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THE MYCOLOGICAL FLORA OF THE NATURE RESERVE "BOSCO ROCCONI" (ITALY, SOUTHERN TUSCANY): A CONTRIBUTION. 9TH PART. ADDENDA ET CORRIGENDA

Abstract

Here we report the list of species from Bosco Rocconi, collected and identified in the last few years. In addition, some taxonomic corrections are also reported for previously published taxa. Among the most interesting species, Tephroderma fuscopallens*, a newly described tricholomatoid species, so far reported only from France and Turkey, was found in the reserve. A total of 465 species of* Agaricomycetes *was collected in the reserve.*

Riassunto

Negli ultimi cinque anni, ulteriori indagini ci hanno consentito di reperire varie nuove specie a "Bosco Rocconi" (GR). Inoltre è presentata una serie di correzioni delle determinazioni riportate negli articoli precedenti. Tra le specie più interessanti, abbiamo il ritrovamento di Tephroderma fuscopallens*, una specie del clade tricolomatoide nuova per l'Italia, finora trovata solo in Francia e in Turchia. Il totale delle specie determinate sale così a 465 taxa.*

8th part: (Clericuzio, 2019).

CORRIGENDA

1. *Cantharellus cibarius* Fr. becomes ***Cantharellus pallens*** Pilát (= *C. subpruinosus* Eyssart. & Buyck)

Common and widespread *C. cibarius* turned out to be a collective species (Eyssartier & Buyck, 2000). The binomial *C. cibarius* should be maintained only for a species growing in boreal habitats, as montane *Fagus or Picea* forests.

62. *Hohenbuehelia auriscalpium* (Maire) Singer

This entry should be deleted: our finding at Rocconi was very likely only a form of the more common *H. geogenia* (DC.) Singer [number 63, present name: ***Hohenbuehelia petaloides*** (Bull.) Schulz.].

113. *Hemimycena delectabilis* (Peck) Singer becomes ***Hemimycena crispata*** (Kühner) Singer

A successive finding of true *H. delectabilis* in a different site of the province (Follonica, Poggio tre cancelli), has convinced us that this determination was incorrect. N. 113 corresponds to *H. crispata*, a not rare species in Central Italy.

154. *Pseudoclitocybe obbata* (Fr.) Singer becomes ***Pseudoclitocybe cyathiformis*** (Bull.) Singer

Molecular studies have demonstrated that this collection belongs to more common *P. cyathiformis* (Vizzini et al., 2011). *P. obbata* was found by ourselves in another site of the Grosseto province (Scansano).

171. *Tricholoma ustale* (Fr.) P. Kumm.

This species should be deleted from the list: the Rocconi findings must all be assigned to ***Tricholoma quercetorum*** Contu (n. 165).

206. *Agaricus stramineus* Schäff. & Møller becomes ***Agaricus crocodilinus*** Murrill

Spanish mycologist Parra Sànchez (2013) definitely demonstrated that *A. stramineus* is only a form of *A. urinascens* (Schäff. & Møller) Singer (present name: *A. crocodilinus*).

269. *Hebeloma collariatum* Bruchet becomes ***Hebeloma dunense*** Corb. & Heim

After the monumental work by Beker *et al*. (2016), a great clarity could be achieved for the European species of this difficult genus. In particular, *H. dunense* is the correct name for both *H. collariatum* and *H. subcaespitosum* Bon.

274. *Hebeloma* cfr. *perpallidum* Moser becomes ***Hebeloma eburneum*** Malençon

H. eburneum is the correct name for *H. perpallidum* (Beker *et al*., 2016).

328. *Cortinarius platypus* M.M. Moser (M.M. Moser) becomes ***Cortinarius lilacinovelatus*** Reumaux & Ramm

The Rocconi specimens were assigned to *C. lilacinovelatus*, after a more thorough study. In addition, the morphological identity of the taxon *C. platypus* has gone through a marked change, after recent molecular studies (Liimatainen *et al*., 2014).

313. *Cortinarius basiroseus* Pears. ex Orton becomes ***Cortinarius griseovioleipes*** Moënne-Locc. & Reumaux

A color photo and description appeared on *Cortinarius* ibero-insulares (Grupo Ibero-Insular De Cortinariologos, 2007) has convinced us to accept this binomial for the Rocconi finding, also owing to the similar thermophilous habitat.

350. *Cortinarius subattenuatus* Carteret & Eyssart. becomes ***Cortinarius geraniolens*** Bidaud.

ADDENDA

Cantharellales, Cantharellaceae

416. *Pseudocraterellus sinuosus* (Fr.) Corner [= *P. undulatus* (Pers.) Rauschert]
Frequency: uncommon
Distribution: T

Clavulinaceae

417. *Clavulina rugosa* (Bull.) J. Schröt.
Frequency: 1 collection
Distribution: T

Hymenochaetales, Hymenochetaceae

418. *Hymenochaete rubiginosa* (Dicks.) Lév.
Frequency: occasional
Distribution: T

Schizoporaceae

419. *Schizopora paradoxa* (Schrad.) Donk
Frequency: fairly frequent
Distribution: T

420. *Lagarobasidium detriticum* (Bourdot) Jülich
Frequency: 1 collection (Querciolaie)
Distribution: T

421. *Xylodon pruni* (Lasch) Hjortstam & Ryvarden
Frequency: uncommon
Distribution: T

Polyporales, Polyporaceae

422. *Perenniporia ochroleuca* (Berk.) Ryvarden
Frequency: occasional
Distribution: T-M

423. *Skeletocutis percandida* (Malençon & Bertault) Jean Keller
Frequency: rare
Distribution: T-M

Phanerochetaceae
424. *Porostereum spadiceum* (Pers.) Hjortstam & Ryvarden
Frequency: 1 collection (Querciolaie)
Distribution: T

Meruliaceae
425. *Steccherinum ochraceum* (Pers.) Gray
Frequency: fairly frequent
Distribution: T

Boletales, Boletaceae
426. *Rubroboletus lupinus* (Fr.) Costanzo, Gelardi, Simonini & Vizzini (= *Boletus lupinus* Fr.)
Frequency: 1 collection (Rocchette di Fazio)
Distribution: M

Suillaceae
427. *Suillus collinitus* (Fr.) Kuntze
Frequency: 1 collection (Rocchette di Fazio)
Distribution: M

Agaricales, Hygrophoraceae
428. *Hygrocybe subglobispora* (P.D. Orton) Moser
Frequency: 1 collection
Distribution: T

429. *Hygrophorus lindtneri* Moser (incl.: *H. carpini* Gröger; *H. unicolor* Gröger)
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

Pterulaceae
430. *Radulomyces molaris* (Chaillet) M.P. Christ.
Frequency: occasional
Distribution: T

Stephanosporaceae

431. *Cristinia helvetica* (Pers.) Parmasto
Frequency: 1 collection (Querciolaie)
Distribution: T
Notes*:* An uncommon, interesting corticioid species, characterized by the grandinoid basidiome, and the rounded, cyanophilic spores. The present determination was confirmed by analysis of the ITS sequences (Alvalab, Spain).

***Marasmiaceae* s.l.**
432. *Hydropus atramentosus* (Kalchbr.) Kotl. & Pouzar
Frequency: 1 collection
Distribution: T

***Tricholomataceae* s.l.**
433. *Arrhenia rickenii* (Bres.) J.D. Arnold
Frequency: rare (Querciolaie)
Distribution: T-M
Notes: a rare and interesting species, little known to the mycological community.

434. *Omphalina pyxidata* (Bull.) Quél.
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

435. *Collybia cookei* (Bres.) J.D. Arnold
Frequency: uncommon
Distribution: T

436. *Hemimycena rickenii* (A.H. Sm.) Singer
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

437. *Mycena metata* (Secr. ex Fr.) P. Kumm.
Frequency: occasional
Distribution: T
Notes: In the 3rd part (Clericuzio, 2011), we wrote that this species was probably present in the reserve, but it was uneasy to tell apart, within the intricate group of *M. filopes* (Pers.) Singer. New findings have allowed us to recognize its presence with safety.

438. *Tephroderma fuscopallens* Musumeci & Contu
Frequency: 1 collection (Querciolaie)
Distribution: T

Description of our finding

Cap 1.5-2.5 cm, plane convex, strongly umbilicate, not striated for transparency when wet. Color dark sepia-brown, darker at centre, on drying fading to grey-brown.

Gills spaced, partly interwoven, strongly decurrent. Color light grey.

Stem 3-5 × 0.3-0.6 cm, cylindrical, slightly enlarged at the base; often compressed, concolorous with cap, brownish; covered by a white pruina, and with cottony mycelium residues at the base.

Flesh thin, ochraceous, smell weak, slightly herbaceous, taste mild.

Spores elliptical to sub-cylindrical, smooth, inamyloid, 5-7.5 × 3.2-4.5 µm, Q = 1.35-1.65.

Lamellar edge with scattered to abundant marginal hairs, claviform to sublageniform, thin-walled, of the same size of unripen basidia.

Cuticle a cutis of smooth hyphae, typically 3-5 µm wide, becoming broader in deeper layers. Pigment mainly membranaceous, sometimes slightly encrusting. Clamps present at most septa.

Habitat on a rotting *Quercus* trunk, at Querciolaie, 10/16/2016.

A species described a few years ago by Musumeci & Contu (2014), following a collection from Northern France (Alsace). Successively, it has been reported from the Black Sea coast of Turkey (Sesli & Topcu Sesli, 2016). The present finding from Rocconi is the first one from Italy. The habitat of our collection is noteworthy, as it was lignicolous, directly on a large oak trunk. The French original finding was in a broad-leaved wood (*Quercus* sp., *Carpinus* sp., *Fagus* sp.), and that from Turkey in a conifer wood (*Pinus* sp.), but in both cases the mushrooms were growing on the ground. The determination of our samples was possible thanks to the analysis of the ITS sequence, performed at Alvalab (Spain).

I agree with Musumeci and Contu in that *T. fuscopallens* might correspond to *Gerronema umbilicatum* (Fr.) Singer, in one of its many interpretations [not *Clitocybe umbilicata* (Schaeff.) P. Kumm. = *C. subspadicea* (J.E. Lange.) Bon & Chevassut]. The recent phylogenetic study of the tricholomatoid clade (= suborder *Tricholomatineae* Aime, Dentinger & Gaya) by Alvarado *et al.* (2018), places genus *Tephroderma* in a (sub)-clade positioned close to *Lyophyllaceae*, but outside the family core: the exact position of this clade, comprising also *Clitolyophyllum* and *Leucocybe*, is still to be found.

439. *Tephrocybe rancida* (Fr.) Donk
Frequency: 1 collection
Distribution: T

Entolomataceae

440. *Entoloma dichroum* (Pers.) P. Kumm.
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

441. *Entoloma hirtum* (Velen.) Noordel.
Frequency: rare
Distribution: T

442. *Entoloma sericeoides* (J.E. Lange) Noordel.
Frequency: uncommon (Rocchette di Fazio)
Distribution: T

443. *Entoloma sericellum* (Fr.) P. Kumm.
Frequency: rather rare
Distribution: T

444. *Rhodocybe melleopallens* P.D. Orton
Frequency: 1 collection
Distribution: T

Amanitaceae

445. *Amanita battarrae* (Boud.) Bon
Frequency: uncommon
Distribution: T-M

446. *Limacella glioderma* (Fr.) Maire
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

Pluteaceae

447. *Volvariella murinella* (Quél.) M.M. Moser ex Dennis, P.D. Orton & Hora
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

Agaricaceae

448. *Lepiota pseudohelveola* Kühner ex Hora
Frequency: rather rare
Distribution: T

449. *Macrolepiota subsquarrosa* (Locq.) Bon
Frequency: 1 collection
Distribution: T
Notes: A rather rare species, characterized, among the others, by its almost flattened cap, without any umbo, and by the pale colors. Unfortunately, the sole ITS marker is little informative in *Macrolepiota*.

450. *Tulostoma brumale* Pers.
Frequency: occasional
Distribution: T

Psathyrellaceae

451. *Coprinellus domesticus* (Bolton) Vilgalys, Hopple & Johnson
Frequency: 1 collection (Querciolaie)
Distribution: T

452. *Psathyrella dicrani* (A.E. Jansen) Kits van Wav.
Frequency: 1 collection
Distribution: T

Strophariaceae

453. *Pholiota lucifera* (Lasch.) Quél.
Frequency: 1 collection Rocchette di Fazio (River Albegna)
Distribution: T

Hymenogastraceae

454. *Gymnopilus decipiens* (Sacc.) P.D. Orton
Frequency: 1 collection
Distribution: T
Notes: An interesting and rather rare species, of which we have two more collections in the Grosseto province. Compared to the other two findings, the one from Rocconi was remarkable for the tiny size of the basidiomes (cap up to 1 cm), and the less bright colours. On the other hand, the microscopic traits were typical, in particular as concerns the cheilocystidia shape, which were strongly capitate in a significant number. In all three collections from Tuscany, the mushrooms were growing associated to *Erica arborea* L., on woody debris or sometimes apparently on the ground, but probably on buried wood instead.

Crepidotaceae

455. *Flammulaster muricatus* (Fr.) Watling
Frequency: 1 collection (Rocchette di Fazio)
Distribution: T

456. *Flammulaster subincarnatus* (Joss. & Kühner) Watling
Frequency: occasional
Distribution: T

457. *Inocybe agardhii* (N. Lund) P.D. Orton
Frequency: 1 collection Rocchette di Fazio (River Albegna)
Distribution: T
Notes: one of the few truly hygrophilous taxa of the reserve, associated with *Populus* sp. and *Salix* sp., found on the banks of the Albegna river. It was collected in the same place as *Hebeloma dunense* L. Corb. & R. Heim and *Pholiota lucifera* (Lasch) Quél.

Cortinariaceae

458. *Cortinarius majusculus* Kühner (= *C. alcalinophilus* Rob. Henry.)
Frequency: rather rare
Distribution: T
Notes: we prefer to use Kühner's binomial instead of *C. alcalinophilus*, as employed by the Scandinavian school. In fact, Henry's description refers to a species provided with much larger spores.

459. *Cortinarius flavoaurantians* Boccardo, Cleric. & Vizzini
Frequency: 1 collection Rocchette di Fazio
Distribution: T-M
Notes: The occurrence of this species at Rocconi has already been reported by ourselves (Clericuzio, 2017). In these last few years, at least two more growing sites have been found by ourselves in the Grosseto province. In addition, F. Boccardo found it in several more places in Liguria. This means that *C. flavoaurantians* is definitely not rare in Italy, as far as the right habitat is provided (thermophilous oaks).

460. *Cortinarius molochinus* Bidaud & Ramm
Frequency: rare (Rocchette di Fazio)
Distribution: M

Fig. 1. *Tephroderma fuscopallens.* Basidiomes. Photo by Marco Clericuzio

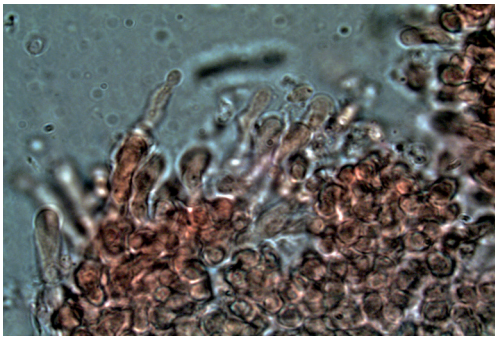

Fig. 2. *T. fuscopallens.* Marginal hairs of our collection. Photo by Marco Clericuzio

461. *Cortinarius ochraceopallescens* Moënne-Locc. & Reumaux
Frequency: uncommon
Distribution: T

462. *Cortinarius sublilacinopes* Bidaud, Moënne-Locc. & Reumaux
Frequency: 1 collection Rocchette di Fazio
Distribution: T

463. *Cortinarius assiduus* Mahiques, Ortega & Bidaud
Frequency: 1 collection (Querciolaie)
Distribution: M

464. *Cortinarius cinereobrunneolus* Chevassut & Henry
Frequency: 1 collection (Querciolaie)
Distribution: T

465. *Cortinarius (Telamonia)* sp. sect. *Bovini?*
Frequency: 1 collection
Distribution: ?
Notes: This collection belongs to non-hygrophanous *Telamonia*, and in particular to the group of the reddish-brown ones (*Biveli-Bulbosi, Subferruginei*, etc.). We could obtain the ITS sequences of this sample, and preliminary phylogenetic analysis places it near sect. *Bovini*.

As concluding remark of genus *Cortinarius*, we could confirm the identity of *Cortinarius chailluzi* Frøslev & T.S. Jeppesen (n. 322), by analysis of the ITS sequences. This is probably the first report of this rare species in Italy.

Russulales, Stereaceae

466. *Aleurodiscus disciformis* (DC.) Pat.
Frequency: 1 collection
Distribution: T-M

Notes: This species is not rare in thermophilous oak woods, where it grows preferentially on old trees, sometimes on dead ones. Anyway, it is easily overlooked, as it often grows high on the tree.

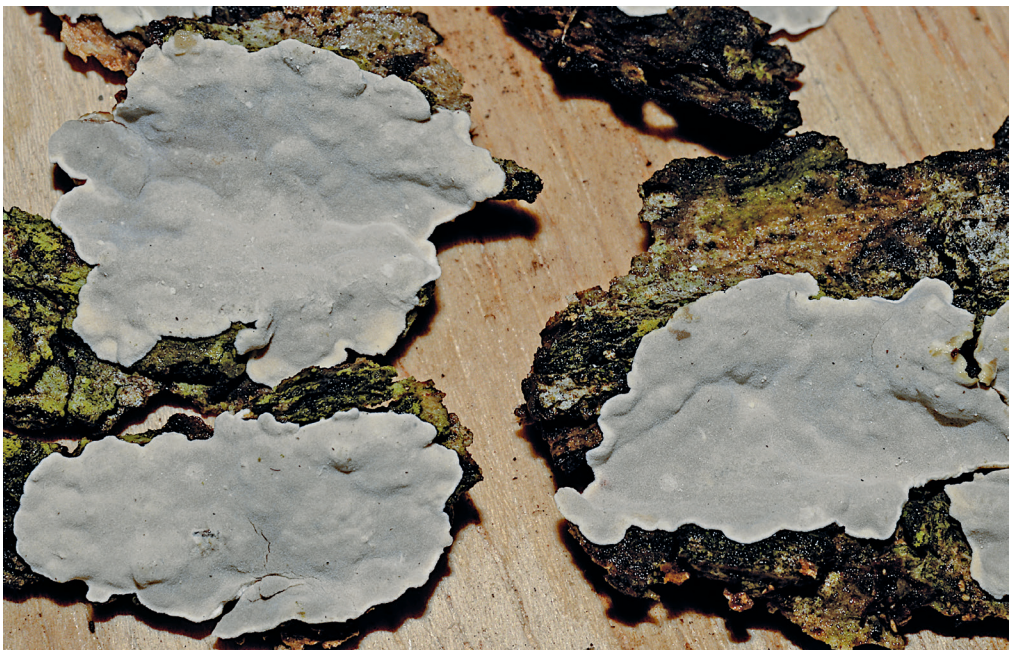

Fig. 3. *Aleurodiscus disciformis.* Specimens of the Rocconi collection. This fungus belongs to order *Russulales,* family *Stearaceae.* Photo by Marco Clericuzio

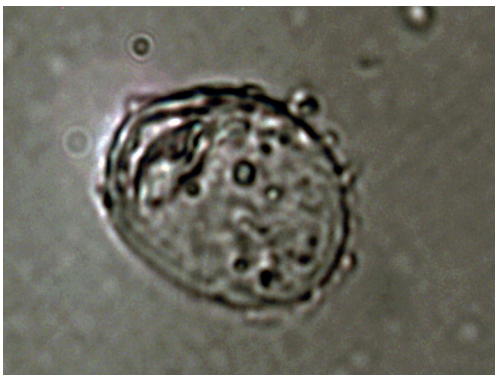

Fig. 4a. *A. disciformis.* The characteristic large, broadly ellipsoid, ornamented spore. Photo by Marco Clericuzio

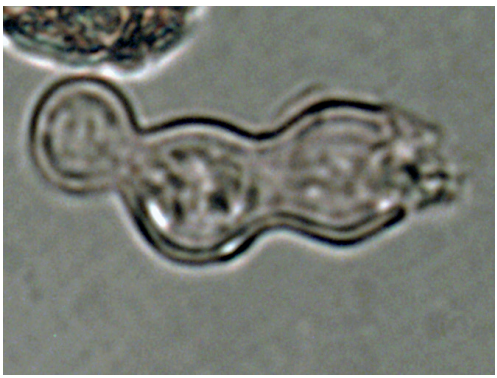

Fig. 4b. *A. disciformis.* A pluri-strangled gloeocystidium. Photo by Marco Clericuzio

FINAL LIST

Here is the final list. A capital **P** letter is added at the end of those species which are considered rare or localized. For these taxa, we propose protection, at least after inclusion in the regional red list (TRL, Tuscany red list of fungi).

CANTHARELLALES
Cantharellaceae
Cantharellus cinereus (Pers.) Fr.
Cantharellus ferruginascens P.D. Orton
Cantharellus pallens Pilát
Craterellus cornucopioides Pers.
Pseudocraterellus sinuosus (Fr.) Corner
Clavulinaceae
Clavulina coralloides (L.) Schröt.
[= *C. cristata* (Fr.) Schröt.]
Clavulina rugosa (Bull.) Schröt.
Hydnaceae
Hydnum rufescens Fr.

GOMPHALES
Clavariadelphaceae
Clavariadelphus pistillaris (Fr.) Donk
Gomphaceae
Ramaria flava (Schff.) Quél.
Ramaria formosa (Fr.) Quél.
Ramaria fumigata (Peck) Corner **P**
Phallaceae
Clathrus ruber P. Micheli ex Pers.
Mutinus caninus (Huds.) Fr.
Phallus impudicus L.

HYMENOCHAETALES
Hymenochaetacee
Phellinus torulosus (Pers.) Bourdot & Galzin
Hymenochaete rubiginosa (Dicks.) Lév.
Schizoporaceae
Schizopora paradoxa (Schrad.) Donk
Lagarobasidium detriticum (Bourdot) Jülich
Xylodon pruni (Lasch) Hjortstam & Ryvarden
Repetobasidiaceae
Rickenella fibula (Bull.) Raith.

THELEPHORALES
Bankeraceae
Hydnellum concrescens (Pers. ex Schw.) Bank.

POLYPORALES
Fomitopsidaceae
Daedalea quercina (L.) Pers.
Polyporaceae
Dichomitus campestris (Quél.) Domański & Orlicz
Hapalopilus rutilans (Pers.) Murrill
Perenniporia ochroleuca (Berk.) Ryvarden
Polyporus arcularius (Batsch) Fr.
Polyporus ciliatus Fr.
Polyporus tuberaster (Jacq. ex Pers.) Fr.
Trametes versicolor (L.) Pilát
Meruliaceae
Abortiporus biennis (Bull.) Singer
Byssomerulius corium (Pers.) Parmasto
[= *Meruliopsis corium* (Pers.) Ginns]
Gloeoporus dichrous (Fr.) Bres.
Steccherinum ochraceum (Pers.) Gray
Ganodermataceae
Ganoderma applanatum (Pers.) Pat.
Ganoderma lucidum (Fr.) Karst.
Phanerochaetaceae
Porostereum spadiceum (Pers.) Hjortstam & Ryvarden

RUSSULALES
Russulaceae
Lactarius acerrimus Britzel.
Lactarius azonites (Bull.) Fr.
Lactarius chrysorrheus Fr.
Lactarius decipiens Quél.
Lactarius fulvissimus Romagn.
Lactarius luridus (Pers.) Gray
Lactarius quietus (Fr.) Fr.
Lactarius quieticolor Romagn. **P**
Lactarius subumbonatus Lindgr.
Lactarius zonarius (Bull.) Fr.
Lactifluus piperatus (L.) Roussel
Lactifluus vellereus (Fr.) Kuntze
Lactifluus volemus (Fr.) Kuntze s.l.
Russula acrifolia Romagn.
Russula albonigra (Krombh.) Fr. var. *pseudonigricans* (Romagn.) Bon
Russula amoenicolor Romagn.
Russula anatina Romagn. **P**
Russula atropurpurea (Krombh.) Britzelm.
Russula aurea Pers.
Russula aurora Bres.
Russula carminipes Romagn.
Russula carpini Girard & Heinem.
Russula convivialis Sarnari
Russula cuprea J.E. Lange
Russula cyanoxantha (Schäff.) Fr.
Russula decipiens (Singer) Kühner & Romagn.
Russula delica Fr. s.l.
Russula fragilis Fr.
Russula galochroides Sarnari
Russula globispora (Blum) Bon
Russula graveolens Romell
Russula grisea Fr.
Russula heterophylla (Fr.) Fr.
Russula ilicis Romagn., Chevassut & Privat
Russula laeta Jul. Schäff.
Russula lepida Fr.
Russula lividopallescens Sarnari **P**

Russula lutensis Romagn.
Russula luteotacta (Fr.) Fr.
Russula maculata Quél.
Russula melliolens (Fr.) Fr.
Russula minutula Velen.
Russula nigricans Fr.
Russula odorata Romagn.
Russula parodorata Sarnari
Russula pelargonia Niolle
Russula persicina Krombh.
Russula persicina f. *alboflavella* Chiarello & Battistin
Russula praetervisa Sarnari
Russula pseudoaeruginea (Romagn.) Kuyper & Vuure
Russula purpurata (Crawshay) Romagn.
Russula risigallina (Batsch) Sacc.
Russula rubra (Fr.) Fr.
Russula rubroalba (Singer) Romagn.
Russula rutila Romagn.
Russula seperina Dupain
Russula sororia Fr.
Russula subfoetens W.G. Sm.
Russula sublevispora (Romagn.) Kühner & Romagn. **P**
Russula vesca Fr.
Russula vinosobrunnea (Bres.) Romagn.
Russula violeipes Quél.
Russula virescens (Schaeff.) Fr.
Russula zvarae Velen.
Auriscalpiaceae
Lentinellus ursinus (Fr.) Kühner
Stereaceae
Aleurodiscus disciformis (DC.) Pat.
Stereum hirsutum (Willd. ex Fr.) Gray

AGARICALES
Hygrophoraceae
Cuphophyllus colemannianus (Bloxam) Bon
[= *Hygrocybe colemanniana* (Bloxam) Orton & Watling] **P**
Cuphophyllus virgineus (Wulfen) Kovalenko
[= *Hygrocybe virginea* (Wulfen) Orton & Watling]
Gliophorus psittacinus (Schaeff.) Herink
[= *Hygrocybe psittacina* (Schaeff.) P. Kumm.]
Gliophorus irrigatus (Pers.) A.M. Ainsw. & P.M. Kirk
[= *Hygrocybe irrigata* (Pers.) Bon] **P**
Hygrocybe acutoconica (Clemençon) Singer
[= *H. persistens* (Britz.) Singer]
Hygrocybe conica (Schaeff.) P. Kumm.
Hygrocybe quieta (Kühner) Singer
Hygrocybe subglobispora (P.D. Orton) M.M. Moser
Hygrophorus arbustivus (Fr.) Fr.
Hygrophorus lindntneri M.M. Moser
Hygrophorus cossus (Sow.) Fr.
Hygrophorus discoxanthus (Fr.) Rea
Hygrophorus leucophaeoilicis Bon & Chevassut
Hygrophorus penarioides Jacobsson & Larss.
Hygrophorus persoonii Arnolds
Hygrophorus roseodiscoideus Bon & Chevassut
Hygrophorus russula (Schaeff.) Kauffman
Pleurotaceae
Hohenbuehelia petaloides (Bull.) Schulzer
[= *H. geogenia* (DC.) Singer]
Pleurotus ostreatus (Jacq.) P. Kumm.
Typhulaceae
Macrotyphula juncea (Alb. & Schwein.) Berthier
Radulomyces molaris (Chaillet ex Fr.) M.P. Christ.
Stephanosporaceae
Cristinia helvetica (Pers.) Parmasto
***Marasmiaceae* sl.**
Collybia cookei (Bres.) J.D. Arnold
Crinipellis scabella (Alb. & Schwein.) Murrill
Crinipellis tomentosa (Quél.) Singer
[= *C. subtomentosa* (Peck) Singer ss. Antonin & Noordel.]
Gymnopus dryophilus (Bull.) Murrill
Gymnopus erythropus (Pers.) Antonin, Halling & Noordel.
Gymnopus foetidus (Sowerby) J.L. Mata & R.H. Petersen
Gymnopus fusipes (Bull.) Gray
Gymnopus inodorus (Pat.) Antonin & Noordel.
Gymnopus peronatus (Bolton) Antonin, Halling & Noordel.
Hydropus atramentosus (Kalchbr.) Kotl. & Pouzar **P**
Hydropus floccipes (Fr.) Singer
Hydropus subalpinus (Höhn.) Singer
Marasmiellus candidus (Bolton) Singer
Marasmiellus omphaliformis (Kühner) Noordel.
Marasmiellus ramealis (Bull.) Singer
Marasmiellus vaillanti (Pers.) Singer
Marasmius bulliardi Quél.
Marasmius epiphyllus (Pers.) Fr.
Marasmius oreades (Pers.) Fr.
Marasmius quercophilus Pouzar
Marasmius rotula (Scop.) Fr.
Marasmius torquescens Quél.
Omphalotus olearius (DC.) Singer
Oudemansiella radicata (Rehlan) Singer
Rhodocollybia butyracea (Bull.) Lennox
Schizophyllum commune Fr.
Physalacriaceae
Armillaria mellea (Vahl.) P. Kumm.
Armillaria tabescens (Vahl.) P. Kumm.
Cylindrobasidum evolvens (Fr.) Jülich
Xerula pudens (Pers.) Singer
Fistulinaceae
Fistulina hepatica (Schaeff.) With.
***Tricholomataceae* sl.**
Arrhenia rickenii (Bres.) J.D. Arnold
Arrhenia spathulata (Fr.) Redhead
Arrhenia velutipes (P.D. Orton) Redhead, Lutzoni, Moncalvo & Vilgalys

Calocybe persicolor (Fr.) Singer
Cheimonophyllum candidissimum (Berk. & M.A. Curtis) Singer **P**
Clitocybe fragrans (With.) P. Kumm.
Clitocybe houghtoni (W. Phillilps) Dennis **P**
Clitocybe marginella Harmaja
Clitocybe nebularis (Batsch) P. Kumm.
Clitocybe odora (Bull.) P. Kumm.
Clitocybe phaeophthalma (Pers.) Kuyper
Clitocybe phyllophila (Fr.) Quél.
Clitocybe rivulosa (Pers.) P. Kumm.
Clitocybe squamulosa (Pers.) P. Kumm.
Clitocybe subbulbipes Murrill
Hemimycena cephalotricha (Joss.) Singer
Hemimycena cucullata (Pers.) Singer
Hemimycena crispata (Kühner) Singer
Hemimycena rickenii (Smith) Singer **P**
Infudibulicybe geotropa (Bull.) Harmaja
Infudibulicybe gibba (Bull.) Quél.
Infundibulicybe mediterranea Vizzini, Contu & Musumeci
Lepista nuda (Bull.) Cooke
Lepista panaeolus (Fr.) P. Karst.
Leucopaxillus gentianeus (Quél.) Kotl.
Lyophyllum boudieri Kühner & Romagn.
Lyophyllum infumatum (Bres.) Kühner
Lyophyllum paelochroum Clémençon
Lyophyllum rhopalopodium Clémençon
Megacollybia platyphylla (Pers.) Kotl. & Pouzar
Mycena abramsii Murrill
Mycena acicula (Schaeff.) P. Kumm.
Mycena aetites (Fr.) Quél.
Mycena alba (Bres.) Kühner
Mycena albidolilacea Kühner & Maire
Mycena arcangeliana Bres.
Mycena erubescens Höhn.
Mycena filopes (Pers.) Singer
Mycena flavoalba (Fr.) Quél.
Mycena galericulata (Scop.) Gray
Mycena galopus (Pers.) P. Kumm.
Mycena haematopus (Pers.) P. Kumm.
Mycena hiemalis (Osbeck) Quél.
Mycena inclinata (Fr.) Quél.
Mycena maculata P. Karst.
Mycena meliigena (Berk. & Cooke) Sacc.
Mycena metata (Secr. ex Fr.) P. Kumm.
*Mycena mirata (*Peck) Sacc.
Mycena pelianthina (Fr.) Quél.
Mycena polyadelpha (Lasch.) Kühner
Mycena polygramma (Bull.) S.F. Gray
Mycena pura (Pers.) P. Kumm.
Mycena renati Quél.
Mycena rosea (Schumach.) Gramberg
Mycena sanguinolenta (Alb. & Schwein.) P. Kumm.
Mycena speirea (Fr.) Quél.
Mycena stylobates (Pers.) P. Kumm.
Mycena vitilis (Fr.) Quél.
Mycenella bryophila (Voglino) Singer
Omphalina pyxidata (Bull.) Quél.
Paralepista flaccida (Sowerby) Vizzini
[= *Lepista flaccida* (Sowerby) Pat.]
Pseudoclitocybe cyathiformis (Bull.) Singer
Ripartites tricholoma Huijsm.
Roridomyces roridus (Scop.) Rexer
Tephrocybe rancida (Fr.) Donk
Tephroderma fuscopallens Musumeci & Contu **P**
Tricholoma acerbum (Bull.) Vent.
Tricholoma album (Schaeff.) P. Kumm.
Tricholoma atrosquamosum (Chev.) Sacc.
Tricholoma basirubens (Bon) Riva & Bon
Tricholoma bresadolanum Clémençon
Tricholoma columbetta (Fr.) P. Kumm.
Tricholoma coryphaeum (Fr.) Gillet **P**
Tricholoma gausapatum (Fr.) Quél.
Tricholoma orirubens Quél.
Tricholoma quercetorum Contu
Tricholoma saponaceum (Fr.) P. Kumm.
Tricholoma scalpturatum (Fr.) Quél.
Tricholoma sejunctum (Sow.) Quél.
Tricholoma squarrulosum Bres.
Tricholoma sulphureum (Bull.) P. Kumm.
Tricholoma ustaloides Romagn.

Entolomataceae

Clitopilus prunulus (Scop.) P. Kumm.
Entoloma dichroum (Pers.) P. Kumm. **P**
Entoloma lividoalbum (Kühner & Romagn.) Kubicka
Entoloma rhodopolium (Fr.) P. Kumm. var. *nidorosum* (Fr.) Krieglst.
Entoloma sericellum (Fr.) P. Kumm.
Entoloma sericeoides (Lange) Noordel.
Entoloma sinuatum (Bull.) P. Kumm.
Entoloma hebes (Romagn.) Trimbach
Entoloma hirtum (Velen.) Noordel.
Entoloma lucidum (Orton) M.M. Moser
Entoloma nitens (Velen.) Noordel.
Entoloma chalybeum (Pers.) Noordel.
Entoloma incanum (Fr.) Hesler
Entoloma longistriatum Noordel. var. *microsporum* (Noordel.) Noordel.
Entoloma ochromicaceum Noordel. & Liiv
Entoloma pseudocoelestinum Arnolds
Entoloma byssisedum (Pers.) Donk var. *microsporum* Noordel. **P**
Rhodocybe gemina (Paulet) Kuyper & Noordel.
[(= *Clitopilus gemina* (Paulet) Noordel. & Co-David]
Rhodocybe melleopallens P.D. Orton
Rhodocybe nitellina (Fr.) Singer
[= *Clitopilus nitellina* (Fr.) Noordel. & Co-David]

Amanitaceae

Amanita battarrae (Boud.) Bon
Amanita caesarea (Scop.) Pers.
Amanita citrina (Pers.) Pers.

Amanita franchetii (Boud.) Fayod
Amanita ovoidea (Bull.) Quél.
Amanita pantherina (DC) Krombh.
Amanita phalloides (Vaill. ex Fr.) Link
Amanita rubescens (Pers.) Gray
Amanita dryophila Consiglio & Contu
Amanita fulva Fr.
Amanita strobiliformis (Paulet) Bertill.
Amanita vaginata (Bull) Vittad.
Limacella glioderma (Fr.) Maire
Agaricaceae
Agaricus campestris L.
Agaricus comtulus Fr.
Agaricus essettei Bon
Agaricus porphyrhyzon P.D. Orton
Agaricus semotus Fr.
Agaricus stramineus (F.H. Møller) F.H. Møller
Agaricus xanthoderma Genev.
Bovista aestivalis (Bonord.) Demoulin
Bovista nigrescens Pers.
Bovista plumbea Pers.
Crucibulum laeve (Huds.) Kambly
Cyathus striatus (Huds.) Willd.
Cystolepiota sistrata (Fr.) Singer
Lepiota castanea Quél.
Lepiota clypeolaria (Bull.) P. Kumm.
Lepiota cristata (Bolton) P. Kumm.
Lepiota forquignonii Quél.
Lepiota pseudohelveola Kühner ex Hora
Lepiota rhodorhiza Romagn. & Locq.
(= *L. setulosa* J.E. Lange)
Leucoagaricus leucothites (Vitt.) Wasser
Leucoagaricus serenus (Fr.) Singer
Lycoperdon echinatum Pers.
Lycoperdon molle Pers.
Lycoperdon perlatum Pers.
Macrolepiota konradii (Huijsm. ex P.D. Orton) M.M. Moser
Macrolepiota mastoidea (Fr.) Singer
Macrolepiota procera (Scop.) Singer f. *permixta* (Barla) Vizzini & Contu
Macrolepiota subsquarrosa (Locq.) Bon **P**
Tulostoma brumale Pers.
Tulostoma fimbriatum Fr.
Tulostoma melanocyclum Bres.
Pluteaceae
Melanoleuca grammopodia (Bull.) Pat.
Melanoleuca exscissa (Fr.) Singer
Melanoleuca melaleuca (Pers.) Murrill
Melanoleuca substrictipes Kühner
Pluteus cervinus (Batsch.) Fayod
Pluteus cinereofuscus Lange
Pluteus nanus (Pers.) P. Kumm.
Pluteus plautus (Weinm.) Gillet
Pluteus romelli (Britz.) Sacc.
Pluteus semibulbosus (Lasch. ap. Fr.) Gillet
Volvariella murinella (Quél.) M.M. Moser ex Dennis, P.D. Orton & Hora
Volvopluteus glojocephalus (DC.) Vizzini, Contu & Justo
Psathyrellaceae
Coprinellus disseminatus (Pers.) J.E. Lange
Coprinellus domesticus (Bolton) Vilgalys, Hopple & Johnson
Coprinellus truncorum (Scop.) Redhead, Vilgalys & Moncalvo
Coprinopsis cortinata (J.E. Lange) Redhead, Vilgalys & Moncalvo
Coprinopsis insignis (Peck) Redhead, Vilgalys & Moncalvo
Coprinopsis lagopus (Fr.) Redhead, Vilgalys & Moncalvo
Coprinopsis picacea (Bull.) Redhead, Vilgalys & Moncalvo
Parasola conopila (Fr.) Örstadius & E. Larss.
Parasola leiocephala (Orton) Redhead, Vilgalys & Hopple
Psathyrella candolleana (Fr.) Maire
Psathyrella dicrani (A.E. Jansen) Kits van Wav.
Psathyrella obtusata (Fr.) A.H. Sm.
Psathyrella ochracea (Romagn.) Kits van Wav. **P**
Psathyrella prona (Fr.) Gillet
Psathyrella spadiceogrisea (Fr.) Maire
Psathyrella tephrophylla (Romagn.) Bon
Bolbitiaceae
Agrocybe praecox (Pers.) Fayod
Bolbitius vitellinus (Pers.) Fr.
Conocybe brunneola (Kühn.) ex Kühner & Watling
Conocybe dumetorum (Vel.) Svrcek
Conocybe brunnea J.E. Lange. ex Kühner & Watling
Hydnangiaceae
Laccaria affinis (Sing.) Bon
Strophariaceae
Deconica crobula (Fr.) Romagn.
Hypholoma fasciculare (Huds.) P. Kumm.
Pholiota gummosa (Lasch.) Singer
Pholiota lucifera (Lasch.) Quél.
Pholiota tuberculosa (Schäff.) P. Kumm.
Stropharia coronilla (Bull.) Quél.
Hymenogastraceae
Galerina graminea Velen.
Galerina marginata (Batch) Kühner
Galerina perplexa A.H. Sm.
Gymnopilus decipiens (Sacc.) P.D. Orton **P**
Hebeloma bulbiferum Maire
Hebeloma cavipes Huijsm.
Hebeloma dunense Corb. & Heim **P**
Hebeloma hiemale Bres.
Hebeloma laterinum (Batsch) Vesterh.
Hebeloma pallidoluctuosum Gröger
Hebeloma quercetorum Quadr.
Hebeloma sinapizans (Paul.) Gillet

Hebeloma theobrominum Quadr.
Hebeloma velutipes Bruchet
(= *H. exiguifolium* Murrill)
Crepidotaceae
Crepidotus autochtonus J.E. Lange **P**
Crepidotus cesatii (Rabenh.) Sacc.
Crepidotus epibryus (Fr.) Quél.
Crepidotus mollis (Schaeff.) Staude
Crepidotus subverrucisporus Pilát
Flammulaster ferrugineus Maire ex Watling **P**
Flammulaster muricatus (Fr.) Watling
Flammulaster rhombosporus (G.F. Atk.) Watling
Flammulaster subincarnatus (Joss. & Kühner) Watling
Inocybe adaequata (Britzelm.) Sacc.
Inocybe agardhii (N. Lund) P.D. Orton
Inocybe asterospora Quél.
Inocybe bongardi (Weinm.) Quél.
Inocybe calida Velen.
Inocybe cervicolor (Pers.) Quél.
Inocybe cincinnata (Fr.) Quél.
Inocybe cookei Bres.
Inocybe dulcamara (Pers.) P. Kumm.
Inocybe flocculosa Sacc.
Inocybe fraudans (Britzelm.) Sacc.
Inocybe geophylla (Fr.) P. Kumm.
Inocybe glabripes Ricken
Inocybe griseolilacina J.E. Lange
Inocybe hirtella Bres.
Inocybe maculata Boud.
Inocybe phaeodisca Kühner
Inocybe praetervisa Quél.
Inocybe rimosa (Bull.) P. Kumm.
Inocybe tenebrosa Quél.
Inocybe tjallingiorum Kuyper
Simocybe centunculus (Fr.) P. Karst.
Tubaria hiemalis Romagn. ex Bon
Tubaria cfr. *romagnesiana* Arnolds
Cortinariaceae
Cortinarius acetosus (Velen.) Melot
Cortinarius albertii Dima,Frøslev & T.S. Jeppesen
Cortinarius aleuriosmus Maire.
Cortinarius anomalus (Fr.) Fr.
Cortinarius aprinus Melot
Cortinarius assiduus Mahiques, Ortega & Bidaud
Cortinarius atrovirens Kalchbr. subsp. *ionochlorus* Maire.
Cortinarius bergeronii (Melot) Melot
(= *C. cedretorum* Maire)
Cortinarius boudieri Rob. Henry.
Cortinarius bulliardi (Fr.) Fr.
Cortinarius camptoros Brandr. & Melot **P**
Cortinarius caroviolaceus Orton
Cortinarius catharinae Consiglio
Cortinarius chailluzi Frøsl. & Jepps. **P**
Cortinarius chevassuti Hry.
Cortinarius cinereobrunneolus Chevassut & Rob. Henry
Cortinarius conicus Rob. Henry
Cortinarius cotoneus Fr.
Cortinarius decipiens Fr.
Cortinarius diosmus Kühner
Cortinarius duracinus Fr. s.l.
Cortinarius dyonisae Rob. Henry
Cortinarius flavoaurantians Boccardo, Cleric. & Vizzini
Cortinarius geraniolens Bidaud
Cortinarius glaucopus (Schff) Fr. var. *olivaceus* M.M. Moser (= *C. magicus* Eichhorn)
Cortinarius griseovioleipes Moënne-Locc. & Reumaux
Cortinarius hinnuleus Fr.
Cortinarius humolens Brandrud
Cortinarius infractus Fr.
Cortinarius leproleptopus Chevas. & Rob. Henry
Cortinarius lilacinovelatus Reumaux & Ramm
Cortinarius lividoochraceus (Berk.) Berk.
Cortinarius majusculus Kühner
Cortinarius molochinus Bidaud & Ramm
Cortinarius obtusus Fr.
Cortinarius ochraceopallescens Moënne-Locc. & Reumaux
Cortinarius ochropallidus Rob. Henry.
Cortinarius prasinus (Schaeff.) Fr. **P**
Cortinarius pruinatus Bidaud, Moënne-Locc. & Reumaux
Cortinarius rigens Fr.
Cortinarius rufo-olivaceus (Pers.) Fr.
Cortinarius sodagnitus Rob. Henry
Cortinarius suaveolens Bat. & Joachim
Cortinarius sublilacinopes Bidaud, Moënne-Locc. & Reumaux
Cortinarius terpsichores Melot
Cortinarius torvus (Fr.) Fr.
Cortinarius trivialis **J.**E.Lange.
Cortinarius vesterholti Frøslev & T.S. Jeppesen **P**
Cortinarius xanthochlorus Rob. Henry
Cortinarius (Telamonia) sp. sect. *Bovini*

BOLETALES
Boletaceae
Aureoboletus gentilis (Quél.) Pouzar
Aureoboletus moravicus (Vaček) Klofac [= *Xerocomus moravicus* (Vaček) Herink]
Boletus aereus Bull.
Butyriboletus appendiculatus (Schaeff.) Arora & Frank (= *Boletus appendiculatus* Schaeff.)
Butyriboletus pseudoregius (Huber) Arora & Frank [= *Boletus pseudoregius* (Huber) Estades]
Caloboletus radicans (Pers.) Vizzini (= *Boletus albidus* Roques)
Hemileccinum depilatum (Redeuilh) Šutara [= *Xerocomus depilatum* (Redeuilh) Manfred Binder & Besl]
Hemileccinum impolitum (Fr.) Šutara [= *Xerocomus impolitum* (Fr.) Quél.]
Hortiboletus rubellus (Krombh.) Simonini, Vizzini & Gelardi [= *Xerocomus rubellus* (Krombh.) Quél.]

Leccinellum crocipodium (Letell.) Della Maggiora & Trassin. [= *Leccinum crocipodium* (Letell.) Watling]
Leccinellum lepidum (Bouchet ex Essette) Bresinsky & Binder [= *Leccinum lepidum* (Bouchet ex Essette) Bon & Contu]
Leccinum carpini (R. Schulz) M.M. Moser ex Reid
Rubroboletus lupinus (Fr.) Costanzo, Gelardi, Simonini & Vizzini
Rubroboletus satanas (Lenz) Kuan Zhao & Zhu L. Yang (= *Boletus satanas* Lenz)
Suillellus luridus (Schaeff.) Murrill (= *Boletus luridus* Schaeff.)
Suillellus queletii (Schulzer) Vizzini, Simonini & Gelardi (= *Boletus queletii* Schulzer)
Xerocomellus cisalpinus (Simonini, H. Ladurner & Peintner) Klofac (= *Xerocomus cisalpinus* Simonini, H. Ladurner & Peintner)
Xerocomus subtomentosus (L.) Quél.
Suillaceae
Suillus collinitus (Fr.) Kuntze
Gyroporaceae
Gyroporus castaneus (Bull.) Quél.
Paxillaceae
Paxillus rubicundulus P.D. Orton
Sclerodermataceae
Astraeus hygrometricus (Pers.) Morgan
Scleroderma verrucosum Bull.
Pisolithus arhizus (Pers.) Rauschert

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