SOME ADDITIONS TO THE MACROFUNGI OF MALTA

Michael Briffa

ABSTRACT

Twenty two macrofungi are recorded for the first time as occurring in Malta: Amanita echinocephala, A. gracilior, Volvariella murinella, Psathyrella spintrigera, Pluteus thomsonii, Pleurotus pulmonarius, Tricholoma caligatum, Mycena galericulata, M. alba, Lactarius atlanticus, L. tesquorum, Xerocomus dryophilus, Gyroporus castaneus, Omphalotus olearius, Macrotyphula juncea, Ramariopsis kunzei, Phellodon niger, Lycoperdon lividum, Myxarium nucleatum, Auricularia auricula-judae, Paxine leucomeleas, and Peziza proteana fma. sparassoides. The last one cancels and replaces previous erroneous records of Sparassis laminosa. Former records of Psathyrella candolleana are doubtful. The examined specimens together with their respective photographs, taken in situ, are deposited in the author's herbarium (MB).

INTRODUCTION

Throughout the eighties and the first half of the nineties I collected and preserved a considerable amount of material of macrofungi, mainly from the few wooded localities we have in Malta, classified it and recorded the respective data. I have also taken photographs in situ of practically all the specimens collected. However, in many cases I still find it difficult to have them accurately determined at species level.

Modern natural taxonomy is no longer based solely on spore-colour and simple macroscopic morphology. Sometimes accurate identification is a very difficult and painstaking process, involving a lot of microscopic analysis and the use of chemical reagents to distinguish between similar-looking or closely related species. Ideally identification should be left to competent, professional mycologists. Unfortunately, however, mycologists scarcely ever visit Malta, the literature we have available is very limited, we lack expensive sophisticated equipment, and most of all we have no local professional expertise.

One of the main problems I have experienced is the fact that most of the material collected is preserved in 9% formaldehyde, in glass jars, which are unsuitable for mailing to expert colleagues abroad. In this condition the material cannot be tested with chemical reagents, and its smell and taste cannot be perceived. It can only be examined microscopically.

Local efforts at identification were first attempted in the first half of the eighties when a good number of the collected specimens of species not yet recorded in Malta were published in Briffa & Lanfranco (1986). In the case of polypores, the material could be easily dried, and the exsiccata were later examined and determined by polyporologists abroad and published in Briffa (2001).

In the present work some previously unrecorded species, which could now be determined with reasonable certainty, are published. Their identification is based on the actual herbarium material as described here, the respective photographs and the recorded field observations. In a few cases where exsiccata were available, help from mycologists abroad was sought and obtained.


Considerable, outstanding, old material in my herbarium belonging to the genera Amanita, Agaricus, Lepiota (and allied genera), Coprinus, Psathyrella, Inocybe; Pleurotus, Marasmius, Mycena, Tricholoma, Clitocybe, Hygrocybe, Russula, Boletus, Suillus, Xerocomus, Peziza and other Ascomycete genera is still awaiting accurate identification at species level.

1 'Durham House' 20, Creche Street, Sliema.
THE NEW RECORDS

CLASS HYMENOMYCETES

ORDER AGARICALES

Family Amanitaceae

1. Amanita echinocephala (Vitt.) Quél.

Material examined: MB365, Ballut tal-Wardija Malta, 1.11.93, under Quercus ilex.

This sizeable specimen had a white, outstretched pileus (diam. c. 9cm), adorned with conical scales; white, free gills and a white stipe (c. 9 X 2cm) which included a membranous ring and a bulbous, turbinate, deeply rooting base (diam. 3.5cm), surrounded by bands of scales. Its white, ellipsoid spores measured c. 10 X 6μ.

The peculiar, conical, thorn-like scales on the pileus, as implied by its specific name, were sufficient to lead to its identification in the section Lepidella Gilb. A similar looking species is A. boudieri, a Mediterranean species, which according to Cetto (1994) only appears in Spring.

2. Amanita gracilior Bas & Honrubia

Material examined: MB346, Wied Hazrun Malta, 2.11.84 near Erica multiflora not far from a grove of Quercus ilex.

The specimens had a somewhat viscose, white, outstretched pileus with a diameter of c. 6cm, adorned with some small scales in the centre; white, almost free gills; white flesh, and a stipe c. 10cm long 2cm wide at the apex and ending in a buried turbinate, rooting, bulbous base 4.5 X 3.5cm. The white spores contained oil drops or granules, and measured c. 10-11.5 X 5-6μ.

Had it not been for its peculiar spores and viscose pileus, this species could easily have been mistaken for A. boudieri, which has almost identical morphological features. In fact, Cetto (1994) says 'A. gracilior is a species that can be considered as the autumn form of A. boudieri which appears in spring.'

Family Coprinaceae

3. Psathyrella spintrigera (Fr.) Konr. & Maubl.

Material examined: MB027, Verdala Park, Malta, 10.11.82, on litter of Cupressus, Olea and Nerium.

The specimens could be easily recognized by their reddish-brown or date-coloured pileus with a diameter up to c. 5 cm with a paler crown, decorated with cottony white scales; their white floccose, fistulose stipe c. 5 X 0.5cm; and oval spores measuring c. 7 X 5μ. This record had been erroneously published as P. candolleana in Briffa and Lanfranco (1986). The authors may have had a mistaken concept of P. candolleana.

Mature specimens appearing on photographs of at least three others of its supporting records did not have a white pileus.

ORDER PLEUROLEALES

Family Pluteaceae

4. Volvariella murinella (Quél.) Moser

Material examined: MB130, Buskett Malta, 5.12.86, on pine needles under Pinus halepensis.

The specimens had a silky, grey, convex pileus, c. 2cm, expanding to c. 3cm; pale pink, rather crowded; almost free gills; and white stipe, c. 3cm X 6mm, with a lobed, white volva. The ellipsoid, pink spores measured 6.5-7.8 X 4.5μ.

The size of the carpophore, the mouse-grey pileus, the lobed, white volva, and the spore dimensions are indicative of this species, even though according to Moser its normal habitat is 'meadows, pasture and waysides'.

5. Pluteus thomsonii (Berk. & Br.) Dennis

Material examined: MB367, Wied il-Luq, Malta, 16.10.95, on dead remains of Laurus nobilis.

The specimen could be easily identified by the peculiar morphological features of its pileus. The small grey pileus, with a diameter of 2cm, was adorned by conspicuous reticulate irregular ridges or veins in the centre and a striate margin. The gills were pinkish white, free and slightly dentate; the stipe was also grey covered with white flakes; and the spores were pink in mass and measured c. 8 X 5.5μ.

ORDER TRICHOLOMATALES

Family Pleurotaceae

6. Pleurotus pulmonarius (Fr.) Quél. (Fig. 1)

Material examined: MB369, 'Wied tal-Isqof Malta, 23.3.02, on main trunk and branches of a dead Morus nigra.' Leg. D. Dandria.

This unfamiliar specimen was a thin, flat, whitish, gilled, bracket fungus, with a negligible, rudimentary, lateral stipe. It carried elongated, hyaline spores (9-10 X 4-4.5μ), typical of the genus Pleurotus as compared with Crepidotus. It was examined by Moreno, who said 'The absence of a hymenial veil, and the variable morphology of the cheilocystidia are indicative of Pleurotus ostreatus s. lato.' (personal communication) However, the specimen did not match the description of P. ostreatus s.str., which is normally much fleshier and has a very dark pileus. It was subsequently determined as P. pulmonarius, which belongs to the ostreatus group. Its identification was based on the following: Bon (1987), comparing P. pulmonarius with P. ostreatus says: 'P. pulmonarius is thinner and flatter, with
Family Tricholomataceae

7. Tricholoma caligatum (Viv.) Rick.

Material examined: MB351, Il-Bosk (Buskett) Malta, 11.12.86, under Pinus halepensis.

The specimens had a fleshy pileus (diam. c. 5cm) with dark brown scales on paler background and with a whitish involute margin, becoming outstretched later; white, sinuate gills; full stipe (5 X 2cm), white at apex above the ring and concolourous with pileus in the 'booted' end which comprised the ring; white flesh; and white, smooth, shortly elliptic spores measuring 5.5 - 6.5 X 4.5 - 5.5μ. The dimensions of the pileus and stipe were smaller than those described in Moser (1978), and Bon (1987), but the specimen collected was the smallest from a group of 6, chosen for storage convenience. The dimensions of the spores, however, and the other morphological features were typical of the species.

Family Marasmiaceae

8. Mycena galericulata (Scop.) S.F. Gray

Material examined: MB198, Ballut tal-Wardija Malta, 3.12.86, on dead branch of Ceratonia siliqua.

These relatively sizeable specimens had a pale greyish-brown, wrinkled to striate, umbonate pileus, up to a diameter of 4.5cm when expanded; whitish to pale pinkish, ventricose, somewhat distant, interveined gills; and a firm light greyish-brown, fistulose, rooting stipe, brown at base, c. 10 X 0.4cm. The white spores were elliptic, measuring c. 10-11 X 6-7μ.

9. Mycena alba (Bres.) Kühn. (= M. corticola Bres. non Pers.)

Material examined: MB136, Ballut tal-Imgiebah Malta, 10.2.86, gregarious on bark of a living Quercus ilex.

These minute carpophores had a white pileus (up to 6mm diam.), distant, white gills, a thin, white stipe (up to 8mm long), and round spores (c. 6μ) with a prominent apiculus. Their small size, colour, habit, habitat (as implied by the old and new specific name), and spore dimensions, were indicative of the species.

ORDER RUSSULALES

Family Russulaceae

10. Lactarius atlanticus Bon

Material examined: MB501, Ballut tal-Wardija Malta, 15.11.84, at base of Quercus ilex.

This species with an orange-red pileus, concolourous stipe and pale ochre, crowded gills belongs to the Lactarius section Olentes, with watery milk, (Bon 1987), and is associated exclusively with Quercus ilex. The specimens were examined and determined in 1993 by Marcel Bon, the
author of the species himself. He said, “after 9 years the
exsiccata still retained a fragrant smell of chicory despite
their age; the spores were globular, ca. 8μm, reticulate and
subechinulate at the junction of the cells; and the lactifereous
hyphae were clearly visible in SF (sulphoformol).’

11. Lactarius tesquorum Mal.

Material examined: MB249, Ta Wied Rini Malta,
17.12.93, under Cistus monspeliensis.

The specimens had an orange, tomentose pileus with no
sign of zonation; white, crowded gills turning very pale
pink; a short, fistulose stipe, attenuate towards the base,
concolourous with pileus; white flesh; white latex; and
white, reticulate, subglobose spores measuring c. 7-8 X 6-
7μ. The taste was sharply peppery.

According to Cetto (1993), this species is almost identical
with L. mairei, however, whereas L. tesquorum is confined
to the Mediterranean zone and is only associated with
Cistus species. L. mairei has also been reported from
continental Europe and is associated with frondose trees.

ORDER BOLETALES

Family Boletaceae

12. Xerocomus dryophillus (Thiers) Singer (Fig. 2)

Material examined: MB339, Ballut tal-Imgiebah, Malta,
7.11.84, under Quercus ilex. [This collection had been
published as Xerocomus chrysenteron in Briffa and
Lanfranco (1986)].

The specimens had a lightly velutinate, reddish, convex
pileus (c. 4.5cm), expanding but not becoming fully
outstretched, with a distinctly whitish margin, and
becoming paler and glabrous on maturity; yellow tubes
less than 1 cm; yellow pores c. 1 mm.; the stipe (c. 5 X
1.2cm), yellow above and dark reddish below with a
narrowed or pinched base; and ellipsoid spores measuring
(13.7) 14.3-15.0 (15.6) X 5.9-6.5μ.

It is with some hesitation that this species has been
included in this paper owing to its close affinity with X.
rubellus s.l., which is also chiefly associated with
Quercus species, as re-described unofficially by Engel
et al. (1990 & 1996 in Simonini 1998) under the
provisional name of X. 'quercinus'.

A constantly recurring characteristic of the Maltese
specimens is the distinctly broad whitish margin of the
pileus. This, however, is not included in Tiers’ official
definition of the species (in Simonini 1998). The relative
photograph published by Simonini (1998), nevertheless,
looks identical with the Maltese material and includes the
distinctive whitish margin, even though no mention of it is
included in the text. On the other hand, Cetto’s description of
which according to Simonini is the same species as X.
dryophyllus, mentions the white margin; but this is not so
obvious in his published photograph of the species. Engel
et al. (1990) mention a greyish-white margin on the pileus of
X 'quercinus' (= X rubellus s.l. sensu Simonini 1998).

The distribution and ecology of X. dryophillus favour its
occurrence in Malta. Simonini (1998) says that in Europe
its distribution seems to be restricted to the Mediterranean
region and it only occurs in a strictly calcareous and
xerophilous environment, associated with Quercus species.

13. Gyroporus castaneus (Fr.) Quél.

Material examined: MB343, Ballut tal-Imgiebah, Malta,
29.12.94, under Quercus ilex.

This specimen could be easily distinguished from other
difficult species of the Boletaceae family. It had a mustard
pileus; white, roundish pores, 1-2/mm, gradually turning
ochre with age; white tubes, gradually becoming ochre, on
a white base; a fragile, chambered or fistulose bulbous,
stipe, tapering upwards, concolourous with the pileus;
white flesh, not discolouring when handled; and ovoid,
lemon-yellow spores, measuring c. 10 X 6 μ. The only
other species of this genus is G. cyanescens, which turns
blue when handled.

Family Paxillaceae


Material examined: MB804, It-Tafal tal-Imdina, below
Saqqaja Malta, 'Early November 1995, c. 30 cm up trunk
of Olea europaea,’ leg. Ch. Galea-Bonavia.

This specimen, with a brownish-orange, slightly depressed,
umbonate pileus (c. 7 cm); bright orange, strongly
decurrent gills; concolourous flesh; and a full, eccentric
stipe with a blackish base, was easily recognisable, by its
habitat, its morphological features, and its subglobose
spores (c. 5 - 6μ).

ORDER CLAVARIALES

Family Clavariaceae

15. Macrotypula juncea (Fr.) Berthier

Material examined: MB142, Ghajn il-Kbira Malta,
28.12.91, on decaying leaves of Eriobotrya japonica.

This species is easily recognisable by its habitat and habitat.
The specimens consisted of unbranched, smooth, filiform
carpophores measuring c. 5 - 6 cm X 1-1.5mm, mostly
pointed at the apex, coloured white above and pale
brownish below, and hairy at the base.

16. Ramariopsis kunzei (Fr.) Corner

Material examined: MB369, Ballut tal-Wardija Malta,
16.1.96, at base of Ceratonia siliqua.

The specimens were white to cream carpophores 3.5cm
tall, consisting of a basal stipe from which emanated cespitose, ramifying branches, c. 2 mm thick, with pointed or blunt ends. Their colourless, finely decorated round spores with an apparent polygonal outline measured c. 4 - 5 μ.

ORDER APHYLLOPHORALES

Family Thelephoraceae

17. Phellodon niger (Fr.) Karst.

Material examined: MB103, Il-Bosk (Buskett), Malta, 11.12.86, under Pinus halepensis.

The specimens could be easily recognized by their conspicuous, coarse, invariably blackish, pileus with a white margin and their black flesh, contrasting with their greyish white verrucose hymenium underneath.

CLASS GASTEROMYCETES

ORDER LYCOPERDALES

Family Lycoperdaceae


Material examined: MB310, Ta Wied Rini, Malta, 22.11.82, on open ground.

The specimen consisted of a subglobose to slightly pyriform carpophore, measuring c. 2 X 2 cm; a short, rooting stipe, measuring c. 5mm; a shining, very light greyish brown, finely verruculose endoperidium; whitish to light yellowish brown gleba; and globose verruculose spores measuring 3.5-4.5μ.

CLASS PHRAGMOBASIDIOMYCETES

ORDER TREMELLALES

Family Tremellaceae

19. Myxarium nucleatum Wallr. (= Exidia alboglobosa Lloyd)

Material examined: MB70, Near Addolorata Cemetery Malta, 12.12.83, on a decaying dead branch of Celtis australis.

The examined material consisted of snow-white, transparent, gelatinous, mostly confluent, subglobose carpophores, as implied by one of the former specific names of the species: Exidia alboglobosa. Microscopically, the basidia had long sterigmata, and the allantoid spores measured c. 11 X 4μ.

ORDER AURICULARIALES

Family Auriculariaceae

20. Auricularia auricula-judae (L.) Schroet.

Material examined: MB102 (in formaldehyde), Wied il-Luq, Malta, 10.11.94, on dead branches of Carya sp. MB657 (exsicata), Wied il-Luq, Malta, 6.4.98, on unidentified dead twigs.

These specimens, bell-shaped or ear-shaped, with a velutinate, tawny outer surface and a shining, light violet-brown inner surface, were easy to identify by their peculiar translucent, firm, elastic, pliant texture. When dried, the specimens of MB657 became hard, whitish and hoary outside, and blackish blue inside. This is a common cosmopolitan species which, however, had never been reported from Malta.

CLASS ASCOMYCETES

ORDER PEZIZALES

Family Helvellaceae

21. Paxina leucomelas (Pers.) Kuntze (= Helvella leucomelaena (Pers.) Nannf.)

Material examined: MB148, Mizieb Malta, 5.2.85, on pine needles under Pinus halepensis.

The specimens were generally shapeless or cup-shaped, 1.5 to 3.5 cm across, with perforations in the larger carpophores, a dentate margin, a very pale greyish outer surface and a very dark greyish inner surface. From their short, relatively thick, white stipe emanated short ribs which did not spread on to the cup's outer surface as in P. acetabulum. The ascii measured c. 288-304 X 14-15μ; and the large elliptic smooth spores were generally monoguttate (with one oil-drop) and measured c. 20-23 X 11-13μ.

Family Pezizaceae

22. Peziza proteana (Boud.) Seaver fma. sparassoides (Boud.) Korf.


This specimen, a sub-globose mass of whitish fleshy fungal folds with faint shades of violet-brown, (diam. c. 23cm), together with two other identical specimens from different localities, (5.12.1983, Wied Ghollieqa Malta, near burnt stump of Ceratonia siliqua, and 23.11.1984, Wied Hazrun Malta, near burnt stump of Quercus ilex.), had been erroneously recorded as Sparassis laminosa in Briffa and Lanfranco (1986). The error was detected when the specimen was subsequently examined microscopically and was found to carry asci! The ascii (c. 208-220 X 10μ attenuate towards the base) were interspersed with thin straight paraphyses, slightly clavate at the apex, and the ellipsoid, white spores measuring 10.4-11.7 X 6.5μ were biguttate (with two oil-drops) and distinctly verruculose.

The specimen was determined as Peziza proteana (Boud.) Seaver fma. sparassoides (Boud.) Korf., a carbonicolous species, having a superficial resemblance to Sparassis...
laminosa. Its macroscopic and microscopic features agree with the descriptions in Cetto (1994 VI No. 2457) and Dennis (1960, p. 16), except for the asci which were rather shorter.

This form must have proved rather enigmatic to earlier mycologists. Originally it had been regarded as a sessile Gyromitra species (G. philipsii Masseae). A summary of its interesting taxonomic history follows its description in Dennis (1960).

ACKNOWLEDGEMENTS

Thanks are due to Professor Marcel Bon of Station d'études en bas de Somme, St. Valery-sur-Somme France, for examining and determining Lactarius atlanticus, and to Monsieur George Lafuente of Societe Mycologique des Pyrénées Médesterranéennes France for onpassing our material to him, to Professor Dr. Gabriel Moreno of Dpto. Biologia Vegetal, Universidad de Alcalá de Henares Spain for helping in the identification of Pleurotus pulmonarius, to Mr. Edwin Lanfranco of the Biology Department of the University of Malta for making available literature on Peziza proteana and to Messrs David Dandria and Charles Galea-Bonavia for favouring the author with their collections of Pleurotus pulmonarius and Omphalotus olearius.

(Accepted 15th September 2002)

REFERENCES


Briffa M. (2001) Polypores recorded in Malta: Additions and Updated Checklist. The Central Mediterranean Naturalist, 3(3) 125-129


Gulia G. (1858-1859) - Repertorio di Storia Naturale, Malta, 123, 134, 135


