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Contribution to the knowledge of diversity and distribution of lignicolous fungi from Sicily (southern Italy)

Abstract

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Ecological and distributional data on eleven lignicolous fungi, such as *Antrodia ramentacea, Ceriporiopsis mucida, Ceriporia viridans, Eichleriella deglubens, Kavinia himantia, Oxyporus latemarginatus, Phanerochaete sordida, P. velutina, Phellinus erectus, P. rimosus* and *Phylloporia ribis* are here reported.

Introduction

The knowledge on diversity and distribution of lignicolous fungi in the Mediterranean area are still inadequate if compared with data arising from other European countries. The literature data on habitats, substrata and host plants for lignicolous fungi are mainly referred to northern and central European countries. Few data arises from Mediterranean ecosystems, particularly as the plants and small shrubs of Mediterranean maquis are concerned. In order to fill the gap of knowledge on such interesting group of fungi, a specific part of the project for the assessment of fungal biodiversity in Sicily (southern Italy) has been devoted to the census of lignicolous fungi and the acquirement of ecological data.

Materials and methods

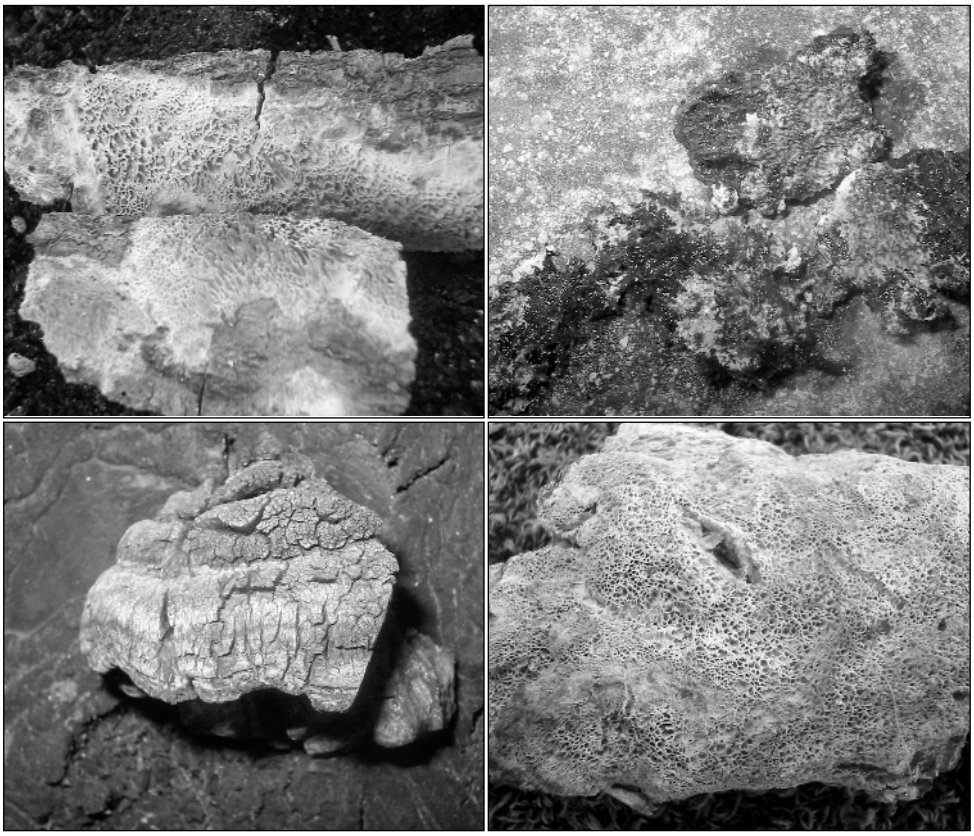
Periodical observation on the occurrence of lignicolous fungi in the Sicilian territory were carried out in the last ten years. Basidiomata of lignicolous fungi were collected in broadleaved and conifer forest ecosystems of Sicily. The collected fungi were identified in laboratory on fresh and dried materials using a Leica microscope. The scientific binomials were mostly obtained using Bernicchia (1990) for *Polyporaceae*; Eriksson & Ryvarden (1976) and Eriksson & al. (1978) for species belonging to the family *Corticiaceae*. The herbarium samples are kept in the *Herbarium Mediterraneum Panormitanum* (PAL) in Palermo.

Results

Following up the survey of Saitta & al. (2004) that reported from the Sicilian territory 209 woody taxa (181 *Basidiomycetes* and 28 *Ascomycetes*), additional data on the distribution and ecology of 11 *Aphyllophorales* are here pointed out as new records for Sicily.

The saprotrophs *Phanerochaete sordida* (P. Karst.) J. Erikss. & Ryvarden (Fig. 1) and *P. velutina* (DC.: Fr.) P. Karst. (Fig. 2) are currently reported in literature on deciduous and conifer woods. *P. sordida* is very common in Northern Europe (Bernicchia 1990) and it is considered as one of the most widespread species of the family *Corticiaceae*. *P. velutina* is included in the list of common species in Scandinavia, Finland and Norway while it is reported as infrequent in the rest of Europe (Bernicchia 1990). The distribution of *P. sordida* and *P. velutina* in Italy, previously limited to scattered localities of some Italian regions, is now widened to Sicily where the two species were collected on small branches of *Quercus ilex* L.

Figs. 1-4. **1)** *Phanerochaete sordida* (P. Karst.) J. Erikss. & Ryvarden; **2)** *P. velutina* (DC.: Fr.) P. Karst.; **3)** *Phylloporia ribis* (Schumach.: Fr.) Ryvarden; **4)** *Eichleriella deglubens* (Berk. & Broome) Lloyd.

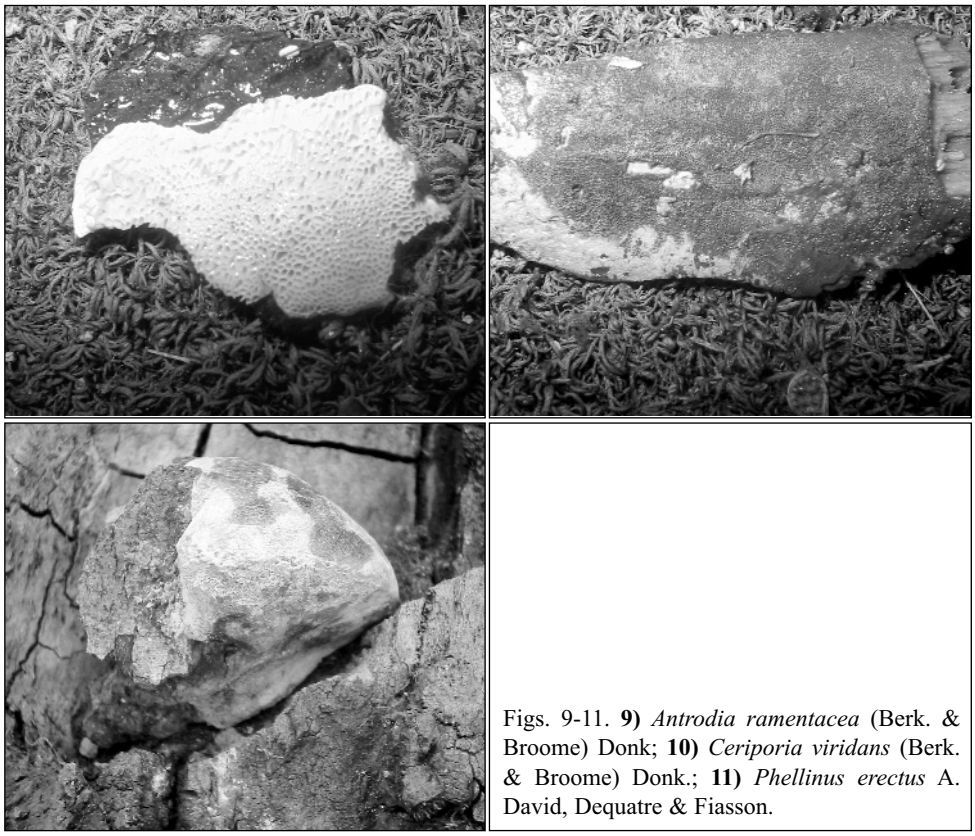


Figs. 5-8. **5)** *Ceriporiopsis mucida* (Pers.: Fr.) Ryvarden & Gilbertson; **6)** *Kavinia himantia* (Schwein) J. Eriksson; **7)** *Phellinus rimosus* (Berk.) Pilát; **8)** *Oxyporus latemarginatus* (Durieu & Mont.) Donk.

Phylloporia ribis (Schumach.: Fr.) Ryvarden (Fig. 3) is an infrequent necrotroph parasitic species collected in Sicily on stumps or at the base of plants of *Quercus ilex*. It is frequently misidentified as *Phellinus torulosus* (Pers.) Bourd. & Galz., but it differs from the latter for the absence of setae in the hymenial layer.

Eichleriella deglubens (Berk. & Broome) Lloyd (Fig. 4) is a very rare saprotroph recorded on trunks of *Quercus ilex*. Its distribution in Italy is limited to scattered localities of few regions, i.e. Sardinia, Trentino Alto Adige and Veneto (Bernicchia 1990; Onofri & al. 2003). The new finding from the Sicilian territory widens southwards the distributive area of such interesting species.

Ceriporiopsis mucida (Pers.: Fr.) Ryvarden & Gilbertson (Fig. 5), is a widespread lignicolous saprotroph growing on rotten woods of conifers and broad-leaved plants. In Sicily it was collected on *Q. ilex* logs, but also on strobiles of *Pinus halepensis* Miller, an unusual substratum not previously reported in literature.



Figs. 9-11. **9)** *Antrodia ramentacea* (Berk. & Broome) Donk; **10)** *Ceriporia viridans* (Berk. & Broome) Donk.; **11)** *Phellinus erectus* A. David, Dequatre & Fiasson.

Kavinia himantia (Schwein) J. Eriksson (Fig. 6) is a saprotroph of the *Corticiaceae* family, infrequent in Europe and rare in the Sicilian territory where it was collected on stumps of *Q. ilex* and *Fagus sylvatica* L.

Phellinus rimosus (Berk.) Pilát (Fig. 7) is widely distributed in the temperate zones but very rare in Italy. It was previously collected only in Sardinia (Bernicchia 1990) at the base of living plants of *Pistacia lentiscus* L. In Sicily it was recently collected at the base of the trunk of some plants of *Quercus pubescens* Willd.

Oxyporus latemarginatus (Durieu & Mont.) Donk (Fig. 8) is an infrequent saprophytic species in Europe. In many Italian regions it was collected on different substrata and plants (Bernicchia 1990). In Sicily it was recorded for the first time on branches of *Quercus suber* L. and *P. halepensis*, two new substrata never reported in literature.

Antrodia ramentacea (Berk. & Broome) Donk (Fig. 9) is a saprophyte which grows preferentially on fallen trunks of conifers. It is widely distributed in Italy but infrequent in Sicily where it was collected in a mixed conifer wood of *Pinus halepensis*, *P. pinea* L., *Cupressus sempervirens* L. and *C. arizonica* Greene.

Ceriporia viridans (Berk. & Broome) Donk (Fig. 10) is an infrequent species not easy to identify since the spore shapes are very variable. It was collected for the first time in

Sicily, on fallen trunks of *Eucalyptus camaldulensis* Dehnh. In the same vegetational type also *Phellinus erectus* A. David, Dequatre & Fiasson (Fig. 11), a very rare species in Europe and previously reported in Italy only from Sardinia (Bernicchia 1990), was collected at the base of living plants of *E. camaldulensis*.

Conclusions

In Sicily the assessment of lignicolous fungi diversity is still in progress and new distributive and ecological data are frequently available with the finding of unrecorded taxa. A huge number of species were collected in *Quercus ilex* woods, from 0 to 1550 m asl, while others were found on different substrata in broad-leaved or conifer woods. The use of plants for timber and charcoal by the local populations, the high level of exploitation of woods and the type of management by the Regional Forestry Administration produced a large amount of logs, branches and stumps which remains for a long time in the underwood as ideal substratum for lignicolous fungi. The eleven taxa reported in this survey are infrequent or rare at regional, national and European level and are suitable for further investigation on their ecology, chorology and role in forest ecosystems of the Mediterranean area.

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