i>	
	Mulas & al. 1991	Capo Mannu	<i>Pistacia lentiscus</i>	
		Mortorio	<i>Pistacia lentiscus</i>	
		Reulino	<i>Pistacia lentiscus</i>	
	Di Pietro & Rambelli 1992	Montalto di Castro	<i>Myrtus communis</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i> <i>Quercus ilex</i> <i>Quercus cerris</i>	
	Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i> <i>Pistacia lentiscus</i>	
		S. Antioco	<i>Chamaerops humilis</i> <i>Juniperus phoenicea</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>	
			Torre del Sevo	<i>Pistacia lentiscus</i>
	Pasqualetti & al. 1995	Montalto di Castro	<i>Pistacia lentiscus</i>	
		La Vacca	<i>Pistacia lentiscus</i>	
	Zucconi & al. 1996	Gonnesa	<i>Cistus monspeliensis</i>	
		Torre del Sevo	<i>Cistus monspeliensis</i>	
	Rambelli & al. 2003	Capo Mannu	<i>Pistacia lentiscus</i>	
		Capo S. Marco	<i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>	
		Caprera	<i>Cistus salvifolius</i>	
		Ingurtosu	<i>Pistacia lentiscus</i>	
		S. Antioco	<i>Chamaerops humilis</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>	
			S. Caterina	<i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>
				S. Stefano
Torre del Sevo		<i>Pistacia lentiscus</i>		
Tempesta & al. 2003		Torre del Sevo	<i>Phillyrea angustifolia</i>	
Mulas <sup>3</sup>		Asinara	<i>Pistacia lentiscus</i>	
	Capo Caccia	<i>Pistacia lentiscus</i>		
	Caprera	<i>Cistus salvifolius</i>		
	Ingurtosu	<i>Quercus ilex</i>		
	Isolotto Rosso	<i>Pistacia lentiscus</i>		
	Mortorio	<i>Pistacia lentiscus</i>		
		Piscinas	<i>Pistacia lentiscus</i>	

		Spargi	<i>Pistacia lentiscus</i>
		Su Pallosu	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Cistus monspeliensis</i> <i>Smilax aspera</i>
<i>Beltrania querna</i>	Rambelli & al. 2003	Caprera	<i>Quercus ilex</i>
		Gonnesa	<i>Quercus ilex</i>
		Ingurtosu	<i>Quercus ilex</i>
		La Madonnina	<i>Quercus ilex</i>
		Naracauli	<i>Quercus ilex</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Mulas <sup>3</sup>	Caprera	<i>Quercus ilex</i>
<i>Botrytis allii</i>	Mulas & al. 1995	Capo Carbonara	<i>Euphorbia dendroides</i>
<i>Botrytis cinerea</i>	Mulas & al. 1990	La Vacca	<i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus incanus</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Gonnesa	<i>Myrtus communis</i> <i>Quercus ilex</i>
		La Madonnina	<i>Cistus monspeliensis</i>
		Santa Caterina	<i>Myrtus communis</i>
		Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Camposporium antennatum</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
<i>Camposporium pellucidum</i>	Mulas <sup>3</sup>	La Madonnina	<i>Quercus ilex</i>
<i>Chalara aurea</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
<i>Chalara brevispora</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Chalara cylindrosperma</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Chalara microspora</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Chloridium botryoideum</i> var. <i>botryoideum</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Rambelli & al. 2003	S. Caterina	<i>Myrtus communis</i>
<i>Chloridium virescens</i> var. <i>virescens</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Gonnesa	<i>Cistus monspeliensis</i> <i>Myrtus communis</i>
<i>Chuppia sarcinifera</i>	Mulas <sup>3</sup>	Ingurtosu	<i>Pistacia lentiscus</i>
<i>Circinotrichum maculiforme</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Frasca	<i>Pistacia lentiscus</i>
		Castello Medusa	<i>Pistacia lentiscus</i>
		Mortorio	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	Capo Carbonara	<i>Ceratonina siliqua</i>
		S. Antioco	<i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Cistus incanus</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>

		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Pistacia lentiscus</i>
	Rambelli & al. 2003	Buggerru	<i>Pistacia lentiscus</i>
		Capo Mannu	<i>Juniperus oxycedrus</i> ssp. <i>macrocarpa</i>
		Capo S. Marco	<i>Juniperus phoenicea</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Caprera	<i>Arbutus unedo</i> <i>Cistus salvifolius</i> <i>Quercus ilex</i>
		Gonnesa	<i>Myrtus communis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Quercus ilex</i>
		Ingurtosu	<i>Arbutus unedo</i> <i>Pistacia lentiscus</i> <i>Quercus ilex</i> <i>Smilax aspera</i>
		S. Caterina	<i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>
		S. Stefano	<i>Olea europaea</i> var. <i>sylvestris</i> <i>Pistacia lentiscus</i>
			Torre del Sevo
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Piscinas	<i>Arbutus unedo</i> <i>Juniperus phoenicea</i>
		Spargi	<i>Pistacia lentiscus</i> <i>Smilax aspera</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Smilax aspera</i>
<i>Circinotrichum olivaceum</i>	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i>
<i>Circinotrichum papakurae</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Circinotrichum rigidum</i>	Zucconi & al. 1996	Torre del Sevo	<i>Arbutus unedo</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Cladosporium acaciicola</i>	Mulas <sup>3</sup>	Ingurtosu	<i>Quercus ilex</i>
		S. Caterina	<i>Myrtus communis</i>
<i>Cladosporium apicale</i>	Zucconi & al. 1996	Torre del Sevo	<i>Arbutus unedo</i>
<i>Cladosporium cladosporioides</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		La Vacca	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Frasca	<i>Pistacia lentiscus</i>

	Castello Medusa	<i>Pistacia lentiscus</i>
	Mortorio	<i>Pistacia lentiscus</i>
	Reulino	<i>Pistacia lentiscus</i>
Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i> <i>Euphorbia dendroidea</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Pistacia lentiscus</i>
	S. Antioco	<i>Chamaerops humilis</i> <i>Juniperus phoenicea</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>
	Torre del Sevo	<i>Chamaerops humilis</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
	Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
Rambelli & al. 2003	Capo Mannu	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
	Capo S. Marco	<i>Cistus incanus</i> <i>Juniperus phoenicea</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
	Caprera	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Cistus salvifolius</i> <i>Pistacia lentiscus</i> <i>Quercus ilex</i>
	Ingurtosu	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i> <i>Quercus ilex</i> <i>Rosmarinus officinalis</i> <i>Smilax aspera</i> <i>Thymelaea tartonraira</i>
	La Madonnina	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Ilex aquifolium</i> <i>Quercus ilex</i> <i>Quercus pubescens</i>

		Naracauli	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		S. Stefano	<i>Arbutus unedo</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Cistus monspeliensis</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Asinara	<i>Pistacia lentiscus</i>
		Badde Salighes	<i>Taxus baccata</i>
		Buggerru	<i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Gonnesa	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Isolotto Rosso	<i>Pistacia lentiscus</i>
		Monte Spada	<i>Taxus baccata</i>
		Piscinas	<i>Arbutus unedo</i> <i>Cistus salvifolius</i> <i>Juniperus phoenicea</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		S. Caterina	<i>Pistacia lentiscus</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		Spargi	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Thymelaea tartonraira</i>
		Su Pallosu	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Chamaerops humilis</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
<i>Cladosporium herbarum</i>	Mulas & al. 1990	La Vacca	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Mannu	<i>Pistacia lentiscus</i>
		Mortorio	<i>Pistacia lentiscus</i>
		Reulino	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i> <i>Euphorbia dendroides</i> <i>Juniperus phoenicea</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Pistacia lentiscus</i>

		S. Antioco	<i>Chamaerops humilis</i> <i>Phillyrea latifolia</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
	Zucconi & al. 1996	Gonnesa	<i>Cistus incamus</i> <i>Cistus monspeliensis</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus incamus</i> <i>Phillyrea angustifolia</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	S. Antioco	<i>Chamaerops humilis</i> <i>Phillyrea latifolia</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Gonnesa	<i>Myrtus communis</i>
		Isolotto Rosso	<i>Pistacia lentiscus</i>
		La Madonnina	<i>Arbutus unedo</i>
		S. Caterina	<i>Myrtus communis</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		S. Stefano	<i>Myrtus communis</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		Su Pallosu	<i>Pistacia lentiscus</i>
<i>Cladosporium macrocarpum</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Cladosporium uniseptosporum</i>	Mulas <sup>3</sup>	Gonnesa	<i>Myrtus communis</i>
<i>Codinea</i> state of <i>Chaetosphaeria callimorpha</i>	Rambelli & al. 2003	Caprera	<i>Quercus ilex</i>
		S. Caterina	<i>Myrtus communis</i>
	Mulas <sup>3</sup>	Capo S. Marco	<i>Pistacia lentiscus</i>
<i>Conoplea mangelotii</i>	Mulas <sup>3</sup>	La Madonnina	<i>Quercus ilex</i>
<i>Corynespora cassicola</i>	Mulas <sup>3</sup>	Capo Mannu	<i>Juniperus phoenicea</i>
<i>Cryptocoryneum condensatum</i>	Mulas & al. 1995	S. Antioco	<i>Pistacia lentiscus</i>
	Rambelli & al. 2003	S. Antioco	<i>Pistacia lentiscus</i>
<i>Cryptocoryneum rilstonii</i>	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Mulas <sup>3</sup>	Capo Carbonara	<i>Pistacia lentiscus</i>
		Caprera	<i>Quercus ilex</i>
		Gonnesa	<i>Quercus ilex</i>
		Ingurtosu	<i>Quercus ilex</i>
		S. Stefano	<i>Pistacia lentiscus</i>
<i>Curvularia clavata</i>	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Curvularia pallascens</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Cylindrotrichum oligospermum</i>	Mulas & al. 1995	S. Antioco	<i>Chamaerops humilis</i> <i>Juniperus phoenicea</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>



	Rambelli & al. 2003	Buggerru	<i>Pistacia lentiscus</i>
		Capo Mannu	<i>Pistacia lentiscus</i>
		Capo S. Marco	<i>Pistacia lentiscus</i>
		La Maddonnina	<i>Ilex aquifolium</i> <i>Quercus ilex</i>
		Naracauli	<i>Phillyrea latifolia</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
Mulas <sup>3</sup>	Ingurtosu	<i>Phillyrea latifolia</i>	
	Torre del Sevo	<i>Smilax aspera</i>	
<i>Dactylaria chrysosperma</i>	Mulas & al. 1995	S. Antioco	<i>Chamaerops humilis</i>
<i>Dactylaria fusiformis</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Dactylaria obtriangularia</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Dactylaria parvispora</i>	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i>
		Torre del Sevo	<i>Phillyrea angustifolia</i>
	Rambelli & al. 2003	Gonnesa	<i>Arbutus unedo</i>
	Mulas <sup>3</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
<i>Dicyma ovalispora</i>	Mulas <sup>3</sup>	Santo Stefano	<i>Olea europaea</i> var. <i>sylvestris</i>
<i>Dicyma olivacea</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Domingoella asterinarum</i>	Mulas <sup>3</sup>	S. Caterina	<i>Myrtus communis</i> <i>Pistacia lentiscus</i>
<i>Embellisia chlamydospora</i>	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Endophragmiella boewei</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Frasca	<i>Pistacia lentiscus</i>
		Castello Medusa	<i>Pistacia lentiscus</i>
		Reulino	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	Capo Carbonara	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Cistus monspeliensis</i> <i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
	Rambelli & al. 2003	Buggerru	<i>Pistacia lentiscus</i>
		Capo S. Marco	<i>Pistacia lentiscus</i>
		Caprera	<i>Cistus salvifolius</i> <i>Pistacia lentiscus</i>
		Gonnesa	<i>Pistacia lentiscus</i>
		Ingurtosu	<i>Pistacia lentiscus</i>
		Naracauli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		S. Caterina	<i>Pistacia lentiscus</i>
		S. Stefano	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Pistacia lentiscus</i>
Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>	

	Mulas <sup>3</sup>	Isolotto Rosso	<i>Pistacia lentiscus</i>
		Piscinas	<i>Pistacia lentiscus</i>
		Spargi	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Pistacia lentiscus</i> <i>Smilax aspera</i>
<i>Epicoccum nigrum</i>	Mulas & al. 1990	Serpentara	<i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Serpentara	<i>Pistacia lentiscus</i>
<i>Gliomastix macrocylindrica</i>	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
		Rambelli & al. 2003	Capo Mannu
	Rambelli & al. 2003	Capo S. Marco	<i>Pistacia lentiscus</i>
		S. Stefano	<i>Pistacia lentiscus</i>
<i>Gonytrichum chlamydosporium</i>	Mulas <sup>3</sup>	Caprera	<i>Cistus salvifolius</i>
		Marganai	<i>Quercus ilex</i>
<i>Gyrothrix citricola</i>	Rambelli & al. 2003	La Madonnina	<i>Quercus ilex</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Spargi	<i>Thymelaea tartonraira</i>
<i>Gyrothrix grisea</i>	Mulas & al. 1991	Capo Mannu	<i>Pistacia lentiscus</i>
		Castello Medusa	<i>Pistacia lentiscus</i>
		Reulino	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
		Mulas & al. 1995	Capo Carbonara
	Mulas & al. 1995	S. Antioco	<i>Chamaerops humilis</i> <i>Juniperus phoenicea</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Phillyrea angustifolia</i>
	Rambelli & al. 2003	Buggerru	<i>Olea europaea</i> var. <i>sylvestris</i>
		Capo Mannu	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Gonnesa	<i>Phillyrea angustifolia</i>
		La Madonnina	<i>Ilex aquifolium</i>
		S. Caterina	<i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Isolotto Rosso	<i>Pistacia lentiscus</i>
		Piscinas	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Su Pallosu	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus incanus</i> <i>Smilax aspera</i> <i>Rosmarinus officinalis</i>

<i>Gyrothrix macroseta</i>	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i>
		Torre del Sevo	<i>Arbutus unedo</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Rambelli & al. 2003	Gonnesa	<i>Arbutus unedo</i>
<i>Gyrothrix microsperma</i>	Zucconi & al. 1996	Torre del Sevo	<i>Cistus monspeliensis</i>
<i>Gyrothrix podosperma</i>	Zucconi & al. 1996	Gonnesa	<i>Cistus incanus</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Pistacia lentiscus</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Rambelli & al. 2003	Capo Mannu	<i>Cistus incanus</i>
		Gonnesa	<i>Cistus incanus</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Ingurtosu	<i>Smilax aspera</i>
		S. Caterina	<i>Juniperus phoenicea</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Mulas <sup>3</sup>	Piscinas	<i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>
		Spargi	<i>Smilax aspera</i>
<i>Gyrothrix ramosa</i>	Rambelli & al. 2003	S. Caterina	<i>Olea europaea</i> var. <i>sylvestris</i>
		S. Stefano	<i>Pistacia lentiscus</i>
<i>Gyrothrix verticillata</i>	Zucconi & al. 1996	Torre del Sevo	<i>Arbutus unedo</i> <i>Phillyrea angustifolia</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Mulas <sup>3</sup>	Piscinas	<i>Pistacia lentiscus</i>
<i>Hansfordia pulvinata</i>	Zucconi & al. 1996	Gonnesa	<i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Rambelli & al. 2003	Gonnesa	<i>Phillyrea angustifolia</i>
		S. Stefano	<i>Olea europaea</i> var. <i>sylvestris</i>
		Piscinas	<i>Pistacia lentiscus</i>
Torre del Sevo	<i>Smilax aspera</i>		
<i>Helicosporium pannosum</i>	Mulas <sup>3</sup>	La Madonnina	<i>Cistus monspeliensis</i>
<i>Helicosporium vegetum</i>	Mulas <sup>3</sup>	Gadoni	<i>Quercus ilex</i>
<i>Kylindria keitae</i>	Mulas <sup>3</sup>	S. Antioco	<i>Juniperus phoenicea</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>
<i>Menispora ciliata</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Caprera	<i>Quercus ilex</i>
		Gonnesa	<i>Quercus ilex</i>
	Mulas <sup>3</sup>	La Madonnina	<i>Quercus ilex</i>
<i>Minimidochium setosum</i>	Mulas & al. 1995	S. Antioco	<i>Chamaerops humilis</i>
<i>Nakataea fusispora</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Buggerru	<i>Pistacia lentiscus</i>
<i>Oidiodendron griseum</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Oncopodiella trigonella</i>	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
<i>Periconia byssoides</i>	Mulas & al. 1995	Torre del Sevo	<i>Chamaerops humilis</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Periconia cookei</i>	Mulas <sup>3</sup>	La Madonnina	<i>Ilex aquifolium</i>
<i>Periconia digitata</i>	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>

<i>Periconia echinochloae</i>	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Periconia minutissima</i>	Mulas & al. 1995	S. Antioco	<i>Chamaerops humilis</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Phillyrea angustifolia</i>
<i>Phaeoramularia hachijoensis</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Mannu	<i>Pistacia lentiscus</i>
		Tavolara	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i> <i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Rosmarinus officinalis</i>
	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i> <i>Pistacia lentiscus</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Buggerru	<i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea latifolia</i> <i>Pistacia lentiscus</i>
		Capo Mannu	<i>Juniperus oxycedrus</i> ssp. <i>macrocarpa</i> <i>Pistacia lentiscus</i>
		Capo S. Marco	<i>Cistus incanus</i> <i>Pistacia lentiscus</i>
		Caprera	<i>Cistus salvifolius</i> <i>Quercus ilex</i>
		Gonnesa	<i>Arbutus unedo</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
Ingurtosu		<i>Arbutus unedo</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Smilax aspera</i> <i>Thymelaea tartonraira</i>	
La Madonnina		<i>Arbutus unedo</i> <i>Ilex aquifolium</i> <i>Quercus ilex</i>	
Naracauli		<i>Pistacia lentiscus</i> <i>Quercus ilex</i>	
S. Caterina		<i>Myrtus communis</i>	

		S. Stefano	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Badde Salighes	<i>Taxus baccata</i>
		Capo Frasca	<i>Pistacia lentiscus</i>
		Piscinas	<i>Cistus salvifolius</i> <i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
		Spargi	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i> <i>Smilax aspera</i> <i>Thymelaea tartanraira</i>
	Torre del Sevo	<i>Arbutus unedo</i> <i>Chamaerops humilis</i> <i>Pistacia lentiscus</i> <i>Smilax aspera</i>	
<i>Phaeostalagmus cyclosporus</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
<i>Phialocephala humicola</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Mulas <sup>3</sup>	Badde Salighes	<i>Taxus baccata</i>
Spargi		<i>Juniperus phoenicea</i>	
<i>Pleurophragmium triseptatum</i>	Mulas <sup>3</sup>	Marganai	<i>Quercus ilex</i>
		S. Stefano	<i>Arbutus unedo</i>
<i>Polyscytalum gracilisporum</i>	Rambelli & al. 2003	La Madonnina	<i>Cistus monspeliensis</i>
<i>Pseudodictyosporium wauense</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Mulas <sup>3</sup>	Caprera	<i>Quercus ilex</i>
		Piscinas	<i>Pistacia lentiscus</i>
		S. Stefano	<i>Pistacia lentiscus</i>
Spargi	<i>Juniperus phoenicea</i>		
<i>Rhinocladiella atrovirens</i>	Mulas <sup>3</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
<i>Rhinocladiella ellisii</i>	Mulas & al. 1995	Capo Carbonara	<i>Olea europaea</i> var. <i>sylvestris</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Cistus monspeliensis</i> <i>Phillyrea angustifolia</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Rambelli & al. 2003	Buggerru	<i>Phillyrea latifolia</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		Torre del Sevo	<i>Chamaerops humilis</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	La Madonnina	<i>Quercus ilex</i>
Capo Mannu		<i>Juniperus oxycedrus</i> ssp. <i>macrocarpa</i>	
Capo S. Marco		<i>Chamaerops humilis</i>	
	S. Caterina	<i>Olea europaea</i> var. <i>sylvestris</i>	

		Torre del Sevo	<i>Smilax aspera</i>
<i>Rutola graminis</i>	Mulas & al. 1995	Torre del Sevo	<i>Chamaerops humilis</i> <i>Cistus monspeliensis</i>
	Mulas <sup>3</sup>	Gonnesa	<i>Cistus monspeliensis</i>
<i>Scolecobasidium constrictum</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	C. Carbonara	<i>Ceratonia siliqua</i> <i>Pistacia lentiscus</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Arbutus unedo</i> <i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Naracauli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Chamaerops humilis</i> <i>Pistacia lentiscus</i>
	Mulas <sup>3</sup>	Buggerru	<i>Pistacia lentiscus</i>
		Capo S. Marco	<i>Pistacia lentiscus</i>
		Caprera	<i>Cistus salvifolius</i>
Ingurtosu		<i>Arbutus unedo</i> <i>Pistacia lentiscus</i>	
La Madonnina		<i>Quercus ilex</i>	
Torre del Sevo		<i>Smilax aspera</i>	
<i>Scolecobasidium humicola</i>	Zucconi & al. 1996	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Scolecobasidium longiphorum</i>	Rambelli & al. 2003	Capo S. Marco	<i>Cistus incanus</i>
		Mulas <sup>3</sup>	Capo S. Marco
	Caprera	<i>Quercus ilex</i>	
	Ingurtosu	<i>Arbutus unedo</i> <i>Phillyrea latifolia</i>	
	La Madonnina	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i>	
<i>Scolecobasidium tshawytschae</i>	Mulas & al. 1995	S. Antioco	<i>Chamaerops humilis</i> <i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Pistacia lentiscus</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Capo S. Marco	<i>Pistacia lentiscus</i>
		Naracauli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Pistacia lentiscus</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Capo S. Marco	<i>Pistacia lentiscus</i>
		Ingurtosu	<i>Pistacia lentiscus</i>
La Madonnina		<i>Quercus ilex</i>	
		S. Caterina	<i>Pistacia lentiscus</i>

<i>Selenodriella fertilis</i>	Mulas & al. 1995	Capo Carbonara	<i>Cistus monspeliensis</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		S. Antioco	<i>Chamaerops humilis</i>
		Torre del Sevo	<i>Phillyrea angustifolia</i> <i>Pistacia lentiscus</i>
Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>	
<i>Selenosporella curvispora</i>	Zucconi & al. 1996	Gonnesa	<i>Cistus monspeliensis</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Rambelli & al. 2003	Caprera	<i>Pistacia lentiscus</i>
		Ingurtosu	<i>Pistacia lentiscus</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Mulas <sup>3</sup>	Buggerru	<i>Pistacia lentiscus</i>
Gonnesa		<i>Cistus monspeliensis</i> <i>Quercus ilex</i>	
<i>Septonema hormiscium</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Solosympiella clavata</i>	Mulas & al. 1995	S. Antioco	<i>Pistacia lentiscus</i>
<i>Spegazzinia parkeri</i>	Mulas <sup>3</sup>	Spargi	<i>Phillyrea angustifolia</i>
<i>Spegazzinia tessartha</i>	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
		Capo S. Marco	<i>Pistacia lentiscus</i>
<i>Sporidesmium adscendens</i>	Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i>
<i>Sporidesmium coffeicola</i>	Mulas <sup>3</sup>	Santa Caterina	<i>Olea europaea</i> var. <i>sylvestris</i>
<i>Sporidesmium dioscoreae</i>	Mulas & al. 1995	Capo Carbonara	<i>Juniperus phoenicea</i> <i>Pistacia lentiscus</i>
<i>Sporidesmium nodipes</i>	Mulas & al. 1995	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Sporidesmium parvum</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
<i>Stachybotrys atra</i>	Mulas & al. 1995	Capo Carbonara	<i>Euphorbia dendroides</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		S. Antioco	<i>Phillyrea latifolia</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Ingurtosu	<i>Cistus incanus</i> <i>Phillyrea angustifolia</i> <i>Rosmarinus officinalis</i>
Piscinas		<i>Juniperus oxycedrus</i> ssp. <i>macrocarpa</i> <i>Phillyrea angustifolia</i>	
<i>Stachybotrys chartarum</i>	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Stemphylium botryosum</i>	Zucconi & al. 1996	Torre del Sevo	<i>Arbutus unedo</i> <i>Cistus monspeliensis</i>
		Mulas <sup>3</sup>	Capo Frasca
	Mulas <sup>3</sup>	Capo Mannu	<i>Pistacia lentiscus</i>
		Gonnesa	<i>Cistus monspeliensis</i>
		Ingurtosu	<i>Phillyrea angustifolia</i> <i>Rosmarinus officinalis</i>
		Isolotto Rosso	<i>Pistacia lentiscus</i>
		Mortorio	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
		Spargi	<i>Phillyrea angustifolia</i>
<i>Stemphylium sarciniforme</i>	Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i> <i>Euphorbia dendroides</i>
		Torre del Sevo	<i>Pistacia lentiscus</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>

	Mulas <sup>3</sup>	Capo Mannu	<i>Pistacia lentiscus</i>
<i>Stemphylium vesicarium</i>	Mulas <sup>3</sup>	Gonnesa	<i>Pistacia lentiscus</i>
		Spargi	<i>Thymelaea tartonraira</i>
<i>Stigmina fici</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Subulispora britannica</i>	Deplano <sup>1</sup>	Sette Fratelli	<i>Quercus ilex</i>
		Rambelli & al. 2003	Naracauli
	La Madonnina		<i>Ilex aquifolium</i> <i>Quercus ilex</i>
	Mulas <sup>3</sup>	Ingurtosu	<i>Pistacia lentiscus</i>
<i>Torula ellisii</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
<i>Torula herbarum</i>	Mulas & al. 1995	Capo Carbonara	<i>Ceratonia siliqua</i> <i>Cistus monspeliensis</i> <i>Euphorbia dendroides</i> <i>Juniperus phoenicea</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		S. Antioco	<i>Chamaerops humilis</i> <i>Olea europaea</i> var. <i>sylvestris</i> <i>Phillyrea latifolia</i>
		Torre del Sevo	<i>Rosmarinus officinalis</i>
	Rambelli & al. 2003	S. Antioco	<i>Phillyrea latifolia</i> <i>Olea europaea</i> var. <i>sylvestris</i>
		Torre del Sevo	<i>Rosmarinus officinalis</i>
	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	<i>Torula herbarum</i> f. <i>quaternella</i>	Pasqualetti & al. 1999 b	S. Barzolu
Tempesta & al. 2003		Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Trimmatostroma betulinum</i>	Mulas & al. 1995	Capo Carbonara	<i>Cistus monspeliensis</i> <i>Juniperus phoenicea</i>
		S. Antioco	<i>Olea europaea</i> var. <i>sylvestris</i>
		Torre del Sevo	<i>Cistus monspeliensis</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	<i>Trimmatostroma salicis</i>	Zucconi & al. 1996	Gonnesa
Torre del Sevo			<i>Cistus monspeliensis</i>
Mulas <sup>3</sup>		Buggerru	<i>Cistus monspeliensis</i>
		Capo Mannu	<i>Rosmarinus officinalis</i>
		Ingurtosu	<i>Cistus incanus</i> <i>Cistus monspeliensis</i> <i>Quercus ilex</i>
		S. Caterina	<i>Cistus monspeliensis</i>
			<i>Olea europaea</i> var. <i>sylvestris</i>
<i>Triposporium elegans</i>		Deplano <sup>1</sup>	Sette Fratelli
	Rambelli & al. 2003		La Madonnina
<i>Ulocladium alternariae</i>	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Caprera	<i>Cistus salvifolius</i>
<i>Ulocladium atrum</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Pelliccia <sup>2</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
	Mulas <sup>3</sup>	Caprera	<i>Cistus salvifolius</i>
<i>Ulocladium botrytis</i>	Zucconi & al. 1996	Gonnesa	<i>Cistus monspeliensis</i>
		Torre del Sevo	<i>Cistus monspeliensis</i>
<i>Ulocladium consortiale</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>



	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Ulocladium oudemansii</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
<i>Ulocladium tuberculatum</i>	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
<i>Verticicladium trifidum</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Frasca	<i>Pistacia lentiscus</i>
		Castello Medusa	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	Capo Carbonara	<i>Olea europaea</i> var. <i>sylvestris</i>
			<i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Phillyrea angustifolia</i>
	Mulas <sup>3</sup>	Capo Carbonara	<i>Euphorbia dendroides</i>
			<i>Pistacia lentiscus</i>
	S. Stefano	<i>Olea europaea</i> var. <i>sylvestris</i>	
<i>Zygosporium echinosporum</i>	Mulas & al. 1995	S. Antioco	<i>Olea europaea</i> var. <i>sylvestris</i>
	Mulas <sup>3</sup>	Torre del Sevo	<i>Pistacia lentiscus</i>
<i>Zygosporium gibbum</i>	Mulas & al. 1990	Cavoli	<i>Pistacia lentiscus</i>
		S. Antioco	<i>Pistacia lentiscus</i>
		S. Pietro	<i>Pistacia lentiscus</i>
		Serpentara	<i>Pistacia lentiscus</i>
	Mulas & al. 1991	Capo Frasca	<i>Pistacia lentiscus</i>
		Mortorio	<i>Pistacia lentiscus</i>
		Reulino	<i>Pistacia lentiscus</i>
	Mulas & al. 1995	S. Antioco	<i>Olea europaea</i> var. <i>sylvestris</i>
			<i>Phillyrea latifolia</i>
			<i>Pistacia lentiscus</i>
		Capo Carbonara	<i>Ceratonia siliqua</i>
			<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Phillyrea angustifolia</i>
			<i>Pistacia lentiscus</i>
	Zucconi & al. 1996	Gonnesa	<i>Pistacia lentiscus</i>
		Torre del Sevo	<i>Arbutus unedo</i>
			<i>Cistus monspeliensis</i>
			<i>Phillyrea angustifolia</i>
			<i>Pistacia lentiscus</i>
	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>
Rambelli & al. 2003	Capo S. Marco	<i>Pistacia lentiscus</i>	
	Caprera	<i>Arbutus unedo</i>	
		<i>Cistus salvifolius</i>	
		<i>Pistacia lentiscus</i>	
		<i>Quercus ilex</i>	
	Gonnesa	<i>Pistacia lentiscus</i>	
	Ingurtosu	<i>Pistacia lentiscus</i>	
		<i>Smilax aspera</i>	
	S. Antioco	<i>Olea europaea</i> var. <i>sylvestris</i>	
		<i>Pistacia lentiscus</i>	
S. Stefano	<i>Arbutus unedo</i>		
	<i>Olea europaea</i> var. <i>sylvestris</i>		
	<i>Pistacia lentiscus</i>		
	Torre del Sevo	<i>Phillyrea angustifolia</i>	
		<i>Pistacia lentiscus</i>	

	Tempesta & al. 2003	Torre del Sevo	<i>Phillyrea angustifolia</i>
	Tempesta & al. 2005	Torre del Sevo	<i>Chamaerops humilis</i>
	Mulas <sup>3</sup>	Buggerru	<i>Pistacia lentiscus</i>
		Isolotto Rosso	<i>Pistacia lentiscus</i>
		Spargi	<i>Pistacia lentiscus</i> <i>Smilax aspera</i>
		Piscinas	<i>Pistacia lentiscus</i>
<i>Zygosporium minus</i>	Mulas <sup>3</sup>	Torre del Sevo	<i>Smilax aspera</i>
<i>Zygosporium mycophilum</i>	Pasqualetti & al. 1999 b	S. Barzolu	<i>Myrtus communis</i>

<sup>1</sup> Deplano E. 1999-2000 – Analisi spazio-temporale della successione microfungina in *Quercus ilex* L. Tesi di Laurea. Facoltà di Scienze Matematiche Fisiche e Naturali – Scienze Biologiche. Università degli Studi di Cagliari.

<sup>2</sup> Pelliccia O. 2001-2002 – Caratterizzazione strutturale della comunità microfungina associata alla lettiera di *Pistacia lentiscus* in un ecosistema a macchia mediterranea. Tesi di Laurea. Facoltà di Scienze Matematiche Fisiche e Naturali – Scienze Biologiche. Università degli Studi della Tuscia, Viterbo.

<sup>3</sup> Mulas B. – Not published researches.

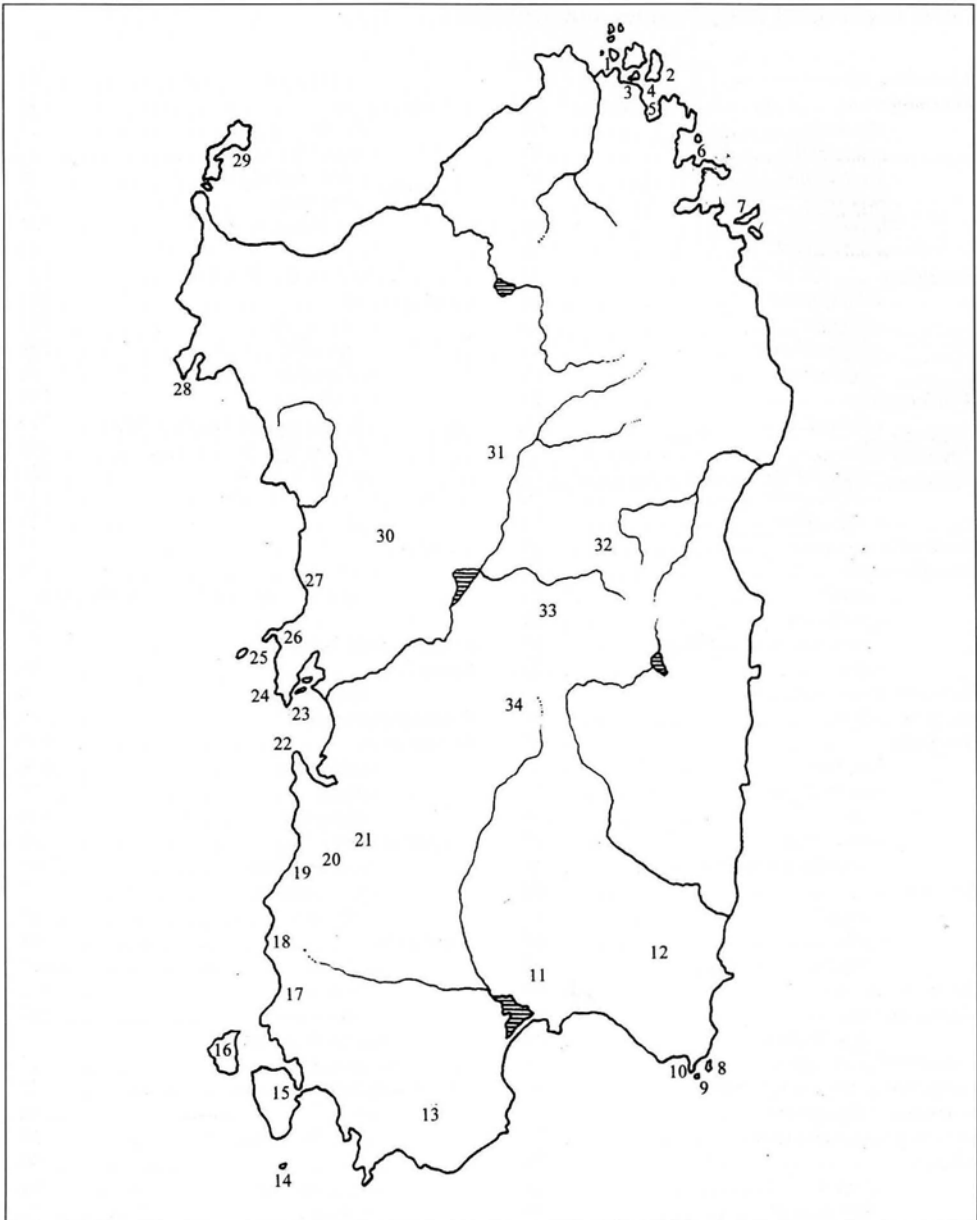


Fig. 133 - Sardinian sampling sites. 1 - Spargi; 2 - Caprera; 3 - Santo Stefano; 4 - Isolotto Rosso; 5 - Reulino; 6 - Mortorio; 7 - Tavolara; 8 - Serpentara; 9 - Cavoli; 10 - Capo Carbonara; 11 - San Barzolu; 12 - Sette Fratelli; 13 - Marganai; 14 - La Vacca; 15 - Sant'Antioco; 16 - San Pietro; 17 - Gonnese; 18 - Buggerru; 19 - Piscinas; 20 - Ingurtosu; 21 - Naracàuli; 22 - Capo Frasca; 23 - Capo San Marco; 24 - Torre del Sevo; 25 - Capo Mannu; 26 - Su Pallosu; 27 - Santa Caterina; 28 - Capo Caccia; 29 - Asinara; 30 - La Maddonnina; 31 - Bàdde Salighes; 32 - Monte Spada; 33 - Gadoni; 34 - Castello Medusa.

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