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Dematiaceous *Hyphomycetes* from *Quercus suber* litter

Abstract

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Twelve species of Dematiaceous *Hyphomycetes* found on litter of *Quercus suber* are described. A new combination *Repetophragma lignicola* from *Endophragmiella lignicola* is proposed.

Key words: Microfungi, saprotroph, litter.

Introduction

With this contribution we propose an analysis of Dematiaceous *Hyphomycetes* colonizing a hard litter to decompose like *Quercus suber*. This is only a first approach and others will follow with the purpose to give informations on the microfungi inhabiting the litter of this member of mediterranean maquis and to point out eventual cases of fungal specialization.

Material and methods

The techniques utilized in previous works were applied with the main purpose to obtain single pictures of all the morphological characters employed as base for drawings respecting the original dimensions (Rambelli & Ciccarone 2008). Samples were collected on April 2011, preserved in moist chamber and studied with direct observation.

The study area

The stand studied is not a natural one but planted about 50 years ago for the bark production. In these last 15 years many plants typical of Mediterranean maquis were growing spontaneously increasing a naturalization of the area. Actually the most common species growing as underwood is *Cystus inchanus*. Some *Pistacia lentiscus* shrubs are growing with difficulties under the *Q. suber* shading almost all the area.

TAXONOMY

Repetophragma Subramanian, 1992.

The genus was erected by Subramanian (1992) in a reassessment of the genus *Sporidesmium* and related taxa and to separate in the new genus *Repetophragma* those species characterized by conidiophores brown, simple, not branched, septate, with conidiogenous cells integrated, apical, annellate for repeated percurrent proliferation and phragmoconidia solitary and euseptate.

The Subramanian genus diagnosis is here reported:

Repetophragma Subramanian, 1992.

Hyphomycete dematiacea conidia ganglica producentes. Conidiophora fusca, non ramosa, septata. Conidia acrogena, solitaria, euseptata, trunca ad basim, sicca.

Species typica: *Repetophragma biseptata* (M.B. Ellis) Subramanian, 1992.

Repetophragma lignicola (Hughes) Rambelli n. comb., 2011 (Fig. 1)

Basionym: *Endophraggiella lignicola* Hughes, 1979.

Colonies inconspicuous, composed by isolated conidiophores. Conidiophores macrone-matous, mononematous, unbranched, brown, clearer towards the apex, septate, smooth,

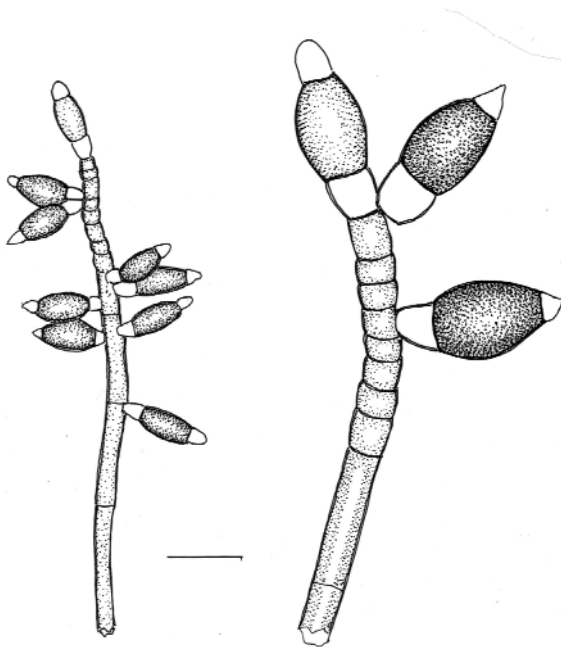


Fig. 1. *Repetophragma lignicola* (Hughes) Rambelli. Conidiophores with annellate conidiogenous cells and conidia. Bar: left 15 μ m, right 30 μ m.

115-130×4-5 µm conidiogenous cell included. Conidiogenous cells monoblastic, terminal, clear brown, elongating percurrently with several and regular annellations, up to 45×4 µm. Conidia acrogenous, but remaining adherent to annellations, fusiform, 2-septate, with central cell dark-brown, apical and basal cells hyaline, with truncate base, 13-16×5 µm, central cell 7-9×5 µm.

Endophragmiella lignicola was proposed as new species by Hughes (1979). According to the Author “branching of conidiophores and conidium septation are considered to have little or no generic value”. Nevertheless, after the Subramanian reassessment the species, for their typical annellate conidiogenous cells and the two septate conidia, can be more accommodate in the genus *Repetophragma*. We have found the species on dead leaves of *Quercus suber* in the surroundings of Tuscania, Central Italy.

Repetophragma goidanichii (Rambelli) W.P.Wu, 2005 (Fig. 2)

Type species: *Repetophragma biseptata* (M.B. Ellis) Subramanian, 1992.

Colonies composed by isolated conidiophores. Conidiophores macronematous, monone-matous, unbranched, dark-brown, clearer towards the apex, smooth, not lageniform at the base, erect or gently flexuous, septate, up to 200 µm long conidiogenous cell included, ×5 µm wide near the base. Conidiogenous cells monoblastic, integrated, terminal, growing percurrently and with several annellations, brown, clear towards the apex. Conidia solitary, rod shaped, clear brown, 7-septate, with apical and base cells clearer, commonly persistently laterally attached in proximity of an annellation, smooth, 47×7 µm.

On dead leaves of *Quercus suber*, Tuscania, Central Italy.

A previous strain of *R. goidanichii* found on dead leaves of *Arbutus unedo* in Pantelleria island presents conidia 6-septate up to 41 µm long and higher conidiophores up to 290 µm long.

Repetophragma inflatum (Berk. & Ravenel) W.P. Wu, 2005 (Fig. 3)

Type species: *Repetophragma biseptata* (M.B. Ellis) Subramanian, 1992.

Colonies inconspicuous, composed by isolated or tufted conidiophores. Conidiophores macronematous, monone-matous, frequently flexuous, composed by several regular cells, brown chestnut brown, with smooth walls and septa clearly visible, 500-600×8-9 µm. Conidiogenous cells percurrent, without calyciform structures, but with very frequent annellations, about one for every cell. Conidia straight, fusiform, rarely sigmoid, 3-eusep-tate, frequently slightly constricted at the septa, with trunked base cell and elongated apical cell hyaline, second cell from the base brown, dark-brown, third cell clear brown, smooth, 50-55×15 µm.

On dead leaves of *Quercus suber*. Tuscania, Central Italy.

Minimelanolocus Castaneda Ruiz & Heredia, 2001

The genus was erected by Castaneda Ruiz & Heredia (2001) to separate from the genus *Pseudospiropes* Ellis (1971) the species with euseptate conidia. The Authors considered

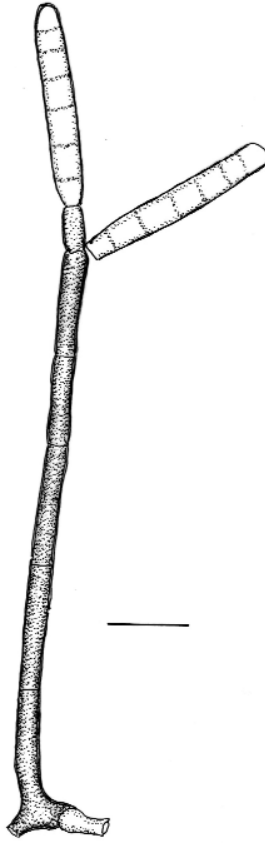


Fig. 2. *Repetophragma goidanichii*, conidiophores and conidia. Bar 18 μ m.

the importance of the conidiogenous loci morphology pointing out the differences between protuberant and flat scars, characters, in our opinion more important for species distinction, and to include in the new genus, by the Author, species with sympodial and percurrent conidiogenous cells.

The diagnosis of the genus is here reported:

Minimelanolocus R.F. Castaneda & Heredia, anam., 2001.

Ad fungos conidiales, hyphomycetes, pertinens. Coloniae in substrato naturali effusae, pilosae, olivaceae, brunneae, atrobrunnea vel nigra. Mycelium partim superficiale et partim in substrato immersum, ex hyphis septatis, ramosis, laevibus vel verrucosis, pallide brunneis vel brunneis compositum. Stromata absentia. Conidiophora conspicua, mononemata, solitaria vel fasciculata, septata, recta vel flexuosa, levia vel verrucosa, cylindrica, sinuosa usque geniculata, atrobrunnea vel nigra, apice versus pallidiora. Cellulae conidiogae holoblasticae, polyblasticae, indeterminatae, terminales vel intercalares mutan-

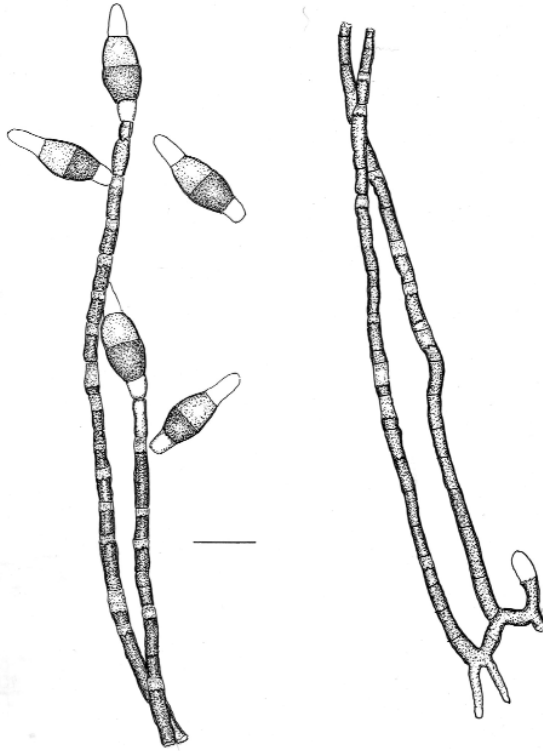


Fig. 3. *Repetophragma inflatum*. Conidiophores, percurrent conidiogenous cells and conidia. Bar 25 μm .

tes, pallide brunneae vel brunneae, in conidiophoris incorporatae, saepe cum proliferationibus sympodiales holoblastica et interdum aliquot proliferationibus percurrentibus enteroblastica praeditae. Loco conidiogeno inconspicuo vel interdum minime prominentis, angusto, opaco, refractivo vel obscuro. Conidiorum secessio schizolytica. Conidia oblonga, obovoidea, cylindrica, navicularia, clavata, obclavata, late fusiformia, usque turbinata, attenuata, truncata, obscura vel refractiva ad basim, solitaria, euseptata, acropleurogena, sicca, levia vel verrucosa, pallide olivacea, dilute brunnea usque atrobrunnea.

Type species: *Minimelanolocus navicularis* (R.F. Castaneda) R.F. Castaneda.

Minimelanolocus dumeti (Lunghini & Pinzari) R.F. Castaneda & Heredia (Fig. 4)

Colonies inconspicuae, composed by isolated conidiophores. Conidiophores macronematous. mononematous, unbranched, erect or gently flexuous, smooth, dark- brown, septate, 175-190 \times 5 μm . Conidiogenous cells integrated, terminal, polyblastic, sympodial, with flat but discernible scars, clear brown. Conidia solitary, dry, acropleurogenous, obpyriform, smooth, with 2 transverse septa, with basal cell brown and clearer the others, 18-19 \times 6 μm . On dead leaves of *Quercus suber*, Tuscania, Central Italy.

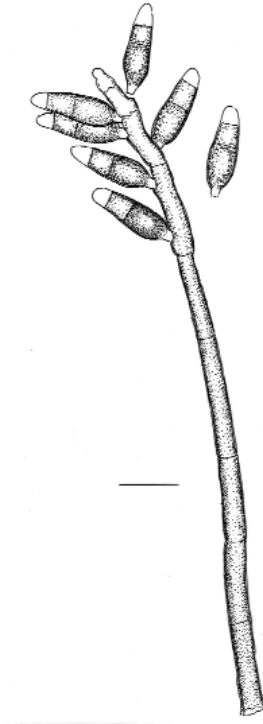


Fig. 4. *Minimelanolocus dumeti*. Conidiophores and conidia. Bar 12 μ m.

This species was collected by Lunghini on dead wood of *Pistacia lentiscus* at Elba island and again by Pinzari at Macchiagrande, near Rome (1996) and determined as *Pseudospiropes dumeti* for the characteristic conidia loci scars not so inconspicuous and for euseptate conidia. The placement in the genus *Minimelanolocus*, in our opinion, should be discussed.

Parapleurotheciopsis P.M. Kirk, 1982.

The genus *Parapleurotheciopsis* was described by Kirk (1982) to separate from the genus *Pleurotheciopsis* those species mainly characterized by production of branched conidia chains from ramoconidia with one or more denticles at the apex and developing secondary or tertiary ramoconidia, and produced by percurrent conidiogenous cells. The genus diagnosis is here reported:

Parapleurotheciopsis P.M. Kirk, 1982.

Colonies effusae, pilosae, brunneae ad fuscae, saepe inconspicuae. Mycelium partim

superficiale, partim in substrato immersum, ex hyphis septatis, pallide brunneis ad brunneis, laevibus, ramosis compositum. Conidiophorae macronematous, mononematous, erectae, simplices, laeves, septatae, rectae vel leviter flexuosae, brunneae ad atrobrunneae, ad basem cellulum quaeque radialiter lobatam inflatae formantes. Cellulae conidiogenae in conidiophoris incorporatae, holoblasticae, monoblasticae, terminales, cylindricae ad lageniformes, percurrentes. Conidia acrogena, sicca, laevia, hyalina ad pallide brunnea, catenata cum unice ramoconidio primo septato vel aseptato ad apice uno vel pluribus denticulis latis induto, deinde nonnumquam secundis vel tertiis cum ramoconidiis primo similaribus, quae catenis brevibus gaudent e conidiis ellipsoideis vel latefusiformibus, septatis vel aseptatis compositis.

Specie typica: *Cladosporium inaequiseptatum* Matsushima.

Parapleurotheciopsis ilicina P.M. Kirk, 1982 (Fig. 5)

Colonies inconspicuous, composed by isolated conidiophores. Conidiophores macrone-matous, mononematous, erect, not branched, smooth, septate, straight or gently flexuous, dark-brown, $92-120 \times 4-5 \mu\text{m}$. Conidiogenous cells integrated, monoblastic, termi-

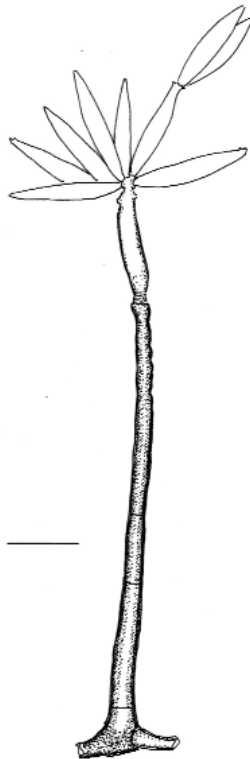


Fig. 5. *Parapleurotheciopsis ilicina*. Conidiophores, ramoconidia and conidia. Bar 16 μm .

nal, cylindrical, with percurrent proliferation. Conidia acrogena, hyaline to clear brown, smooth, 0-septate, fusiform, 20-23×5 µm. Ramoconidia very similar to conidia, 22-25×5 µm, but with one or two broad denticles at the apex each producing an acropetal chain of conidia.

On dead leaves of *Quercus suber*, Tuscania, Central Italy.

This genus, very similar to *Pleurotheciopsis*, is characterized by a percurrent conidiogenous cell, apparently through a single annellide, producing a first ramoconidium elongating into secondary ramoconidia and acropetal chains of conidia. Castaneda & Kendrick (1990) described *P. coccolobae* that differs from *P. ilicina* in conidia and ramocomia dimensions.

Menispora Persoon, 1822.

The genus was erected on the type species *M. glauca* characterized by conidiogenous cells monophialidic, cylindrical, uncinata and borne on the conidiophores or on short branches. The genus diagnosis proposed by Persoon (1822) is very short:

Menispora Persoon, 1822. *Fibrillae erectae, sub-corymbosae. Sporulae lineari-lunatae s. curvatae.*

Type species: *Menispora glauca* Pers.

Menispora ciliata Corda, 1837 (Fig. 6)

Colonies composed by very crowded conidiophores, cottony for the prolonged and flexuous setiform conidiophores, gray, clear gray. Conidiophores macronematous, mononematous, frequently branched, fertile in the lower part, setose and flexuous in the upper part, brown, clearer at the apices, septate, up to 900 µm or more ×3-5 µm wide near the base: Conidiogenous cells at the apex of branches or laterally to conidiophores, clear brown, monophialidic, with uncinata conidiogenous loci, 15×4 µm, but very variable in dimensions. Conidia aggregated at the base of the conidiophores, curved, round at the apices with a short setula at each end, hyaline, 0-septate, 14-16×4 µm, setulae up to 8 µm long.

On dead leaves of *Quercus suber*, Tuscania, Central Italy.

Gyrothrix Corda, 1842.

The genus *Gyrothrix* was erected by Corda (1842) to include species very closed to *Circinotrichum* but with branched setae. Nevertheless Corda did not propose a type species and preserved the specimens with *Gyrothrix* characters in the genus *Campsotrichum* Ehrenberg (1819) as *C. podospermum* section *Gyrothrix*. Rabenhorst (1844) transferred *Campsotrichum podospermum* Corda to *Gyrothrix podosperma* (Corda) Rabenhorst.

The morphological characters of *Gyrothrix* specimens are very closed to *Circinotrichum*: presumably they have the same phialidic conidiogenesis. In our opinion the division of the species between *Circinotrichum* and *Gyrothrix* should be discussed. Nees (Syst. d. Pilze 1817) reports the genus diagnosis of *Circinotrichum*:



Fig. 6. *Menispora ciliata*. Conidiophores and conidia. Bar 26 μm .

Circinotrichum Nees, 1817.

(Etym. circinos circinus et thrix pilus, hypha), *Campsotrichum* Ehreimb. (1820), nec Corda, *Gyrothrix* Corda (1842).

Hyphae steriles erectae, repetito-dichotome ramosae, ramis arcuatis. Basidia cylindrica, ad pedem hypharum sita, hyalina, brevia. Conidia bacillaria, hyalina, solitarie acrogena.

Goidanich (1935) described *Peglionia verticiclada* as new genus and new species found on dead leaves of *Laurus nobilis* and *Prunus cerasus* in Italy. This species presents morphological characters closed to *Gyrothrix* and *Circinotrichum* but enough different as between *Circinotrichum* and *Gyrothrix*, mainly for the particular shape of the setae and of strongly falcate conidia. Nevertheless we propose the diagnosis of *Peglionia* as Goidanich published in 1935 and that could be extended to *Gyrothrix* genus:

Peglionia Goidanich, 1935. (*Gyrothrix* Corda, 1842).

(Etym. a praeclaro phytopathologo Victorio Peglion, cui amantissime dico).

Hyphe steriles erectae, atrae, septatae, rigidae, apice verticillato ramosae. Conidiophora brevissima ampulliformia, hyalina, ad hypharum sterilium basim sita. Conidia hyalina falciformia, solitarie acrogena.

Ad genus *Helicotrichum* Nees proximum, sed cum eo, ob appendicum sterilium fabrica, nequaquam comparandum.

Our strain presents morphological characters well coinciding with *Gyrothrix verticillata* Pirozynski:

Gyrothrix verticillata Pirozynski, 1962 (Fig. 7)

Type species: *G. podosperma* (Corda) Rabenhorst 1844.

Colonies grey, compact and composed by several and very crowded setae and conidiophores. Setae erect, straight, very crowded, brown, clear brown, septate, smooth, sometimes simple (290×4 μm), more frequently 2-3 times branched, with branches disposed at

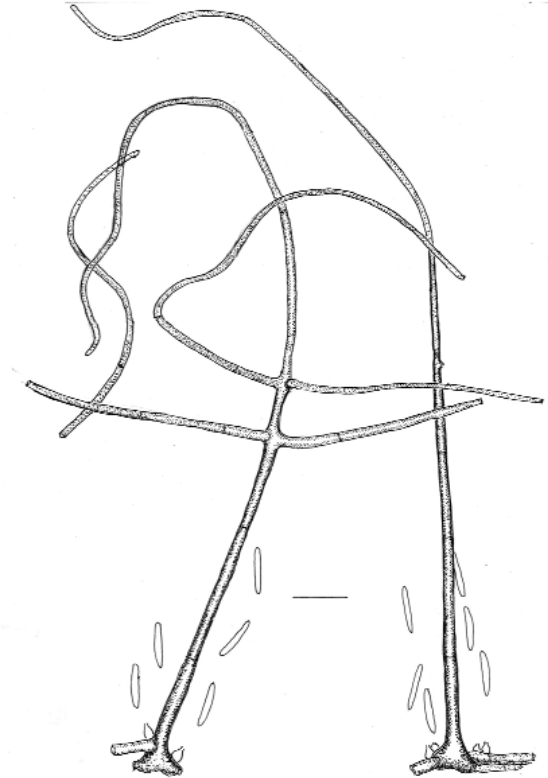


Fig. 7. *Gyrothrix verticillata*. Setae, conidiogenous cells and conidia. Bar 18 μm.

right angles and opposite, sometimes with the main seta apex and branches sinuous or flexuous, 290-300×4µm. Conidiophores micronematous, on the basal hyphae and at the base of the setae. Conidiogenous cells obclavate, hyaline, 5-7×3 µm. Conidia aggregated at the base of the setae and forming a white layer, they are cylindrical or gently curved, with rounded or gently corniform apex and pointed base, hyaline, 0-septate, 11-14×2 µm. On dead leaves of *Quercus suber*. Tuscania, Central Italy.

Dactylaria Sacc. emend. Bhatt & Kendrick (1968).

Mycelium ex hyphis hyalinis vel pigmentiferis, septatis, ramosis. Conidiophora simplicia, singulariter orientia, recta vel flexa, interdum septata. Cellula apicalis (sympodula) sympodialiter per proliferationes successivas elongascens vel tumescens; proliferatio unaquaeque unum conidium in dente conspicuo saepe truncato fert. Conidia (sympodioconidia) sicca, hyalina vel pigmentifera, elongata, cylindrica vel fusiformia vel ampulliformia vel anguste clavata vel anguste ellipsoidea, 1- ad 4-septata, cicatricem basalem exhibentia.
Lectotype species: Dactylaria purpurella (Sacc.) Sacc. syn. *Acrothecium purpurellum* Sacc.

Mycelium composed of hyaline or pigmented, septate, branched hyphae. Conidiophores solitary, simple, erect, straight or flexuous, arising laterally or terminally from vegetative hyphae, sometimes septate; the apical cell of sympodula which elongates or becomes terminally swollen as it produces a succession of spores; each conidium, as it secedes, leaves a conspicuous, often flat-topped, denticle. Conidia hyaline or pigmented, dry, elongate, cylindrical to fusiform to ampulliform to narrowly clavate to narrowly ellipsoidal, 1-to 4-septate, with a flat abstriction scar at the base.

Section *Mirandina* - Conidiophores brownish, usually erect. Conidia hyaline, clavate, filiform or fusiform, in apical clusters or usually short-cylindrical denticles.

Mirandina corticola Arn. 1952 ex Mats. 1975 (Fig. 8)

Colonies composed by several and crowded conidiophores. Conidiophores macronematous mononematous, erect, brown, clear-brown towards the apex, smooth, septate, 75-85×4 µm. Conidiogenous cells sympodially elongating, with prominent denticles. Conidia hyaline, fusiform, straight, 9-12- septate, 80-95×3 µm. On dead leaves of *Quercus suber*, Tuscania, Central Italy.

This species, validated by Matsushima (1975), on dead leaves of *Quercus suber* appears with inconspicuous colonies even if composed by crowded conidiophores but difficult to observe. If compared to other observations the conidia dimensions doesn't present a strong variability (Matsushima 1975, De Hoog 1985, Cazau & al. 1990).

Digitodesmium P.M. Kirk, 1981.

The genus was erected by Kirk (1981) to separate from the genus *Dictyosporium* the species with digitate, acrogenous, euseptate conidia as most important morphological characters. The original diagnosis is here reported.

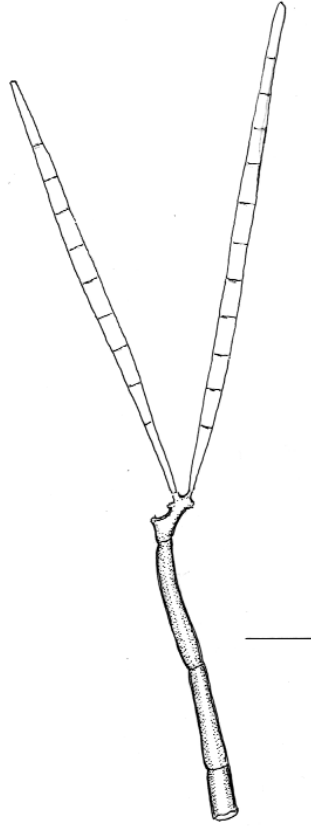


Fig. 8. *Mirandina corticola*. Conidiophores, conidia. Bar 12 μm .

Digitodesmium P.M. Kirk, 1981.

Sporodochia sparsa, punctiformia, pulvinata, pallide brunnea ad brunnea. Mycelium in substrato plerunque immersum. Conidiophora semi-macronematosa, mononematosa, fasciculata, ex hypha, pallidissime brunnea, laevia, septata, moniliformia composita. Cellulae conidiogenae oblasticae, monoblasticae, in conidiophoris incorporatae, terminales, determinatae, globosae ad doliiformes, minute cicatricatae. Conidia acrogenosa, solitaria, secedentia schizolytice, euseptata, sicca, digitata, subinde in apice brachiorum calyptra gelatinosa hyalina induta.

Specie typica: *Digitodesmium elegans* P.M. Kirk.

Digitodesmium elegans P.M. Kirk, 1981 (Fig. 9)

Colonies inconspicuous, composed by isolated and punctiform sporodochia, clear red-brown. Conidiophores semi-macronematous, or micronematous, mononematous, composed by brown or dark-brown cells. Conidiogenous cells holoblastic, monoblastic, inte-

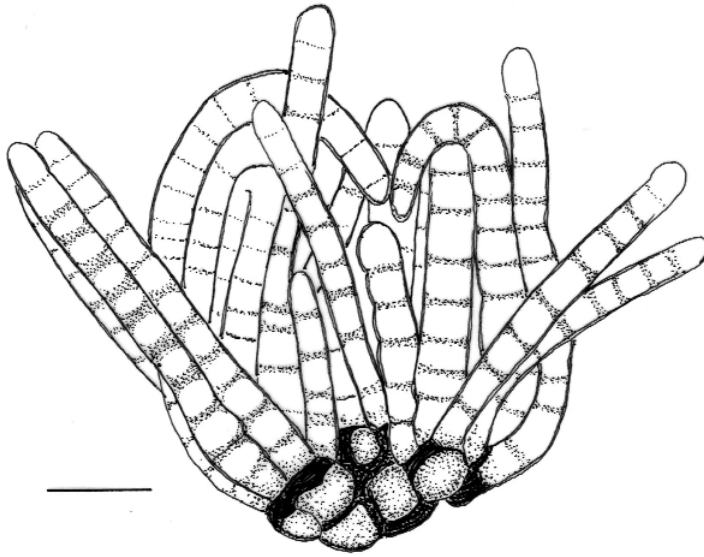


Fig. 9. *Digitodesmium elegans*. Digitate conidia. Bar 12 μ m.

grated, terminal, determinate, irregularly globose. Conidia acrogenous, solitary, euseptate, digitate, 45-54 \times 5 μ m, up to 15 irregularly divergent arms 5 μ m wide.

On dead leaves of *Quercus suber*, Tuscania, Central Italy.

The specie described presents morphological characters closed to *D. elegans* found by Kirk on dead wood of *Quercus robur* a species very similar to *Q. suber*. Nevertheless, some characters, like the pigmented conidiogenous cells and the number of arms of our strain, appear a little different presumably influenced by ecological conditions.

Chalara (Corda) Rabenhorst, 1844.

The genus *Chalara* was erected by Corda (1838) and validated by Rabenhorst (1844) to include species with monophialidic conidiogenous cells and conidia endogenous as most important characters.

Chalara (Corda) Rabenhorst, 1844 (fide Saccardo 1886).

Hyphae steriles nullae v. *obsoletae*, *fertiles simplices*, *breves*, *rectae*, *fuscae subinde ampulliformes*, *conidia hyalina*, *cylindrica*, *utrinque truncata*, *catenulata*.

Type species: *Chalara fusidioides* (Corda) Rabenhorst 1844.

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 verruculose ends.

Chalara aurea (Corda) S.Hughes, 1958 (Fig. 10)

Colonies composed by very crowded conidiophores completely covered by an abundant conidia production disposed in long chains and forming a white superficial layer. Conidiophores macronematous, mononematous, erect or slightly flexuous, unbranched, brown, clear brown, smooth, up to $220 \times 3.5-7.5 \mu\text{m}$ conidiogenous cell included. Conidiogenous cells monophialidic, integrated, terminal, rarely percurrent, lageniform with a long cylindrical neck, $29-76 \times 3.5-8.3 \mu\text{m}$ at the swollen base ($2-4 \mu\text{m}$ at the neck). Conidia endogenous, catenate, cylindrical with rounded apex and truncate base, 1-septate rarely 0-septate, colourless, smooth, $14-18 \times 3 \mu\text{m}$. On dead leaves of *Quercus suber*, Tuscania, Italy.

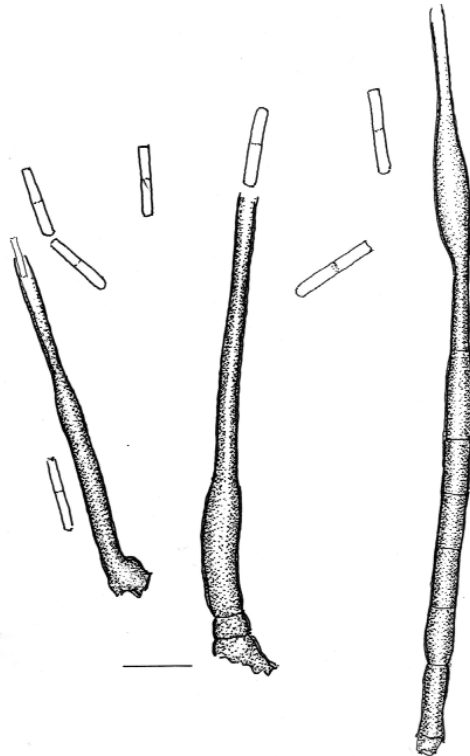


Fig. 10. *Chalara aurea*. Conidiophores and conidia. Bar 15 μm .

The species described presents dimensional characters not completely similar to those reported by Nag Raj & Kendrick (1975): conidiophores are longer and wider at the base, but the general morphology is well coinciding and the conidia production is so abundant to cover with long and white chains the colony.

***Dictyochaeta* Spegazzini, 1923.**

The genus *Dictyochaeta* was erected by Spegazzini (1923) on the single species *D. fuegiana* Speg. found on dead leaves of *Notophagus betuloides* collected in Tierra del Fuego. The Spegazzini diagnosis of the genus from Arambarri & Cabello (1990) is here reported.

***Dictyochaeta* Spegazzini (1923).**

Hyphae olivaceae repentes superficiales roectusculae reticulato-anastomosantes, septulatae pullucidae, steriles, hinc inde, ad anastomoses praecipue, setulis erectis rectis atris subopacis simplicibus armatae; hyphae fertiles circa bases setularum exsurgentes, breviusculae graciles simplices pallidae septulatae, articulo supremo parum crassiore, conidia linearia acuta continua hyalina gerentes.

Type species: *Dictyochaeta fuegiana* Spegaz. 1923.

The description of our species (Fig. 11) is here reported.

Colonies effuse, very large, composed by crowded conidiophores and setae, white and shining for the apical production of conidia remaining in cluster at conidiophores apices. Setae erect, brown, dark-brown near the base and clearer towards the apices, septate, smooth, 130-190×4-5 µm. Conidiophores macronematous, mononematous, generally straight, not branched, septate, smooth, brown, paler towards the apices, 38-50×3-4 µm. Conidiogenous cells monophialidic, integrated, terminal, cylindrical, with collarettes. Conidia falcate, with apices gently pointed, hyaline, 0-septate, 15-16×3 µm, with setulae at each ends, up to the half of the conidia dimension.

On dead leaves of *Quercus suber*, Tuscania, Central Italy.

The species described for some characters is similar to *D. simplex* (Kuthubutheen & Nawawi 1991), but we have never seen polyphialide conidiogenous cells. In the genus actually are included numerous species that should be necessary to examine in the herbaria; since we do not have this possibility we prefer to leave our species indeterminate.

***Sporidesmium* Link, 1809 ex Fries, 1821.**

The genus *Sporidesmium* was established by Link (1809) and validated by Fries (1821). Saccardo (1886) in Syll. Fung. vol. IV, pag. 382, Sez 3 Phragmosporae reports the genus diagnosis of *Clasterosporium* Schweinitz (1832) that considered valid also for many species of the genus *Sporidesmium*.

Hyphae repentes (saprogenae), hinc inde conidia fusioidea vel cylindracea subrecta, 2-pluriseptata, fusca exerentes. Species plures heribicolae colore olivaceo et rigiditate, minore a typo desciscunt sed limes ambiguus.

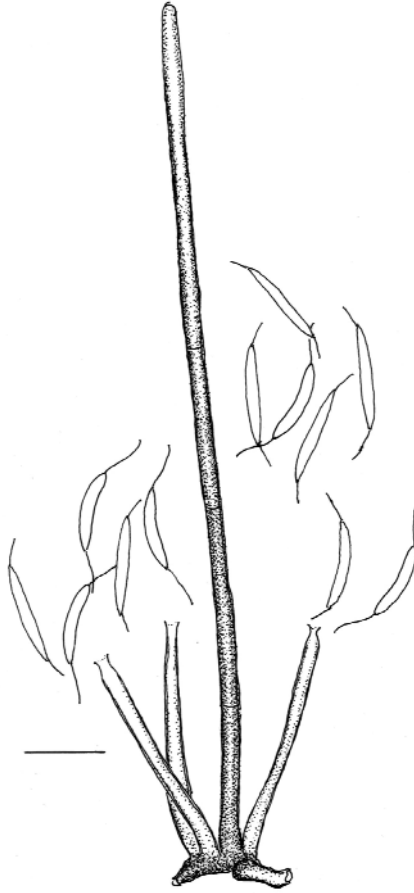


Fig. 11. *Dictyochoaeta* sp. Setae, conidiophores and conidia. Bar 16 μm .

Subramanian in his *Reassessment of the genus Sporidesmium (Hyphomycetes) and some related taxa* (1992) gives a short description: “*simple, brown, septate conidiophores and the acrogenous, solitary, gangliar, euseptate conidia. The conidiophores may show irregular percurrent proliferations*”.

Type species: *Sporidesmium atrum* Link, 1809.

Sporidesmium sp. (Fig. 12)

Colonies inconspicuous, composed by isolated conidiophores mixed with *Dictyochoaeta* conidiophores. Conidiophores macronematous, mononematous, erect, stright, hyaline and very clear brown only near the base, septate, smooth, $48 \times 5 \mu\text{m}$. Conidiogenous cell monoblastic, acroauxic, rarely with one annellation, almost indistinguishible from the conidiophores. Conidia acrogenous, fusiform, 4-5-septate, with trunk basal cell very clear

brown like the penultimate apical cell, apex prominent, elongated and rounded, hyaline, two central cells brown, chestnut brown, smooth, $38-48 \times 8 \mu\text{m}$.

We have found this species on dead leaves stipes of *Quercus suber*, but, since the sample was very poor we prefer to leave it indeterminate hoping in new findings.

Conclusions

This is the sixth contribution to the knowledge of Dematiaceous *Hyphomycetes* on the litter of Mediterranean plants. Even if in a not natural forest *Quercus suber* is a Mediterranean maquis species and on its litter we have found interesting dematiaceous *hyphomycetes* and we will continue to investigate this substratum.

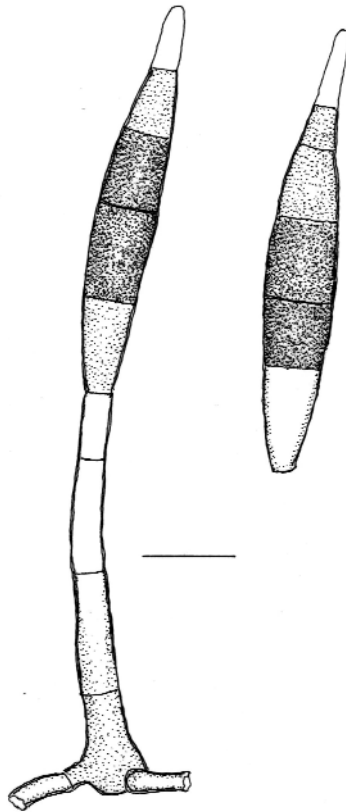


Fig. 12. *Sporidesmium* sp. Conidiophores and conidia. Bar $10 \mu\text{m}$.

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