

FUNGI ROYALE

Some interesting fungi of the Royal Parks

Part 3: mycorrhizal fungi

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The previous two articles on the larger fungi of the Royal Parks (FM 11(3): 101–104 & FM 12(1): 26–30) discussed some of the saprobic fungi recorded during surveys of Richmond Park, Bushy Park and Kensington Gardens throughout 2008 and 2009. This following article describes some of the more interesting mycorrhizal species recorded. Although all three parks produced interesting records, Richmond Park was ahead of both Bushy Park and Kensington Gardens in numbers and diversity of mycorrhizal fungi, reflecting the greater variety of habitats created by the more undulating terrain. Bushy Park is completely flat and forms part of the London flood plain, so problems with waterlogged soil might adversely affect many mycorrhizal fungi. Despite this, areas such as the Woodland Gardens at Bushy,

held some nice surprises. Kensington Gardens is also more or less flat and supported fewer mycorrhizal species than the other two sites but it still held uncommon species that were not recorded from them, such as *Lactarius controversus*, *Russula decipiens* and *Tricholoma populinum*. So what most people perceive as just an ordinary public park for taking a stroll in, sunbathing or littering, may in fact hold a treasure trove of interesting and sometimes rare fungi.

Laccaria fraterna - Richmond Park (Fig. 1).

Laccaria fraterna, an introduced mycorrhizal species, recorded only with *Eucalyptus* spp. in Britain, was an unexpected find on the penultimate visit to the Park. It is rarely recorded with only 22 records in the FRDBI, although possibly quite widespread. This is only the second record



Fig. 1. *Laccaria fraterna* is an introduced species associated with *Eucalyptus*, characterised by its 2-spored basidia. Photograph © Andy Overall.

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Fig. 2. *Xerocomus ripariellus* with bright red colours and strongly bluing flesh throughout. Photograph © Andy Overall.

for the vice county of Surrey. It was collected in Pembroke Lodge Gardens beneath the only *Eucalyptus* tree in that area which is thought to be *Eucalyptus amygdalina*. *L. fraterna* is very difficult to tell apart from *L. laccata* in the field, with only the presence of *Eucalyptus* as an indicator that it might be present. However, once under the microscope, the presence and dominance of two-spored basidia helps confirm the species as *L. fraterna*.

Details of the illustrated collection

Cap 12–49 mm diameter, a rich red-brown with a paler margin, 1/3 translucently striate and hygrophane, drying pinkish beige with an ochre tinge. Gills light pink, adnexed to sub-decurrent, widely spaced with entire, paler edge. Stem 10–20 x 2.5–6 mm, cylindrical, dark red-brown, darker than the cap. Spores globose, thick-walled and spiny, 8.4 (–10.7) x 8.0 (–10.7) μm .

Xerocomus ripariellus – Richmond Park (Fig. 2).

Recently described by Redeuilh in 1997, this is a species that prefers damp habitats close to ponds etc. and often associated with *Salix*, although other host trees are recorded as was the case here. This collection was found close to

Adams Pond, fruiting directly beneath a young poplar. It is a little-recorded species with only 22 records in the FRDBI, though as it is only recently described I should imagine it has been overlooked and mistaken for other similar species such as *X. rubellus* and *X. cisalpinus*.

Details of the illustrated collection

A small to medium species, the cap was 27–52 mm across, matt, reddish brown becoming scarlet-red with age, from the margin inward or sometimes vice-versa. The cap surface begins cracking inwards from the margin, while still relatively immature. The stem was 30–40 x 10–15 mm tapering toward the base. The stipe apex was chrome yellow, densely speckled below with red flecks, darkening at the base to scarlet-brown. All parts blued strongly on handling. The flesh upon cutting turned very blue in the tubes and in the lower half of the stem, yellowish directly above the tubes and pinkish-red below the cuticle. Spores 10.0–13.0 x 4.6 μm . Pileipellis cells had swollen ends and some of the hyphae had zebra-like encrustations.

Amanita inopinata – Bushy Park (Fig. 3).

This species was described from Essex, England by Derek Reid in 1981. It is a rare species in this country, although spreading

steadily, with 52 records in the FRDBI. It is considered unlikely to be a native of Britain but its origin is uncertain. It is thought to have been introduced to this country and also to the Netherlands, France and Germany. The most likely place of origin is New Zealand (Bas, 2001) where it is also found, although Ridley (2000) disagrees. For more on its spread in Britain and the problem of its distribution and origins see FM 1(2): 39–40, FM 1(4): 117–118, FM 2(2): 40, FM 2(3): 98 & FM 6(1): 31. It is generally found near conifers and at Bushy it was with Scots Pine. It seems likely that this species is actually non-mycorrhizal in common with many members of Section *Lepidella* to which it belongs. This is a new record for Middlesex.

Details of the illustrated collection

This is a small to medium-sized species. Cap 44–50 mm diameter, convex and comprised of thick, dark grey-brown scales that exceeded the margin. Gills adnexed-free, cream-white, thickish and fairly well spaced. Stem 75 x 6–15mm, tapering at the apex and base. The apex was dark grey-brown. Below the light brown, rather fleet-

ing annulus, the stem had white to brown scales down to the base. Spores ellipsoid to sub-globose, smooth 8–9 x 6.5–7 µm. The pileipellis consisted of short to longer sausage-shaped, non-septate cells.

Paxillus rubicundulus – Bushy Park (Fig. 4).

A species that is quite common in Scotland but rather less frequent southwards as shown by records in the FRDBI. This species is mycorrhizal with alder *Alnus glutinosa*. It was found growing in considerable numbers around one alder alongside a brook in the Woodland Gardens. This record is another first for Middlesex.

Details of the illustrated collection

A medium to large species. Cap 31–115 mm diameter, convex to slightly infundibuliform, with dark red-brown scaling on an ochre-brown ground with the inrolled margin characteristic of *Paxillus* species. Gills decurrent, olive-yellow, bruising red-brown. Stem 30–90 x 12–20 mm, spindle-shaped or cylindrical with swollen base, yellow-brown, bruising darker red-brown, red-brown at the base. Spores 6.5–8 x 4.4–5 µm.



Fig. 3. *Amanita inopinata* is most likely an introduced species and is easily distinguished from all other British species in this genus by its grey-brown to blackish cap scales. Photograph © Andy Overall.



Fig. 4. *Paxillus rubicundulus* is associated with *Alnus* and usually has more evident cap scales than the common *P. involutus*. Photograph © Geoffrey Kibby.

***Cortinarius saturninus* – Bushy Park (Fig. 5).**

A rarely recorded yet widespread mycorrhizal species associated with a variety of deciduous trees especially willow and hawthorn, particularly frequent around pond margins. This find was made under the further of the two willow trees in what is known as the Wild Life Education area. It had formed a crowded, small, almost perfect circle of up to 30 clustering fruit bodies. [Such growth in rings and clusters is very characteristic of this species, most *Cortinarius* species grow singly or in small clusters – Ed.] This is only the sixth record for this species in Middlesex among 115 records for Great Britain and Ireland in the FRDBI.

Details of the illustrated collection

A medium-sized species, cap 25–80 mm diameter with a broad central umbo, orange-brown, hygrophanous with silvery white velar remnants around the margin which are typical of this

species. Gills light to rust brown, notched-adnate, moderately spaced with smooth paler edge. Stem 40–85mm x 6–20 mm, cylindrical with broad base; some were quite bulbous, reaching up to 42 mm across the base, apex very slightly blue, cortina silvery-white, and peronate with thin velar sock (visible only on a few of those pictured). Spores ellipsoid, lightly verrucose, averaging 8 x 4.4 µm.

***Rubinoletus rubinus* – Kensington Gardens (Fig. 6).**

This was an unexpected and exciting record for Kensington Gardens. This small, beautifully coloured member of the *Boletales* is usually mycorrhizal with *Quercus*, yet here it was with either *Castanea* or *Tilia*. Among the 116 records held on the FRDBI only two are from Middlesex, both mine (from the Kenwood Estate and Waterloo Park), so this will be the third. Previous records indicate a similar habitat to Kensington and it is seen to be widespread, south of Yorkshire.



Fig. 5. *Cortinarius saturninus* is widespread in Britain wherever *Salix* is found, often forming large rings around their base. The remains of the white veil around the cap margin is typical for this species. Photograph © Andy Overall.



Fig. 6. *Rubinoboletus rubinus*, showing its striking carmine pink pores, is a species most commonly found in the south of England, often but not exclusively with *Quercus*. Photograph © Andy Overall.

Details of the illustrated collection

Caps up to 40 mm across, convex, dull olive brown, smooth to cracking slightly with age. Stems 40 mm x 19 mm at the apex tapering to 5 mm at the base. The apex can appear pink from the pink, decurrent tooth of the pores. Below the apex it becomes mainly yellow-orange with pinkish-red flecks, which solidify and darken at the tapered base. Tubes are a deep carmine, notched with a decurrent tooth. Spores smooth and ellipsoid 6.1–6.9 x 4.2–4.6 μm ; unlike the elongate-fusiform spores of most other British boletes.

I hope this series of articles on the fungi of the Royal Parks has highlighted how some of the green spaces that surround us in our towns and cities can be home to a diverse range of interesting larger fungi, be they common or rare. Because of their nature and proximity, these parks are often overlooked and seen only as areas for recreation or walking the dog; this couldn't be further from the truth. The surveys from which these articles drew inspiration reinforced this view by revealing many rare or uncommon fungi among the more commonly encountered species. It is true that not all of our parks and gardens are old deer parks such as the three Royal Parks presented here but that is not a prerequisite for the presence of larger fungi. Many of our urban parks, gardens and cemeteries have excellent habitats for a wide variety of fungi, associated with living trees, or with fallen or standing dead wood, unimproved grassland (especially in the cemeteries) or compost heaps. All we need to do is spend some time visiting these areas and getting to know the fungi therein. For a further account of the fungi I recorded in these parks see Overall (2008, 2009a, 2009b).

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FURTHER READING

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- The most up-to-date and essential reference to the British species and their current names.