

Two genera of ascomycota new to Epping Forest

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Fig. 1. *Pseudopithyella minuscula* growing on *Hesperotropis leylandii* debris. Epping Forest, 21 December 2023. Photo © Claudi V. Soler.

On a mid-winter walk in Epping Forest, Essex, on 21 December 2023, two groups of tiny ascomycete fungi were found thanks to the extremely sharp eyes of one of our party (LC). The colour, the very small size of the fruit bodies and their substrate were unusual to us, more used to finding larger fungi on or under deciduous wood. They were growing on and near Leyland Cypress \times *Hesperotropis leylandii* debris lying on bare soil. Conifers of any type are a very uncharacteristic occurrence in Epping Forest; when they do occur they are likely to have been introduced, as happened in the nursery of experimental conifers planted by the foresters in the area known as The Warren, where these two interesting finds were made. We were, therefore, keen to pursue their identity, in anticipation of new records for the Forest.

Pseudopithyella minuscula

The first collection (Fig. 1 & 2) was a group of tiny red cups, not more than 2 or 3 mm in diameter, mounted on a small white stem and growing on the discarded scaly leaves of what we took to be last year's fallen and quite rotted \times *H. leylandii* branchlets. To all three of us it seemed to recall a minute version of *Sarcoscypha coccinea* and hence 'Tiny Scarlet Elf Cup' became its working name pending further investigation. The first clue came from looking up *Sarcoscypha* in Fungi of Temperate

Europe (Læssøe and Petersen, 2019) and finding the much smaller genus *Pithya* described as rather small, more or less orange and, most interestingly of all, "decomposers on conifers". More specifically, *P. cupressina* is recorded (on FRDBI) as growing mainly on decayed twigs of *Juniperus* species, another genus of Cupressaceae.

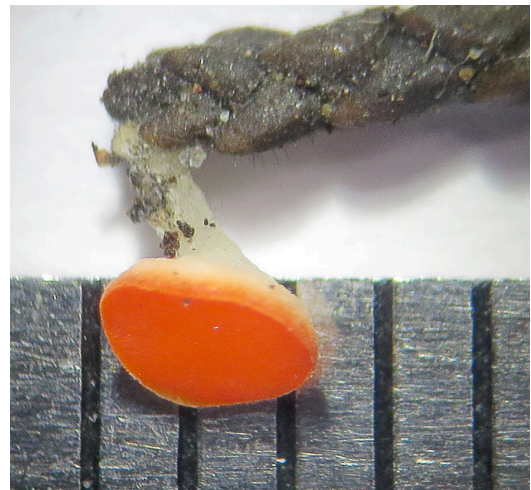


Fig. 2. *Pseudopithyella minuscula*. Epping Forest, 21 December 2023. Photo © Claudi V. Soler.

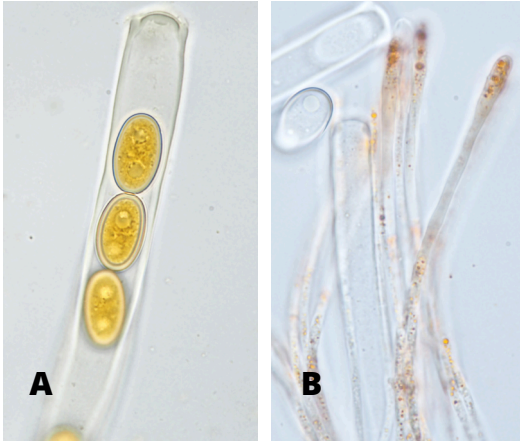


Fig. 3. *Pseudopithyella minuscula*, cropped micrographs taken at x1000. A: ascus in Baral's iodine. B: paraphyses in water. Images © Claudi V. Soler.

The more promising-looking genus *Pseudopithyella* came to light from the Fungi of Great Britain and Ireland website, in particular *P. minuscula*, the only species known in Britain. It was established (CVS) that the microscopical structures of this unknown-to-us genus matched perfectly those of our own collection. The elliptical spores of *Pseudopithyella minuscula* and the reddish colour seem the main difference from a second species *P. cupressina* which is more orange and has globose spores. For further information regarding the latter species check Dennis (1978) and Spooner (2002).

There are no records of *Pseudopithyella minuscula* on the FRDBI which might have made our collection a UK first. However, according to the Fungi of Great Britain and Ireland website it has been reported from East Kent and East Suffolk.

Description

Pseudopithyella minuscula (Boud. & Torrend) Seaver

Syn. *Plectania minuscula* (Boud. & Torrend) Le Gal

Syn. *Sarcoscypha minuscula* Boud. & Torrend

Apothecia discoid, flat topped 2–3 mm in diameter, shortly stipitate. **Hymenium** smooth reddish-orange in colour. The margin is a paler concolorous narrow band. **Stipe** whitish to hyaline, 1–2 mm long, slightly widening at the apex to support the disc. **Asci** sub-operculate, 8-spored, 150–250 x 10–14 µm, thick-walled, more or less cylindrical, slightly narrowing towards the base and truncated at the apex which recalls the points of a crown (Fig. 3A). **Ascospores** ellipsoid, uniseriate, 14–16 x 8–9 µm, smooth, hyaline, usually with two large guttules. **Paraphyses** slim, shaped like a matchstick, 150–200 x 2–4 µm, wider at the apex with orange granular content (Fig. 3B). **Habitat** found growing attached to decayed and partially buried *Hesperotropsis leylandii* debris lying on bare soil under a single tree.

Specimen examined: K-M001442637. Sequence data is accessioned on GenBank: PV409555.



Fig. 4. *Pseudoboubovia benkertii* growing on *Hesperotropsis leylandii* debris. Epping Forest, 21 December 2023. Photo © Mario Tortelli.

Pseudoboubovia benkertii

Our second collection (Fig. 4), also spotted by LC, was a small cluster of tiny yellow discomycetes, growing only centimetres away from the *Pseudopithyella* and again growing connected to the partially buried and decayed *Hesperotropsis leylandii* leaf debris. The waxy, pale-yellow discs had a vaguely greasy look, the circular margin becoming more irregular as they reached their maximum size of 4–5 mm; macroscopically looking like some kind of *Hymenoscyphus*. We were not making any progress on keying out the species and it was decided that the best thing to be done was to pursue this collection via a DNA analysis. The results were not conclusive but suggested *Pseudoboubovia benkertii*, another unknown-to-us genus. Again, we checked the Fungi of Great Britain and Ireland website and confirmed that the macroscopic and microscopic characters fitted perfectly. This collection also represents a new record for Epping Forest, a new record for Essex and the third British record. The first record, according to the FRDBI is from Anglesey on 10 August 2020, on bare soil under a *Cupressus* hedge, reported in Field Mycology (Aron, 2023). The second, from Cornwall on a conifer stump, was made only a month earlier than ours.

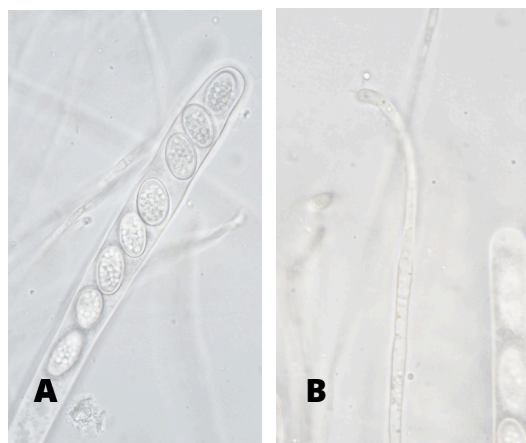


Fig. 5. *Pseudoboubovia benkertii*, cropped micrographs taken at x1000. A: ascus in water. B: paraphysis in water. Images © Claudi V. Soler.

Description

Pseudoboubovia benkertii (B. Perić) U. Lindem, *et al.*

Syn. *Kotlabaea benkertii* B. Perić

Apothecia sessile, smooth, waxy, pale yellow to straw throughout, regularly discoid when young, becoming more irregular and slightly wavy with age. **Hymenium** concolorous with the rest of the fruitbody. **Asci** 8-spored, 200–250 x 10–14 µm, operculate, cylindrical, slightly tapering towards the base, thin-walled, with a more or less obtuse apex not bluing in iodine (Fig. 5A). **Ascospores** ellipsoid, 15–17 x 9–10 µm, smooth, thick-walled, hyaline, with multiple small oil droplets. **Paraphyses** septate, 150–275 x 2–3 µm, slim, bent at the apex but not swollen, with indistinct contents (Fig. 5B). **Habitat** growing attached to buried and decayed *Hesperotropsis leylandii* debris on bare soil under a single tree.

Specimen examined: K-M001444660. Sequence data is accessioned on GenBank: PV394771.

Adding a new species to a site list is not such an unusual occurrence, although even this does become a little harder in sites which have been extensively surveyed, such as Kew Gardens or Epping Forest. Adding two new genera in one visit is definitely a little more unusual.

References

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