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Autor: Laganà, A. / Salerni, E. / Barluzzi, C.
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Contribution to knowledge of the Tatti Forest (Tuscany – Italy): Mycofloristic investigations

A. Laganà*, E. Salerni, C. Barluzzi,
V. De Dominicis and C. Perini

Dipartimento di Biologia Ambientale – Università degli Studi di Siena –
Via P. A. Mattioli n° 4 – I-53100 Siena

* Dip. Biologia Ambientale – Università degli Studi di Siena
Via P. A. Mattioli, 4 – I-53100 Siena
Tel. ++39 0577 232871, fax ++39 0577 232860
e-mail: lagana@unisi.it

Summary – As a contribution to knowledge of the fungal communities of thermophilous deciduous oak woods, 265 species of macromycetes are listed for the Tatti Forests (Tuscany, Italy), where *Quercus cerris* L. and *Q. petraea* (Mattuschka) Liebl. grow together giving this area a very high naturalistic importance.

Riassunto – La lista micofloristica qui riportata comprende 265 macrofunghi, e rappresenta un contributo alla conoscenza dei querceti decidui della Foresta di Tatti (Toscana, Italia), dove *Quercus cerris* L. e *Q. petraea* (Mattuschka) Liebl. crescono insieme conferendo all'area un elevato valore naturalistico. Essa deve essere considerata inoltre un utile contributo alla conoscenza delle comunità fungine in querceti decidui di ambiente mediterraneo.

Key words: Mycoflora, mediterranean area, deciduous oak-woods, *Quercus petraea*

Introduction

The study area in the Tatti Forest (IGM 1:25000, map 2951) is on the right bank of the Cecina river, near Volterra (province of Pisa, Tuscany; Fig. 1). Together, the adjacent Forests of Berignone and those of Tatti cover about 2700 ha and are protected areas. Their naturalistic value lies in their remarkable richness of species, and the fact that they are an important shelter for permanent and migratory fauna (Comunità Montana Val di Cecina,

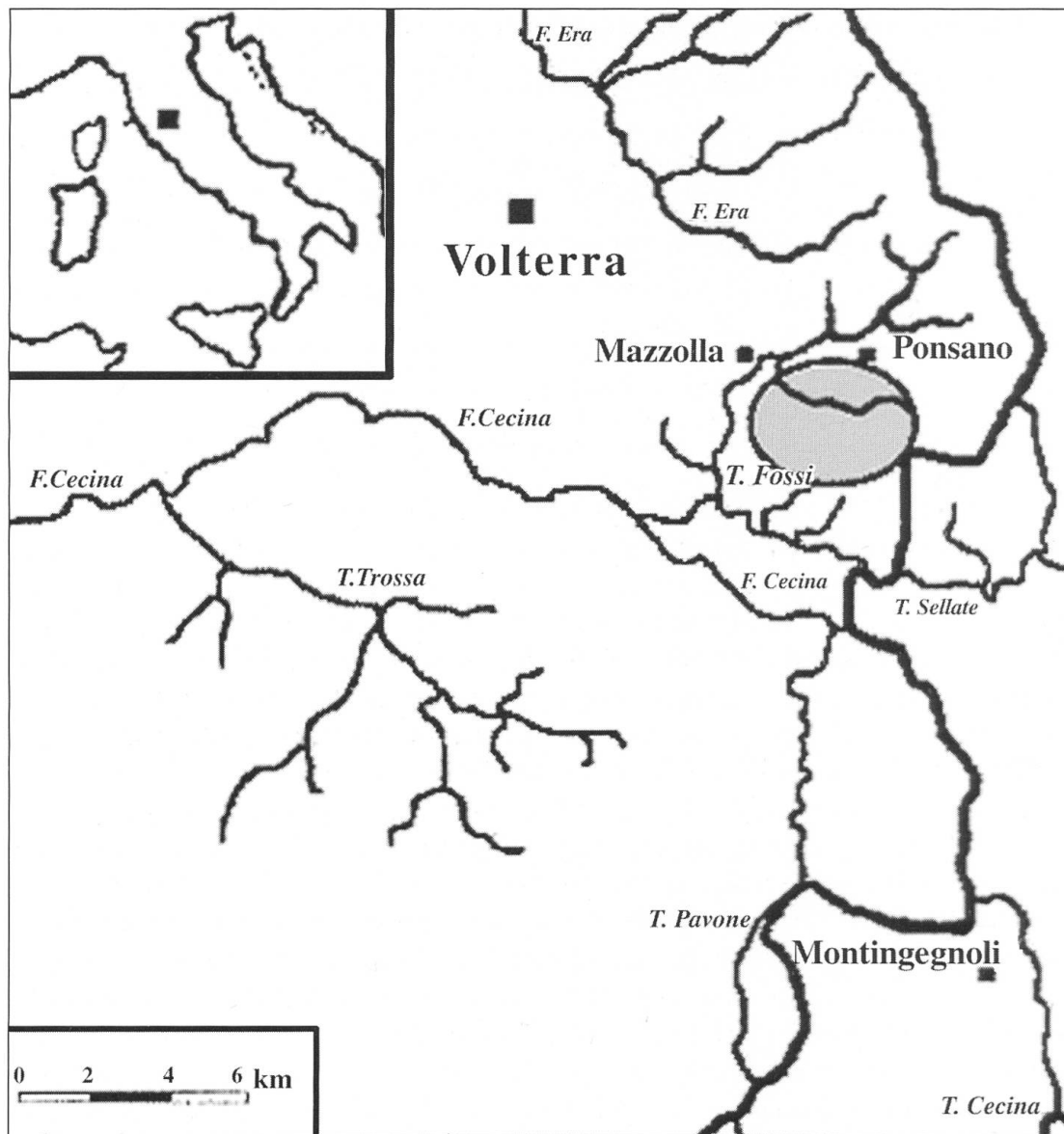


Fig 1: Map showing investigated area.

1990). Their altitude ranges from 120 to 560 m, a transition belt between Mediterranean and submontane.

These thermophilous woods are dominated by *Quercus ilex* L. and *Arbutus unedo* L. and mixed mesohygrophilous vegetation typical of glens in the narrow river valleys. Mesophilous woods of deciduous trees with *Quercus cerris* L., *Q. petraea* (Mattuschka) Liebl. and *Carpinus betulus* L. increase gradually in frequency on northern slopes with a cooler microclimate. The presence of durmast oak (*Q. petraea*) increases the naturalistic importance of the

Tatti Forest, because it forms here the largest woods in the central-western Mediterranean (Barsacchi et al., 1997). The durmast oak has wide distribution in Europe. It was reported as frequent only in northern Italy; in central Italy it is sporadic, and its presence in the south is uncertain.

The following mycofloristic list is a first contribution to the assessment of fungal biodiversity in the Tatti Forest, and to knowledge of the fungal communities of deciduous oak woods in the Mediterranean region, where few studies have yet been performed on macrofungi growing in well defined areas with homogeneous forest type.

Study area

Mycofloristic investigations have been carried out in deciduous oak woods placed in Tatti Forest. Mycocoenological research was also carried out in permanent stations each measuring 1000 m² in the same area. The tree layer consists mainly of specimens of *Q. petraea* up to 22 m tall with *Q. cerris* and *Ostrya carpinifolia* Scop. as subdominants; these three species are the main ectomycorrhizal hosts. Other trees, generally 10–15 m tall, are *Carpinus betulus*, *Fraxinus ornus* L. and *Q. ilex*. There are no conifers in the study area. *Ilex aquifolium* L., *Crataegus monogyna* Jacq. and *Cornus mas* L. are abundant in the shrub layer. The well developed herbaceous layer includes *Brachypodium sylvaticum* (Hudson) Beauv., *Cyclamen repandum* S. et S., *Festuca heterophylla* Lam., *Melica uniflora* Retz., *Primula vulgaris* Hudson and *Viola alba* subsp. *dehnhardtii* (Ten.) Becker. The phytosociological results, currently being processed, will be published with the mycocoenological data.

Late Miocene lacustrine sediments are the most common substrate in this area (Carta Geologica d'Italia 1:100 000, maps 112, 113, 119, 120), consisting mainly of pebbly conglomerates derived from sandstone, ophiolite, chert and limestone of the Calcari a Palombini Formation (Dallan et al., 1969). There are also outcrops of a middle Miocene fine grained, compositionally homogeneous sandstone, the so called Ponsano sandstone (Gianini & Tongiorgi, 1959).

Soil pH influences the physical, biological and nutrient properties of soil and was measured in order to verify relations between fungal species and substrate. Values ranged from 5.4 to 5.8 in the surface layer and between 4.8 and 5.9 at a depth of 10 cm.

Climate is mesothermic sub-humid with slight summer drought (Thorntwaite, 1948); mean annual temperature is 13–14 °C and mean annual rainfall 800–900 mm (Barazzuoli et al., 1993).

Materials and methods

Surveys were conducted every month from 1994 to 1996, beginning in the stations chosen for mycocoenological study and extending research to all of the surrounding area. The species of fungi collected, were studied and then dried and deposited in the Herbarium Universitatis Senensis (Siena). Hypogaeal fungi and myxomycetes were not considered.

The classification used is that of the Dictionary of the Fungi (8th edition) by Hawksworth et al. (1995), and nomenclature is principally according to Arnolds et al. (1995). For species missing from the Dutch check-list, other publications (indicated in brackets) were used. To avoid misunderstandings, synonyms are sometimes reported and short notes added. The authors' names of fungal species are abbreviated according to Brummitt & Powell (eds., 1992). For each species the trophic group is indicated as M (mycorrhizal species), Sh (saprotroph on humus), Sl (saprotroph on litter), Sw (saprotroph on wood), P (parasite). This information is not always obvious, because it is impossible to observe the mycelia directly, or the same species may live in various ways.

Soil pH was determined from 12 cores to a depth of 10 cm by the method of Arnolds (1981).

Results and discussion

The number of species of macrofungi observed between 1994 and 1996 was 265, 130 (49%) of which were regarded as mycorrhizal, 121 (46%) as saprotrophs and only 1 (0.4%) as parasite; for the other 13 species, attribution to a trophic group was uncertain. According to Fellner & Soukup (1991), Schlechte (1991) and Fellner (1993), such a percentage of mycorrhizal fungi can be regarded as indicating good health status of the forest.

The mycofloristic list is organized according to the classification of Hawksworth et al. (1995). It includes three orders and nine families of *Ascomycota*, and 12 orders and 29 families of *Basidiomycota*. Among ascomycetes, the most numerous families are: *Leotiaceae* (4 genera, 4 species), *Otidea* (3 genera, 3 species) and *Geoglossaceae* (2 genera, 3 species). Among basidiomycetes they are *Tricholomataceae* (19 genera, 66 species), *Cortinariaceae* (3 genera, 56 species), *Agaricaceae* (5 genera, 10 species) and *Russulaceae* (2 genera, 30 species).

Most of the species found were taxa of wide ecological spectrum, e.g. *Clavulina coralloides*, *Laccaria laccata*, *Mycena galopus*, *M. pura*, *M. rosea*, *M. vitilis*, *Russula fragilis*, *Tricholoma saponaceum* and *Xylaria hypoxylon*.

Abundant in the study area are *Lactarius chrysorrheus* and *Marasmius quercophilus*, regarded by many researchers as linked to woods dominated by the

genus *Quercus* (Antonin & Noordeloos, 1993; Arnolds et al., 1994; Bertault, 1982; Bogoev et al., 1993; Malençon & Bertault, 1971, 1972; Salerni et al., 1995). Moreover, Bohus & Babos (1967) cite *L. chrysorrhoeus* as a mycorrhizal species of oaks. Species preferentially linked to oak woods were the less frequent *Lactarius decipiens* and *L. subumbonatus* (Bon & Gehu, 1973; Courtecuisse, 1984; Lisiewska, 1974; Marchand, 1980). *Mycena polyadelpa* and *Poculum firmum* are saprotrophs linked to leaves (the former) and to cups and twigs (the latter) of oaks (Braitenbach & Kränzlin, 1981–1995; Courtecuisse, 1986; Kuyper, 1994).

Noteworthy is the presence of *Aureoboletus gentilis*, that Alessio (1985) lists as widely distributed but not common, and *Boletus satanas*, a thermophilous species that prefers calcareous soil (Bujakiewicz, 1992; Darimont, 1973; Heine-mann & Darimont, 1956; Lisiewska, 1974), also indicated as uncommon by Alessio (1985).

Some of the fungal species listed here have been cited as differential species, preferential or exclusive of deciduous oak woods in central-southern Tuscany: they include *Boletus ferrugineus*, *Cortinarius aprinus*, *Entoloma nitens*, *Inocybe bongardii*, *I. petiginosa*, *I. pusio* and *I. tenebrosa* (Laganà et al., 1996; Salerni et al., 1995). Seven species found in the deciduous oak woods of Tatti have been cited by Perini et al. (1993) as characteristic of Mediterranean environments: *Boletus satanas*, *Cortinarius bulliardii*, *C. multiformis*, *Hygrophorus personii* var. *fuscovinosus*, *Lyophyllum paelochroum*, *L. transforme* and *Russula foetens*. The finding of *Hygrophorus discoxanthus*, cited by many authors as a mycorrhizal species of beech woods (Bon, 1983; Galli, 1985; Thoen, 1970, 1971), indicates the transitional character of the area between Mediterranean and submontane.

In the light of these considerations, the present list of mycoflora is an important contribution to knowledge of the fungal communities that grow in a well defined forest phytocoenosis, the deciduous oak wood, in a typically Mediterranean environment.

Ascomycota

Leotiales

Hyaloscyphaceae

Sw – Dasyscyphella nivea (Hedw.: Fr.) Raitv.

Syn.: *Dasyscyphus niveus* (Hedw.: Fr.) Sacc.; *Lachnum niveum* (Hedw.: Fr.)

P. Karst.

15/01/96.

Geoglossaceae

Sh – Geoglossum cookeanum Nannf.

04/11/96 (Det.: De Vito A.).

Sh – Geoglossum umbratile Sacc. ss.str.

04/11/96 (Det.: De Vito A.).

Sh – Trichoglossum hirsutum (Pers.: Fr.) Boud.

Syn.: *T. variabile* (E.J.Durand) Nannf., *Geoglossum hirsutum* Pers.: Fr.
24/11/94.

Leotiaceae

Sw – Ascocoryne sarcoides (J.E.Jacques: Fr.) Groves & Wilson ss. str.

04/11/96 (Det.: De Vito A.)

Sw – Bisporella citrina (Batsch: Fr.) Korf & Carpenter

Syn.: *Calycella citrina* (Batsch: Fr.) Quél.

19/12/94; 20/11/95; 12/12/95; 04/11/96 (Det.: De Vito A.); 16/12/96.

Sw – Bulgaria inquinans (Pers.: Fr.) Fr.

04/11/96 (Det.: De Vito A.).

Sh – Leotia lubrica (Scop.: Fr.) Pers.

24/11/94; 17/10/96; 04/11/96 (Det.: De Vito A.); 25/11/96.

Sclerotiniaceae

Sl (Sw) – Poculum firmum (Pers.: Fr.) Dumont

Syn.: *Rutstroemia firma* (Pers.: Fr.) P.Karst.

19/12/94.

Sl – Rutstroemia echinophila (Bull.: Fr.) Höhn.

Syn.: *Ciboria echinophila* (Bull.: Fr.) Sacc., *Phialea echinophila* (Bull.: Fr.) Quél.
25/09/95. (Rev.: Marchetti M.)

Note: The species was observed on oak cupules; this is in accordance with White (1941) that reports its habitat not only on involucre of chestnut.

Pezizales

Helvellaceae

Sh – Helvella atra Oeder: Fr.

Syn.: *Leptopodia atra* (Oeder: Fr.) Boudier, *H. nigricans* Pers., *H. pezizoides*
Afzel.: Fr., *H. subglabra* Smith-Weber

17/10/96.

Otideaceae

M – Humaria hemisphaerica (Wiggers: Fr.) Fuckel

Syn.: *Mycolachnea hemisphaerica* (Wiggers: Fr.) Maire

24/11/94; 25/09/95; 17/10/96.

M (Sh?) – Otidea alutacea (Pers.) Masee

17/10/96.

Sh – Trichophaea hemisphaerioides (Mouton) Graddon

Misappl.: *T. abundans* ss. Maas Geest.

10/10/94.

Pezizaceae

Sh – Peziza badioconfusa Korf

Syn.: *Galactinia olivacea* Boud.

02/05/95.

Sh – Peziza succosa Berk. ss.str.

04/11/96 (Det.: De Vito A.).

Sarcoscyphaceae

Sw – Sarcoscypha coccinea s.l.

04/11/96 (det.: De Vito A.); 25/11/96.

Xylariales

Xylariaceae

Sw – Xylaria filiformis (Alb.-Schw.: Fr.) Fr.

04/11/96.

Sw – Xylaria hypoxylon (L.: Fr.) Grev.

24/11/94; 19/12/94; 20/11/95; 12/12/95; 15/01/96; 17/10/96; 25/11/96;
16/12/96.

Basidiomycota

Agaricales

Agaricaceae

Sh – Agaricus dulcidulus Schulzer (according to Cappelli, 1984)

10/10/94; 25/09/95.

Sh – Agaricus luteomaculatus (F. H. Möller) F. H. Möller

Syn.: *Psalliota luteomaculata* F. H. Möller

25/09/95.

Sh – Agaricus porphyrizon P. D. Orton

Syn.: *A. purpurascens* (Cooke) Pilát non *A. purpurascens* Fr.: Fr., *Psalliota purpurascens* (Cooke) F. H. Möller

24/11/94; 17/10/96.

Sh – Agaricus silvicola (Vittad.) Sacc.

17/10/96.

Sh – *Cystolepiota seminuda* (Lasch) Bon

Syn.: *Lepiota seminuda* (Lasch) P. Kumm., *L. sororia* Huijsman, *C. sororia* (Huijsman) Singer

Misappl.: *C. sistrata* ss. auct., *L. sistrata* ss. auct.

10/10/94; 24/11/94; 25/09/95; 17/10/96.

Sh – *Lepiota castanea* Quél.

Syn.: *L. ignipes* Bon

24/11/94; 17/10/96.

Sh – *Lepiota clypeolaria* (Bull.: Fr.) P. Kumm.

Syn.: *L. clypeolaria* var. *minor* J. E. Lange, *L. ochraceosulfurescens* Bon

17/10/96.

Sh – *Leucoagaricus serenus* (Fr.) Bon & Boiffard

Syn.: *Lepiota serena* (Fr.) Quél., *Pseudobaeospora serena* (Fr.) Locq., *Sericeomyces serenus* (Fr.) Heinem.

Excl.: *Lepiota serena* ss. J. E. Lange (1935) (= *L. sericeus*)

17/10/96.

Sh – *Macrolepiota konradii* (P. D. Orton) M. M. Moser

25/09/95.

Sh – *Macrolepiota procera* (Scop.: Fr.) Singer

Syn.: *M. permixta* (Barla) Pacioni, *M. procera* var. *permixta* (Barla) Candusso

24/11/94; 25/09/95; 12/09/96; 17/10/96; 04/11/96.

Amanitaceae

M – *Amanita franchetii* (Boud.) Fayod

Syn.: *A. aspera* ss. auct. europ.

24/11/94; 25/09/95; 17/10/96; 04/11/96.

M – *Amanita pantherina* (DC.: Fr.) Krombh.

10/10/94; 24/11/94; 17/10/96; 04/11/96.

M – *Amanita phalloides* (Fr.: Fr.) Link

17/10/96.

M – *Amanita rubescens* Pers.: Fr.

17/10/96.

M – *Amanita vaginata* (Bull.: Fr.) Lam. ss. str.

Syn.: *Amanitopsis plumbea* (Schaeff.) Fayod

10/10/94; 24/11/94; 27/06/95; 25/09/95; 18/10/95; 17/10/96.

Bolbitiaceae

Sh – *Conocybe brunnea* Watling

Syn.: *C. intermedia* var. *brunnea* J. E. Lange & Kühner

10/10/94.

Sh – Conocybe pilosella (Pers.: Fr.) Kühner
17/10/96.

Coprinaceae

Sh – Coprinus cortinatus J.E. Lange
15/01/96.

Sw – Coprinus disseminatus (Pers.: Fr.) Gray
24/11/94.

Sw – Coprinus insignis Peck
Syn.: C. alopecia ss. auct.
10/10/94.

Sw – Coprinus lagopus (Fr.: Fr.) Fr.
17/10/96.

Sh – Coprinus plicatilis (M. A. Curtis: Fr.) Fr. ss. str.
24/11/94.

Sh (Sw) – Psathyrella lutensis (Romagn.) Bon
16/12/96.

Sh – Psathyrella obtusata (Pers.: Fr.) A. H. Sm.
24/11/94.

Sh (Sw) – Psathyrella spadiceogrisea (Schaeff.) Maire
Syn.: P. exalbicans Romagn., *P. vernalis* (J. E. Lange) M. M. Moser, *Drosophila mammifera* Romagn.
10/10/94; 25/09/95; 17/10/96.

Note: Our samples were identified as *P. spadiceogrisea* according to Moser (1983), who consider *P. exalbicans* and *P. vernalis* as separate species.

Entolomataceae

Sh (M?) – Clitopilus prunulus (Scop.: Fr.) P. Kumm.
10/10/94; 24/11/94; 25/09/95; 12/09/96.

Sh – Entoloma juncinum (Kühner & Romagn.) Noordel.
24/11/94; 16/03/95.

Sh – Entoloma longistriatum (Peck) Noordel.
Syn.: E. sarcitulum (P. D. Orton) Arnolds
24/11/94.

Sh – Entoloma mougeotii (Fr.) Hesler
24/11/94; 25/09/95.

Sh – Entoloma nitens (Velen.) Noordel.
24/11/94; 19/12/94; 25/11/96.

Sh (M?) – Entoloma rhodopolium (Fr.: Fr.) P. Kumm.
Syn.: E. nidorosum (Fr.) Quél.
24/11/94; 17/10/96.

Sh (M?) – Entoloma sericatum (Britzelm.) Sacc.

Syn.: *Rhodophyllum svrcekii* Pilat
17/10/96.

Hygrophoraceae

Sh – Hygrocybe conica (Schaeff.: Fr.) P. Kumm.

Syn.: *H. tristis* (Pers.) Møller, *H. pseudoconica* J.E. Lange, *H. conicopalustris* Haller ex Bon, *H. riparia* Kreisel, *Hygrophorus conicus* (Schaeff.: Fr.) Fr.
24/11/94.

Note: Our samples were determined as *H. conica* var. *chloroides* (= *H. tristis*).

Sh – Hygrocybe reai (Maire) J.E. Lange

Syn.: *Hygrophorus reai* Maire
24/11/94; 17/10/96.

Sh – Hygrocybe virginea (Wulfen: Fr.) P.D. Orton & Watling

Syn.: *H. nivea* (Scop.) Murrill., *Camarophyllum virgineus* (Wulfen: Fr.) P. Kumm., *Hygrophorus niveus* (Scop.) Fr.,
C. niveus (Scop.) Bon, *Hygrophorus subradiatus* (Schumach.) Fr.
Excl.: *Hygrophorus subradiatus* ss. Arnolds, auct., *C. subradiatus* ss. J. E. Lange, auct. (= *H. colemanniana*)
24/11/94; 19/12/94; 17/10/96; 25/11/96.

M – Hygrophorus discoxanthus (Fr.) Rea

Syn.: *H. chrysaspis* Métrod
Misappl.: *H. cossus* ss. M. M. Moser, Arnolds et al. (1995), auct. pp., *H. eburneus* ss. auct. pp., *Limacium melizeum* ss. Ricken
24/11/94; 19/12/94; 25/09/95; 17/10/96; 25/11/96.

M – Hygrophorus lindtneri M. M. Moser (according to Candusso, 1997)

Syn.: *Hygrophorus carpini* Gröger; *H. unicolor* Gröger
24/11/94 (Rev. M. Candusso); 25/11/96.

Note: Arnolds (1990) considers *H. lindtneri* M. M. Moser, *H. carpini* Gröger, *H. unicolor* Gröger as different species, even if closely related; on the other hand Candusso (1997) unifies it under the same name.

M – Hygrophorus nemoreus (Pers.: Fr.) Fr.

24/11/94; 19/12/94; 17/10/96; 25/11/96.

M – Hygrophorus persoonii Arnolds var. **fuscovinosus** Bon

Syn.: *H. dichrous* Kühner & Romagn.
17/10/96.

Pluteaceae

Sw – Pluteus cervinus (Schaeff.) P. Kumm.

Syn.: *P. atricapillus* (Batsch) Fayod
25/09/95; 25/11/96.

Sw (Sh) – *Pluteus nanus* (Pers.: Fr.) P. Kumm.

Syn.: *P. griseopus* P. D. Orton, *P. satur* Kühner & Romagn., *P. griseoluridus* P. D. Orton

Excl.: *P. satur* ss. Romagn. (= *P. pallescens*)

25/09/95.

Note: Our samples were determined as *P. nanus* by means of Moser (1983).

Sw – *Pluteus plautus* (Weinm.) Gillet

Syn.: *P. semibulbosus* (Lasch.) Gillet, *P. granulatus* Bres., *P. gracilis* (Bres.) J. E. Lange, *P. depauperatus* Romagn., *P. boudieri* P. D. Orton, *P. punctipes* P. D. Orton, *P. dryophiloides* P. D. Orton, *P. punctatus* Wichansky

Misappl.: *P. hiatulus* ss. Romagn.

Excl.: *P. semibulbosus* ss. J. E. Lange, P. D. Orton (= *P. inquilinus*), *P. plautus* ss. A. Pearson (= *P. ephebeus*)

02/11/94; 11/10/95.

Note: The samples have been identified as *P. semibulbosus* according to Orton (1986). The nomenclature of Arnolds et al. (1995) has however been followed in accordance with Vellinga & Schreurs (1985) who, after studying several exsiccata from different parts of Europe, have come to the conclusion that *P. plautus* is an extremely variable species. "...it has not been possible to divide this taxon in discrete units, due to the many transitions in important characters as colour of the pileus, shape and size of the elements and the Q of the spores ..." (Vellinga, 1990).

Sw – *Pluteus romellii* (Britzelm.) Sacc.

Syn.: *P. lutescens* (Fr.) Bres.

17/10/96; 25/11/96.

Sh – *Volvariella hypopithys* (Fr.) Shaffer

Syn.: *V. plumulosa* (Quél.) Singer, *V. pubescentipes* (Peck) Singer

Misappl.: *V. pusilla* ss. Kühner & Romagn.

10/10/94; 25/09/95.

Strophariaceae

Sw – *Psilocybe fascicularis* (Huds.: Fr.) Noordel.

Syn.: *Hypholoma fasciculare* (Huds. Fr.) P. Kumm.

24/11/94; 19/12/94; 25/09/95; 17/10/96.

Tricholomataceae

P – *Armillaria mellea* (Vahl.: Fr.) P. Kumm.

10/10/94; 24/11/94; 18/10/95; 17/10/96.

Sw – *Armillaria tabescens* (Scop.: Fr.) Dennis et al. (according to Termoshuizen, 1995)

12/09/96.

- Sl – Clitocybe phaeophthalma** (Pers.) Kuyper
Syn.: *C. hydrogramma* ss. auct. pp.
10/10/94; 24/11/94; 25/09/95; 17/10/96; 25/11/96.
- Sl – Collybia butyracea** (Bull.: Fr.) P. Kumm.
24/11/94; 12/12/95; 15/01/96; 17/10/96.
Note: Most of the observed samples can be assigned to var. *asema* (Fr.: Fr.) Quél.
- Sl (P?) – Collybia cookei** (Bres.) J. D. Arnold
17/10/96.
- Sl – Collybia dryophila** (Bull.: Fr.) P. Kumm.
10/10/94.
- Sl – Collybia erythropus** (Pers.: Fr.) P. Kumm.
Syn.: *C. marasmioides* (Britzelm.) Bresinsky & Stangl, *C. bresadolae* (Kühner & Romagn.) Singer
24/11/94; 17/10/96.
- Sw – Collybia inodora** (Pat.) P. D. Orton
Syn.: *Micromphale inodorum* (Pat.) Svrcek
10/10/94.
- Sl – Collybia peronata** (Bolton: Fr.) P. Kumm.
Syn.: *C. urens* (Bull.: Fr.) P. Kumm.
25/09/95; 17/10/96.
- Sl (Sw) – Hemimycena cucullata** (Pers.: Fr.) Singer
Syn.: *Mycena. gypsea* (Fr.) Quél., *M. cucullata* (Pers.: Fr.) Bon, non *M. cucullata* (Ellis) Redhead
Excl.: *M. gypsea* ss. J. E. Lange (= *M. olida*)
24/11/94; 25/09/95; 17/10/96; 25/11/96.
- Sl – Hemimycena hirsuta** (Tode.: Fr.) Singer
Syn.: *H. crispula* (Quél.) Singer, *Omphalina crispula* Quél., *Mycena crispula* (Quél.) Kühner
24/11/94.
- Sw – Hohenbuehelia mastrucata** (Fr.: Fr.) Singer
Syn.: *Pleurotus mastrucatus* (Fr.: Fr.) Sacc.
12/09/96.
- Sw – Hydropus floccipes** (Fr.) Singer (according to Moser, 1983)
17/10/96.
- Sw – Hydropus scabripes** (Murrill) Singer
Syn.: *Mycena scabripes* (Murrill) Murrill
17/10/96.
- M – Laccaria laccata** s.l.
24/11/94; 19/12/94; 15/01/96; 17/10/96; 25/11/96.

- Sl** – **Lepista nuda** (Fr.: Fr.) Cooke
24/11/94.
- Sh** – **Lyophyllum deliberatum** (Britzelm.) Kreisel
Syn.: *L. infumatum* (Bres.) Kühner
17/10/96; 25/11/96.
- Sh** – **Lyophyllum paelochroum** Clemençon
Misappl.: *L. immundum* ss. auct.
24/11/94; 25/09/95; 17/10/96.
- Sh** – **Lyophyllum transforme** (Britzelm.) Singer (according to Moser, 1983)
Syn.: *L. trigonosporum* (Bres.) Kühner
17/10/96.
- Sw** – **Marasmiellus ramealis** (Bull.: Fr.) Singer
Syn.: *M. amadelphus* (Bull.: Fr.) M.M. Moser
19/12/94; 25/09/95; 17/10/96.
- Sw** – **Marasmiellus vaillantii** (Pers.: Fr.) Singer
Misappl.: *M. languidus* ss. Singer, Kühner & Romagn.
17/10/96; 25/11/96.
- Sl** – **Marasmius androsaceus** (L.: Fr.) Fr.
Syn.: *Setulipes androsaceus* (L.: Fr.) Antonín
10/10/94; 12/09/96; 17/10/96.
- Sl** – **Marasmius bulliardii** Quél.
17/10/96.
- Sl** – **Marasmius epiphyllodes** (Rea) Sacc. & Trott.
Syn.: *M. hederæ* (Kühner) J. Favre
17/10/96; 25/11/96.
- Sl (Sw)** – **Marasmius epiphyllus** (Pers.: Fr.) Fr.
24/11/94; 19/12/94; 17/10/96.
- Sl (P?)** – **Marasmius oreades** (Bolt.: Fr.) Fr.
Syn.: *M. caryophylleus* (Schaeff.) J. Schröt.
18/10/95.
- Sl** – **Marasmius quercophilus** Pouzar
Syn.: *Setulipes quercophilus* (Pouzar) Antonín
Misappl.: *M. splachnoides* ss. Fr., ss. auct. eur. pp.
10/10/94; 25/09/95; 13/05/96; 12/09/96, 17/10/96.
- Sw** – **Marasmius rotula** (Scop.: Fr.) Fr.
18/10/95; 12/09/96; 17/10/96.
- Sl (Sw)** – **Marasmius torquescens** Quél.
Syn.: *M. lupuletorum* ss. J.E. Lange, Ricken
25/09/95; 12/09/96; 17/10/96.
- Sl** – **Micromphale brassicolens** (Romagn.) P.D. Orton (according to Moser, 1983)
25/11/96.

- Sw – *Micromphale foetidum*** (J. Sowerby: Fr.) Singer
Syn.: *Marasmius foetidus* (J. Sowerby: Fr.) Fr.
25/11/96.
- Sl (Sw) – *Mycena acicula*** (Schaeff.: Fr.) P. Kumm.
24/11/94; 19/12/94; 25/09/95; 17/10/96.
- Sl – *Mycena epipterygia*** (Scop.: Fr.) Gray
Syn.: *M. citrinella* (Pers.: Fr.) P. Kumm., *M. citrinella* var. *alba* Oort, *M. viscosa* Maire
17/10/96.
- Sw – *Mycena erubescens*** Höhn.
Syn.: *M. fellea* J. E. Lange
24/11/94; 25/09/95; 17/10/96; 25/11/96.
- Sl – *Mycena flavescens*** Velen.
Syn.: *M. luteoalba* var. *sulphureomarginata* J. E. Lange
25/09/95.
- Sl – *Mycena flavoalba*** (Fr.) Quél.
25/11/96; 16/12/96.
- Sw – *Mycena galericulata*** (Scop.: Fr.) Gray
24/11/94.
- Sl – *Mycena galopus*** (Pers.: Fr.) P. Kumm.
24/11/94; 15/01/96; 17/10/96.
- Sw (Sl) – *Mycena leptcephala*** (Pers.: Fr.) Gillet
Syn.: *M. alcalina* var. *chlorinella* J. E. Lange, *M. chlorinella* (J. E. Lange) Singer,
M. leptcephala var. *minuta* Arnolds
Misappl.: *M. metata* ss. Kühner 1938, *M. ammoniaca* ss. auct.
24/11/94; 25/09/95; 17/10/96.
- Sw – *Mycena niveipes*** (Murrill) Murrill
Syn.: *M. jacobi* Maire, *M. pseudogalericulata* J. E. Lange
24/11/94.
- Sl – *Mycena pelianthina*** (Fr.: Fr.) Quél.
25/09/95; 17/10/96.
- Sl – *Mycena polyadelpa*** (Lasch) Kühner
25/11/96; 16/12/96.
- Sw – *Mycena polygramma*** (Bull.: Fr.) Gray
24/11/94; 17/10/96; 16/12/96.
- Sl – *Mycena pura*** (Pers.: Fr.) P. Kumm.
10/10/94; 24/11/94; 25/09/95; 17/10/96; 25/11/96; 16/12/96.
- Sl – *Mycena rorida*** (Fr.: Fr.) Quél.
Syn.: *M. clavicularis* ss. Ricken
25/09/95; 13/05/96; 17/10/96.

- Sl – *Mycena rosea*** (Bull.→) Gramberg
10/10/94; 24/11/94; 19/12/94; 25/09/95; 12/12/95; 17/10/96; 16/12/96.
- Sl – *Mycena sanguinolenta*** (Alb. & Schwein.: Fr.) P. Kumm
17/10/96.
- Sl – *Mycena stylobates*** (Pers.: Fr.) P. Kumm.
Syn.: *M. clavicularis* ss. J. E. Lange, *M. dilatata* ss. Ricken
24/11/94; 25/09/95; 17/10/96.
- Sw (Sl) – *Mycena vitilis*** (Fr.) Quél.
Misappl.: *M. filopes* ss. Kühner 1938, Kühner & Romagn.
Excl.: *M. vitilis* ss. Kühner 1938, Kühner & Romagn. (= *M. filopes*)
24/11/94; 19/12/94; 25/09/95; 20/11/95; 12/12/95; 15/01/96; 12/09/96;
17/10/96; 25/11/96; 16/12/96.
- Sw – *Panellus stypticus*** (Bull.: Fr.) P. Karst.
19/12/94; 13/05/96; 17/10/96; 25/11/96; 16/12/96.
- Sw – *Resupinatus applicatus*** (Batsch: Fr.) Gray
Syn.: *R. trichotis* (Pers.) Singer
19/12/94; 12/12/95; 17/10/96; 16/12/96.
- Sl – *Rickenella fibula*** (Bull.: Fr.) Reithelh.
24/11/94.
- Sh – *Tephrocybe murina*** (Batsch: Fr.) M. M. Moser (according to Moser, 1983)
24/11/94.
- M – *Tricholoma acerbum*** (Bull.: Fr.) Quél.
18/10/95; 17/10/96.
- M – *Tricholoma atosquamosum*** (Chevall.) Sacc.
24/11/94; 17/10/96.
- M – *Tricholoma basirubens*** (Bon) Riva & Bon (according to Riva, 1988)
18/10/95.
- M – *Tricholoma bresadolanum*** Clemençon (according to Riva, 1988)
24/11/94; 04/11/96.
- M – *Tricholoma columbetta*** (Fr.: Fr.) P. Kumm.
19/12/94; 04/11/96.
- M – *Tricholoma equestre*** (L.: Fr.) P. Kumm.
Syn.: *T. flavovirens* (Pers.: Fr.) S. Lundell
Misappl.: *T. auratum* ss. Bon, auct. pp.
18/10/95.
- M – *Tricholoma saponaceum*** (Fr.: Fr.) P. Kumm.
24/11/94; 17/10/96.
- M – *Tricholoma sciodes*** (Pers.) Martin
Syn.: *T. virgatum* var. *sciodes* (Pers.) Konrad & Maubl.
17/10/96.

- M** – *Tricholoma sejunctum* (J. Sowerby: Fr.) Quél.
24/11/94; 17/10/96.
- M** – *Tricholoma sulphureum* (Bull.: Fr.) P. Kumm.
24/11/94; 19/12/94; 17/10/96.
- M** – *Tricholoma ustale* (Fr.: Fr.) P. Kumm.
04/11/96.
- M** – *Tricholoma ustaloides* Romagn.
24/11/94; 25/09/95; 17/10/96.
- Sw (P?)** – *Xerula radicata* (Relhan: Fr.) Dörfelt
Syn.: *Collybia radicata* (Relhan: Fr.) Quél., *Oudemansiella radicata* (Relhan: Fr.) Singer
10/10/94; 25/09/95; 12709/96; 17/10/96.

Auriculariales

Auriculariaceae

- Sw** – *Auricularia mesenterica* (J. Dicks.: Fr.) Pers.
16/03/95; 15/01/96; 04/11/96 (Det.: De Vito A.).

Boletales

Boletaceae

- M** – *Aureoboletus gentilis* (Quél.) Pouzar
Syn.: *A. cramesinus* («Secr.») Watling, *Pulveroboletus gentilis* (Quél.) Singer,
P. cramesinus («Secr.») Singer –
10/10/94; 12/09/96.
- M** – *Boletus edulis* Bull.: Fr.
25/09/95; 17/10/96.
- M** – *Boletus ferrugineus* Schaeff.
Syn.: *B. spadiceus* Fr., *Xerocomus spadiceus* (Fr.) Quél., *B. lanatus* Rostk.
Excl.: *B. spadiceus* ss. Watling (= *B. subtomentosus*)
10/10/94.
- M** – *Boletus rhodopurpureus* Smotl. (according to Alessio, 1985)
Syn.: *B. purpureus* ss. Smotl.
25/09/95.
- M** – *Boletus satanas* Lenz
10/10/94.
- M** – *Boletus splendidus* C. Martin (according to Alessio, 1985)
Syn.: *B. lupinus* ss. Bres.
17/10/96.
- M** – *Boletus subtomentosus* L.: Fr.
Syn.: *Xerocomus subtomentosus* (L.: Fr.) Quél.
10/10/94; 17/10/96.

Paxillaceae

P? – **Omphalotus olearius** (DC.: Fr.) Singer (accordig to Kuyper, 1995)

Note: in accordance with Kuyper (1995) the authors prefer not to consider the synonymity (*O. illudens*) proposed by Arnolds & AL. (1995). *O. olearius* is in fact a south-European species which differs both macro- and microscopically from the north-European *O. illudens*.

17/10/96.

Cantharellales

Cantharellaceae

M – **Cantharellus aurora** (Batsch) Kuyper

Syn.: *C. lutescens* Pers.: Fr.

19/12/94.

M – **Cantharellus cibarius** Fr.: Fr.

10/10/94; 24/11/94; 19/12/94; 12/09/96; 17/10/96; 25/11/96.

M – **Cantharellus cinereus** (Pers.: Fr.) Fr.

Syn.: *Pseudocraterellus cinereus* (Pers.: Fr.) Kalamees

24/11/94; 19/12/94; 17/10/96.

M – **Cantharellus tubaeformis** Fr.: Fr.

Syn.: *C. infundibuliformis* Scop.: Fr.

24/11/94; 17/10/96; 25/11/96, 16/12/96.

Clavariaceae

Sh – **Clavulinopsis laeticolor** (Berk. & M.A.Curtis) R. H. Petersen

Syn.: *C. pulchra* (Peck) Corner, *Clavaria pulchra* Peck

24/11/94.

Sl – **Macrothyphula juncea** (Alb. & Schwein.: Fr.) Berthier

Syn.: *Clavaria juncea* (Alb. & Schwein.: Fr.) Fr., *Clavariadelphus junceus* (Alb. & Schwein.: Fr.) Corner

16/11/96.

Clavariadelphaceae

Sh – **Clavariadelphus pistillaris** (Fr.: Fr.) Donk

24/11/94; 17/10/96.

Clavulinaceae

Sh (M?) – **Clavulina cinerea** (Bull.: Fr.) J. Schröt.

Syn.: *Clavaria grisea* Pers.: Fr., *Clavaria cinerea* Bull.: Fr.

19/12/94; 17/10/96.

Sh (M?) – *Clavulina coralloides* (L.: Fr.) J. Schröt. ss. str.

Syn.: *C. cristata* (Holmsk.: Fr.) J. Schröt., *Clavaria cristata* Holmsk.: Fr., *Clavaria coralloides* L.: Fr.

10/10/94; 24/11/94; 19/12/94; 25/09/95; 17/10/96; 04/11/96; 25/11/96;
16/12/96.

Sh (M?) – *Clavulina rugosa* (Fr.) J. Schröt.

17/10/96; 25/11/96.

Craterellaceae

M – *Craterellus cornucopioides* (L.: Fr.) Pers.

24/11/94; 17/10/96; 25/11/96.

M – *Pseudocraterellus undulatus* (Pers.: Fr.) Rauschert

Syn.: *Cantharellus undulatus* (Pers.: Fr.) Fr., *P. sinuosus* (Fr.) Fr., *Craterellus crispus* Fr.

17/10/96.

Hydnaceae

M – *Hydnum repandum* L.: Fr.

24/11/94; 17/10/96; 25/11/96.

M – *Hydnum rufescens* Fr.: Fr.

24/11/94; 25/11/96; 16/12/96.

Cortinariales

Cortinariaceae

M – *Cortinarius albidus* Peck ssp. *europaeus* M. M. Moser (according to Moser, 1983)

18/10/95; 04/11/96.

M – *Cortinarius anomalus* (Fr.: Fr.) Fr. ss. str.

24/11/94; 19/12/94; 17/10/96; 04/11/96; 25/11/96.

M – *Cortinarius aprinus* Melot (according to Brandrud & al., 1990–1994)

Syn.: *C. sordescens* R. Henry

17/10/96; 04/11/96 (Det.: Moser M. M.).

M – *Cortinarius bicolor* Cooke

24/11/94; 25/11/96.

M – *Cortinarius brunneus* (Pers.: Fr.) Fr.

Syn.: *C. glandicolor* (Fr.: Fr.) Fr., *C. pseudorubricosus* Reumaux, *C. subtigrinus* Reumaux

Excl.: *C. glandicolor* ss. Kühner & Romagn.

25/09/95.

M – *Cortinarius bulliardii* (Pers.: Fr.) Fr.

10/10/94; 25/09/95; 18/10/95; 17/10/96.

- M – Cortinarius calochrous** (Pers.: Fr.) Fr.
24/11/94; 17/10/96; 04/11/96.
- M – Cortinarius castaneus** (Bull.: Fr.) Fr. (according to Moser, 1983)
17/10/96.
- M – Cortinarius claroflavus** R. Henry (according to Moser, 1983)
04/11/96.
- M – Cortinarius cliduchus** Fr. (according to Tartarat, 1988)
Syn.: *C. vitellinopes* J. Schröt.
24/11/94; 17/10/96.
- M – Cortinarius coerulescentium** R. Henry (according to Moser, 1983)
17/10/96.
- M – Cortinarius cotoneus** Fr. (according to Moser, 1983)
18/10/95; 17/10/96.
- M – Cortinarius cristallinus** Fr. ss. str.
Syn.: *C. barbatus* (Batsch: Fr.) Melot
Excl.: *C. cristallinus* ss. Kühner & Romagn. (= *C. eburneus*)
24/11/94; 18/10/95; 17/10/96.
- M – Cortinarius decipiens** (Pers.: Fr.) Fr. (according to Moëgne-Loccoz, 1990/91)
24/11/94; 17/10/96; 16/12/96.
- M – Cortinarius dibaphus** Fr. v. **nemoreus** R. Henry (according to Moser, 1983)
17/10/96.
- M – Cortinarius dionysae** R. Henry (according to Brandrud & al., 1990–1994)
17/10/96; 04/11/96.
- M – Cortinarius duracinus** Fr.
10/10/94; 24/11/94; 19/12/94; 17/10/96; 25/11/96; 16/12/96.
- M – Cortinarius infractus** (Pers.: Fr.) Fr.
10/10/94; 24/11/94; 17/10/96.
- M – Cortinarius lividoochraceus** (Berk.) Berk.
Syn.: *C. integerrimus* Kühner, *C. elatior* Fr., *C. pseudosalor* J. E. Lange, *C. mucifluoides* R. Henry
24/11/94; 19/12/94; 17/10/96; 04/11/96; 25/11/96.
- M – Cortinarius melanotus** Kalchbr. (according to Moser, 1983)
04/11/96.
- M – Cortinarius multiformis** Fr. ss. str.
17/10/96.
- M – Cortinarius paleaceus** Fr. ss. str.
24/11/94; 19/12/94; 17/10/96.
- M – Cortinarius prasinus** (Schaeff.: Fr.) Fr. (according to Brandrud & al., 1990–1994)
17/10/96.

- M – Cortinarius pseudofulgens** R. Henry (according to Kühner, 1953)
18/10/95.
- M – Cortinarius pseudosulphureus** P. D. Orton
Syn.: *C. citrinus* (J. E. Lange) R. Henry, *C. pseudosulphureus* R. Henry, *C. citrinus* P. D. Orton
17/10/96.
- M – Cortinarius rigidus** Scop.: Fr. ss. Kühner & Romagn.
17/10/96.
- M – Cortinarius rufoolivaceus** (Pers.: Fr.) Fr. (according to Brandrud & al., 1990–1994)
17/10/96.
- M – Cortinarius safranopes** R. Henry
24/11/94; 17/10/96.
- M – Cortinarius suaveolens** Bataille & Joachim (according to Moser, 1983)
17/10/96.
- M – Cortinarius subfulgens** P. D. Orton (according to Moser, 1983)
17/10/96.
- M – Cortinarius torvus** (Bull.: Fr.) Fr.
24/11/94; 25/09/95; 17/10/96.
- M – Cortinarius triumphans** Fr.
Syn.: *C. crocolitus* Quél.
17/10/96.
- M – Cortinarius trivialis** J. E. Lange
24/11/94; 19/12/94; 18/10/95; 17/10/96.
- M – Cortinarius uraceus** Fr. ss. J. E. Lange
Excl.: *C. uraceus* ss. Bres., non ss. Kühner, Arnold (= *C. viridipes*), ss. M. M. Moser
17/10/96; 25/11/96; 16/12/96.
- M – Cortinarius venetus** (Fr.: Fr.) Fr.
24/11/94; 17/10/96.
- M – Cortinarius violaceus** (L.: Fr.) Gray
Syn.: *C. hercynicus* (Pers.) M. M. Moser
17/10/96.
- M – Hebeloma crustuliniforme** (Bull.) Quél. ss. str.
Syn.: *H. alpinum* (J. Favre) Bruchet, *H. ochroalbidum* Bohus, *H. crustuliniforme* var. *tiliae* Bresinsky
Excl.: *H. crustuliniforme* ss. Bres., Bruchet, Cetto (= *H. velutipes* ss. Boekhout)
24/11/94; 19/12/94; 25/09/95; 15/01/96; 17/10/96.

- M – Hebeloma saccariolens** Quél. ss. str.
Excl.: *H. saccariolens* ss. Cetto (= *H. gigaspermum*); ss. Konrad & Maubl.
(= *H. pallidoluctuosum*)
04/11/96 (Det.: Vesterholt J.).
- M – Hebeloma sinapizans** (Fr.) Gillet
Excl.: *H. sinapizans* ss. J. E. Lange (= *H. edurum*)
24/11/94; 18/10/95; 17/10/96; 04/11/96.
- M – Inocybe asterospora** Quél.
25/09/95; 17/10/96; 25/11/96.
- M – Inocybe bongardii** (Weinm.) Quél.
Syn.: *I. pisciodora* Donadini & Rioussset
24/11/94.
- M – Inocybe cincinnata** (Fr.: Fr.) Quél. var. major (S. Peters.) Kuyper
Syn.: *I. phaeocomis* (Pers.) Kuyper var. major (S. Peters.) Kuyper
24/11/94; 19/12/94.
- M – Inocybe cookei** Bres.
17/10/96.
- M – Inocybe flocculosa** (Berk.→) Sacc.
Syn.: *I. subtigrina* Kühner, *I. gausapata* Kühner
Misappl.: *I. abjecta* ss. J. E. Lange, *I. tigrina* ss. auct. pp., *I. lucifuga* ss. auct. pp.
10/10/94; 24/11/94; 17/10/96.
- M – Inocybe fuscidula** Velen.
Syn.: *I. virgatula* Kühner, *I. hypophaea* Furrer – Ziogas, *I. brunneoatra*
(R. Heim.) P. D. Orton
24/11/94; 17/10/96.
- M – Inocybe geophylla** (Fr.: Fr.) P. Kumm.
24/11/94; 19/12/94; 17/10/96; 25/11/96.
- M – Inocybe glabripes** Ricken
Syn.: *I. microspora* J. E. Lange, *I. parvispora* Alessio
24/11/94; 17/10/96.
- M – Inocybe mixtilis** (Britzelm.) Sacc.
24/11/94.
- M – Inocybe obscurobadia** (J. Favre) Grund & D. E. Stuntz
Syn.: *I. tenuicystidiata* E. Horak & Stangl
Misappl.: *I. leptocystis* ss. auct.
17/10/96.
- M – Inocybe petiginosa** (Fr.: Fr.) Gillet
24/11/94; 17/10/96; 25/11/96.
- M – Inocybe praetervisa** Quél.
10/10/94.

M – *Inocybe pusio* P. Karst.

24/11/94; 17/10/96.

M – *Inocybe rimosa* (Bull.: Fr.) P. Kumm.

Syn.: *I. fastigiata* (Schaeff.) Quél., *I. perlata* (Cooke) Sacc., *I. obsoleta* Romagn.
10/10/94; 24/11/94; 17/10/96.

M – *Inocybe splendens* R. Heim.

Syn.: *I. terrifera* Kühner
17/10/96.

M – *Inocybe splendens* R. Heim. var. *phaeoleuca* (Kühner) Kuyper

10/10/94; 24/11/94; 17/10/96.

M – *Inocybe tenebrosa* Quél.

Syn.: *I. atripes* Atk.
24/11/94; 17/10/96.

Crepidotaceae

Sw – *Crepidotus autochthonus* J. E. Lange

Syn.: *C. fragilis* Joss.
25/09/95 (Rev. B. Senn-Irlet).

Sl – *Crepidotus epibryus* (Fr.: Fr.) Quél.

Syn.: *C. herbarum* (Peck) Sacc., *Pleurotellus herbarum* (Peck) Singer, *P. hypnophilus* (Berk.) Fayod, *P. chioneus* (Pers.) Kühner, *C. pubescens* (J. C. Sowerby) J. Schröt., non *C. pubescens* Bres., *P. graminicola* Fayod
Excl.: *C. epibryus* ss. M. M. Moser, auct. neerl. (= *C. subverrucisporus*)
24/11/94; 19/12/94 (Rev.: Senn-Irlet B.); 16/03/95; 12/12/95; 16/12/96.

Sw – *Crepidotus lundellii* Pilat

Syn.: *C. amygdalosporus* Kühner & Romagn., *C. subtilis* P. D. Orton
19/12/94

Gomphales

Ramariaceae

M? – *Ramaria fennica* (P. Karst.) Ricken

Syn.: *R. fumigata* (Peck.) Corner
24/11/94; 17/10/96.

M? – *Ramaria obtusissima* (Peck) Corner (according to Jülich, 1989)

10/10/94.

Lycoperdales

Lycoperdaceae

Sh – Bovista aestivalis (Bonord.) Demoulin

Syn.: *B. polymorpha* (Vittad.) Kreisel, *B. pusilliformis* (Kreisel) Kreisel, *Lycoperdon pusilliforme* Kreisel, *L. furfuraceum* Schaeff.

Misappl.: *L. ericetorum* ss. auct. pp., *L. pusillum* ss. Cetto
10/10/94.

Sh – Lycoperdon atropurpureum Vittad. (according to Jülich, 1989)

10/10/94; 24/11/94; 16/03/95.

Sh – Lycoperdon molle Pers.: Pers.

10/10/94; 24/11/94; 19/12/94; 12/09/96.

Sh – Lycoperdon perlatum Pers.: Pers.

10/10/94; 24/11/94; 19/12/94; 16/03/95; 17/10/96.

Sw – Lycoperdon pyriforme Schaeff.: Pers.

24/11/94.

Poriales

Coriolaceae

Sw – Hapalopilus rutilans (Pers.: Fr.) P. Karst.

Syn.: *H. nidulans* (Fr.: Fr.) P. Karst.

10/10/94; 19/12/94; 25/09/95.

Sw – Oligoporus subcaesius (A. David) Ryvarden & Gilb.

Syn.: *Postia subcaesia* (A. David) Jülich, *Spongiporus subcaesius* (A. David) A. David, *Tiromyces subcaesius* A. David

19/12/94; 16/12/96.

Sw – Trametes hirsuta (Wulfen: Fr.) Pilat

15/01/96.

Russulales

Russulaceae

M – Lactarius aspideus (Fr.: Fr.) Fr. var. *flavidus* Boud.

25/09/95.

M – Lactarius azonites Bull.: Fr.

Misappl.: *L. fuliginosus* Konrad & Moubl.

10/10/94; 24/11/94; 25/09/95; 17/10/96.

M – Lactarius chrysorrheus Fr.

24/11/94; 19/12/94; 25/09/95; 12/09/96; 17/10/96; 25/11/96; 16/12/96.

M – Lactarius circellatus Fr.

Missappl.: *L. pyrogalus* ss. Rick.

04/11/96.

- M – Lactarius decipiens** Quél.
17/10/96; 25/11/96; 16/12/96.
- M – Lactarius insulsus** (Fr.: Fr.) Fr.
Misappl.: *L. zonarius* ss. auct.
Excl.: *L. insulsus* ss. J. E. Lange (= *L. acerrimus*)
10/10/94; 24/11/94; 17/10/96.
- M – Lactarius piperatus** (L.: Fr.) Pers.
24/11/94; 27/06/95; 18/10/95; 18/06/96.
- M – Lactarius subumbonatus** Lindgr. (according to Bon, 1980)
Syn.: *L. serifluus* ss. Neuh.
24/11/94; 19/12/94; 17/10/96; 16/12/96.
- M – Lactarius uvidus** (Fr.: Fr.) Fr.
10/10/94; 24/11/94; 25/09/95; 17/10/96; 04/11/96.
- M – Lactarius vellereus** (Fr.: Fr.) Fr.
17/10/96.
- M – Russula acrifolia** Romagn.
Misappl.: *R. densifolia* ss. J. E. Lange, Schaeff.
17/10/96.
- M – Russula albonigra** (Krombh.) Fr.
10/10/94; 19/12/94.
- M – Russula cyanoxantha** Schaeff.: Fr.
24/11/94; 18/10/95; 17/10/96; 04/11/96.
- M – Russula decipiens** (Singer) Svrcek
Syn.: *R. maculata* Quél. *var. decipiens* Singer
10/10/94; 19/12/94; 25/09/95; 12/09/96; 17/10/96.
- M – Russula delica** Fr. ss. str.
10/10/94; 17/10/96.
- M – Russula foetens** Pers.: Fr.
25/09/95; 17/10/96.
- M – Russula fragilis** (Pers.: Fr.) Fr. ss. str.
24/11/94; 17/10/96; 04/11/96; 16/12/96.
- M – Russula heterophylla** (Fr.: Fr.) Fr.
10/10/94; 25/09/95; 12/09/96.
- M – Russula laurocerasi** Melzer
17/10/96.
- M – Russula luteotacta** Rea
10/10/94; 25/09/95; 17/10/96.
- M – Russula maculata** Quél.
10/10/94; 24/11/94; 25/09/95; 17/10/96.
- M – Russula nigricans** (Bull.→) Fr.
19/12/94; 16/12/96.

- M – *Russula pectinata*** Fr. ss. str.
10/10/94.
- M – *Russula persicina*** Krombh.
10/10/94; 25/09/95; 17/10/96.
- M – *Russula risigallina*** (Batsch) Sacc.
Syn.: *R. chamaeleontina* Fr.
Misappl.: *R. lutea* ss. Schaeff., auct. neerl.
10/10/94; 19/12/94; 25/09/95; 16/12/96; 17/10/96; 25/11/96.
- M – *Russula rosea*** Pers.
Syn.: *R. lepida* Fr., *R. rosacea* (Pers.) Gray
25/09/95; 25/11/96.
- M – *Russula rubroalba*** (Singer) Romagn. (according to Romagnesi, 1967)
10/10/94.
- M – *Russula straminea*** Malençon (according to Moser, 1983)
25/09/95.
- M – *Russula vesca*** Fr.
10/10/94; 27/06/95; 18/06/96; 12/09/96; 17/10/96; 25/11/96.
- M – *Russula vinosobrunnea*** (Bres.) Romagn.
10/10/94.

Stereales

Stereaceae

- Sw – *Stereum gausapatum*** (Fr.: Fr.) Fr.
19/12/94.
- Sw – *Stereum hirsutum*** (Willd.: Fr.) Pers.
19/12/94; 12/12/95; 16/12/96.
- Sw – *Stereum ochraceo-flavum*** (Schwein.) Ellis
Syn.: *S. rameale* (Pers.: Fr.) Burt (non *S. rameale* [Berk.] Masee), *S. ochroleucum* Bres.
19/12/94; 12/12/95; 16/12/96.
- Sw – *Terana coerulea*** (Lam.: Fr.) O.K.
Syn.: *Pulcherricium caeruleum* (Lam.: Fr.) Parm.
19/12/94; 12/12/95; 04/11/96; 16/12/96.

Thelephorales

Bankeraceae

- M – *Phellodon confluens*** (Pers.) Pouzar
Syn.: *Hydnum confluens* Pers., *H. amicum* Quéél., *P. amicus* (Quéél.) Banker
24/11/94.

M – Phellodon melaleucus (Swartz: Fr.) P. Karst.

Syn.: *Hydnum melaleucum* Swartz: Fr.; *P. connatus* (C. F. Schulz: Fr.) P. Karst.;

P. graveolens (Pers.) P. Karst.

04/11/96.

M – Phellodon niger (Fr.: Fr.) P. Karst.

17/10/96.

Thelephoraceae

M – Hydnum concrescens (Pers.) Banker ss. str.

Syn.: *H. velutinum* var. *zonatum* (Fr.) Maas Geest., *Hydnum concrescens* Pers.,

Hydnum zonatum Fr.

Misappl.: *H. scrobiculatum* ss. Donk, *Hydnum scrobiculatum* ss. auct. neerl.

24/11/94; 25/09/95; 18/10/95; 17/10/96; 04/11/96; 25/11/96.

M – Sarcodon joeides (Pass.) Bat.

Syn.: *S. inopinatus* Donk; *S. commutatus* Boud. & Galz.

04/11/96 (Det.: Christensen M.)

M – Thelephora anthocephala (Bull.: Fr.) Fr.

Syn.: *T. clavularis* Fr., *T. digitata* Fr.

25/11/96.

Tremellales

Exidiaceae

Sw – Exidia plana (Wiggers) Donk

Misappl.: *Exidia glandulosa* ss. Neuh.

Excl.: *Exidia glandulosa* ss. Donk, Kreisel

16/12/96.

Sw – Exidia recisa (Ditm.: Fr.) Fr.

16/12/96.

Sw – Exidia truncata Fr.: Fr.

Misappl.: *Exidia glandulosa* ss. Donk, Kreisel

16/03/95; 13/03/96; 15/01/96; 16/12/96.

Tremellaceae

Sw – Tremella mesenterica Retz.: Fr.

16/03/95; 15/01/96; 04/11/96.

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References

- Alessio C. L. 1985. Fungi Europaei: *Boletus* Dill. ex L. G. Biella, Saronno, 712 pp.
- Antonin V. & Noordeloos M. E. 1993. Libri Botanici vol. 8. A monograph of *Marasmius*, *Collybia* and related genera in Europe. Part 1: *Marasmius*, *Setulipes* and *Marasmiellus*. IHW, Eching, 229 pp.
- Arnolds E. 1981. Ecology and coenology of macrofungi in grasslands and moist heathlands in Drenthe, the Netherlands. Part 1. Introduction and sinecology. *Bibliotheca Mycologica*, **83**: 407 pp.
- Arnolds E. 1990. *Hygrophorus* Fr. In: Bas C., Kuyper T. W., Noordeloos M. E. & Vellinga E. C. (eds.). *Flora Agaricina Neerlandica*, vol. 2, A. A. Balkema, Rotterdam, Brookfield, pp. 115–133.
- Arnolds E., Kuyper Th. W. & Noordeloos E. M. (eds.) 1995. *Overzicht van de paddestoelen in Nederland*. Nederlandse Mycologische Vereniging, Wijster, Nederland, 872 pp.
- Arnolds E., Opdam A., Van Steenis W. & De Vries B. 1994. Mycocoenology of stands of *Fagus sylvatica* L. in the northeastern Netherlands. *Phytocoenologia*, **24**: 507–530.
- Barazzuoli P., Guasparri G. & Salleolini M. 1993. Il Clima. In: Giusti F. (ed.). *La storia naturale della Toscana meridionale*. A. Pizzi, Cinisello Balsamo, Milano, 141–171.
- Barsacchi M., Bettini D., Bussotti F. & Selvi F. 1997 – I popolamenti di *Quercus petraea* (Matt.) Lieb. del bosco di Tatti. *Monti e Boschi*, **4**: 22–28.
- Bertault R. 1982. Contribution à la flore mycologique de la Catalogne. *Acta Botanica Barcinonensia*, **34**: 6–35.
- Bogoev V., Gyosheva M. & Dimcheva M. 1993. Quantitative characterization of soil microbocenosis and macrofungi in a forest association *Quercus cerris* in the floristic region – Tundza hilly region. *Annuaire de l'U. de Sofia*, livre 3: *Microbiologie et biotechnologie*, **82-83-84**: 137–147.

- Bohus G. & Babos M. 1967. Mycocoenological investigation of acidophilous deciduous forests in Hungary. *Bot. Jb.*, **87** (3): 304–360.
- Bon M. 1980. Clé monographique du genre *Lactarius* (Pers.: Fr.) S. F. Gray. *Doc. Myc.*, **X** (40): 1–85.
- Bon M. 1983. Ecologie des macromycètes dans le Sud-Amiénois. *Cryptog. Mycol.* **4**: 207–219.
- Bon M. & Gehu J. M. 1973. Unités supérieures de végétation et récoltes mycologiques. *Doc. Myc.*, **6**: 1–40.
- Breitenbach J. & Kränzlin F. 1981–1995 – Champignons de Suisse/Fungi of Switzerland. Edition Mykologia, Lucerne. Vol. 4.
- Brandrud T. E., Lindström H., Marklund H., Melot J. & Muskos S. 1990–1994. *Cortinarius*. Flora photographica (version française). Ed. Cortinarius HB, Matfors, Suède. Vol. 3.
- Bujakiewicz A. 1992. Macrofungi on soil in deciduous forests. In: W. Winterhoff (ed.). *Fungi in Vegetation Science*, pp. 49–78.
- Candusso M. 1997. *Fungi Europaei: Hygrophorus* s.l.. Basso, Alassio, 784 pp.
- Cappelli A. 1984. *Fungi Europaei: Agaricus* L.: Fr. ss. Karsten (*Psalliota* Fr.). G. Biella, Saronno, 560 pp.
- Comunità Montana Val di Cecina 1990. Foreste di Berignone – Tatti e Montefoli. Itinerari naturalistici. S.E.L.C.A., Firenze.
- Courtecuisse R. 1984. Les champignons des principaux types de forêts caducifoliées du Nord de la France. I. Les hêtraies et chênaies-charmaies. *Bull. Soc. Myc. Nord.*, **35**: 27–43.
- Courtecuisse R. 1986. Contribution à la connaissance de la flore fongique du Morbihan et de quelques Départements voisins. I. *Doc. Myc.*, **16** (62): 1–22.
- Dallan L., Raggi G., Squarci G., Taffi L. & Trevisan L. 1969. Note illustrative della Carta Geologica d'Italia: F. 112 Volterra. Servizio Geologico Italiano.
- Darimont F. 1973. Recherches mycosociologiques dans les forêts de Haute Belgique. *Mem. Inst. Roy. Sc. Nat. Belg.*, 220 pp.
- Fellner R. & Soukup F. 1991. Mycological monitoring in the air-polluted regions of the Czech Republic. *Commun. Inst. Forest. Cech.*, **17**: 125–137.
- Fellner R. 1993. Air pollution and mycorrhizal fungi in central Europe. In: Pegler D. N., Boddy L., Ing B. & Kirk P. M. (eds). *Fungi of Europe: Investigation, Recording and Conservation*. Royal Botanic Gardens, Kew, pp. 239–250.
- Giannini E. & Tongiorgi M. 1959. Stratigrafia Neogenica Toscana. – L'arenaria elveziana di Ponsano (Volterra). *Bol. Soc. Geol. It.*, **78**: 83–100.
- Hawksworth D. L., Kirk P. M., Sutton B. C. & Pegler D. N. 1995. *Ainsworth & Bisby's Dictionary of the Fungi*. International Mycological Institute, Egham, Surrey TW20 9TY (UK), 616 pp.

- Heinemann P. & Darimont F. 1956. Premières indications sur les relations entre les groupements végétaux et les champignons en Belgique. *Les Naturalistes Belges*, **37**: 141–155.
- Jülich W. 1989. Guida alla determinazione dei funghi. Vol. 2. *Aphylophorales, Heterobasidiomycetes, Gastromycetes*. Saturnia, Trento, 597 pp.
- Kühner R. & Romagnesi H. 1953. Flore analytique des champignons supérieurs (Agarics, Bolets, Chanterelles). Masson, Paris, France, 556 pp.
- Kuyper T. W. 1994. Fungal species diversity and forest ecosystem functioning in the Netherlands. *Nato Asi Series*, **I** (20): 99–122.
- Kuyper T. W. 1995: *Omphalotus* Fay. In: Bas C., Kuyper T. W., Noordeloos M. E. & Vellinga E. C. (eds.). *Flora Agaricina Neerlandica*, vol. 3, A. A. Balkema, Rotterdam, Brookfield, pp. 88–89.
- Galli R. 1985. Gli igrofori delle nostre regioni. La Tipotecnica, Milano, 164 pp.
- Laganà A., Salerni E., Perini C., Barluzzi C. & De Dominicis V. 1996. Studi preliminari di comunità fungine in querceti decidui su terreno calcareo (Toscana centro-meridionale). *Mic. Ital.*, **1**: 13–22.
- Lisiewska M. 1974. Macromycetes of beech forests within the eastern part of the *Fagus* area in Europe. *Acta Mycologica*, **10** (1): 3–72.
- Malençon G. & Bertault R. 1971. Champignons de la Péninsule Ibérique. *Acta Phytotax. Barcinonensia*, **8**: 5–97.
- Malençon G. & Bertault R. 1972. Champignons de la Péninsule Ibérique. IV – Les Iles Baléares. *Acta Phytotax. Barcinonensia*, **11**: 5–64.
- Marchand A. 1980. Champignons du Nord et du Midi. Tome 6: Lactaires et Pholiotés. Diffusion Hachette, 291 pp.
- Moëgne-Loccoz P., Reumaux P. & Henry R. 1990/91. Atlas des Cortinaires. Fédération Mycologique Dauphiné-Savoie, Annecy-Seynod.
- Moser M. 1983. Die Röhrlinge und Blätterpilze. Fischer, Stuttgart/New York, 533 pp.
- Orton P. D. 1986. British Fungus Flora: 4. *Pluteaceae: Pluteus & Volvariella*. Royal Botanic Garden, Edinburgh, 98 pp.
- Perini C., Barluzzi C. & De Dominicis V. 1993. Fungal communities in mediterranean and submediterranean woodlands. In: Pegler D. N., Boddy L., Ing B. & Kirk P. M. (eds.). *Fungi in Europe: Investigation, Recording and Conservation*. Royal Botanic Gardens, Kew, pp. 77–92.
- Brummitt & Powell C. E. (eds.) 1992. *Authors of plant names*. Royal Botanic Gardens, Kew, 732 pp.
- Riva A. 1988. *Fungi Europaei: Tricholoma* (Fr.) Staude. G. Biella, Saronno, 618 pp.
- Romagnesi H. 1967. *Les Russules d'Europe et d'Afrique du Nord*. Bordas, Paris, 1002 pp.

- Salerni E., Laganà A., Perini C., Barluzzi C. & De Dominicis V. 1995. Studi preliminari di comunità fungine in cerrete acidofile della Toscana centro-meridionale. *Mic. Ital.*, **3**: 7–16.
- Schlechte G. 1991. Zur Struktur der Basidiomyceten – Flora von unterschiedlich immissionsbelasteten Waldstandorten in Südniedersachsen unter besonderer Berücksichtigung der Mycorrhizabildung. Jahn u. Ernst, Hamburg, 224 pp.
- Tartarat A. 1988. Flore analytique des cortinaires. Edition Fédération Mycologique du Dauphiné-Savoie, 320 pp.
- Termorshuizen A. J. 1995. *Armillaria* (Fr.: Fr.) Staude. In: Bas C., Kuyper T. W., Noordeloos M. E. & Vellinga E. C. (eds.). *Flora Agaricina Neerlandica*, vol. 3, A.A. Balkema, Rotterdam, Brookfield, pp. 34–39.
- Thoen D. 1970. Etude mycosociologique de quelques associations forestières des districts picardo-brabançon, mosan et ardennais de Belgique. *Bull. Rech. Agr. Gembloux*, **5**: 309–326.
- Thoen D. 1971. Etude mycosociologique de quelques associations forestières des districts picardo-brabançon, mosan et ardennais de Belgique. *Bull. Rech. Agr. Gembloux*, **6**: 215–243.
- Thorntwaite C. W. 1948. An approach toward a Rational Classification of Climate. *Geogr. Review*, **38**: 55–94.
- Vellinga E. C. & Schreurs J. 1985. Notulae ad floram agaricam Neerlandicam. VIII *Pluteus* Fr. in West Europe. *Persoonia*, **12** (4): 337–373.
- Vellinga E. C. 1990. *Pluteus* Fr. In: Bas C., Kuyper T. W., Noordeloos M. E. & Vellinga E. C. (eds.). *Flora Agaricina Neerlandica*, vol. 1, A. A. Balkema, Rotterdam, Brookfield, pp. 31–55.
- White L. W. 1941. A Monograph of the Genus *Rutstroemia* (Discomycetes)*. *Lloydia*, **1** (3): 153–188.