

Notes and Records

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These notes were written shortly after Kew Gardens registered a temperature of 40.1°C. A Kew spokesman on Radio 4 gave an all too accurate description of the Kew lawns as “looking totally non-green”. The only agaric to have appeared in any numbers since late winter was *Leratiomyces ceres* struggling through on woodchip mulch, seemingly responding to conditions reminiscent of its native Australian haunts. I am now pinning my hopes on some observations made by Charles Aron, a long time observer of both fungi and weather. He notes (Aron, 2005) that several of the hot dry summers of recent years have been followed by well above average agaric fruiting when at last the rains arrived, but even then it was at least a further three weeks before they really got going.

I like to try and keep pace with the advances in fungal classification that have taken place throughout the forty odd years of my interest in mycology. In the last issue it was *Cortinarius*. Now I turn to a group of a mere six British species, all uncommon to rare, but all victims of recent substantial phylogenetic upheaval.

The British stipitate stereoid fungi

The species formerly grouped together under this description are characterised by a relatively tough context, a smooth hymenium and smooth hyaline spores (thus *Stereum* like), but with a stipe, or at least a basal rosette. Despite the stipe, they get treated in standard texts on corticioid fungi. Most were originally described in *Thelephora*, though *Thelephorales* as now understood all have ornamented spores. This is a widespread growth form in the tropics but one largely absent in northern Europe.

Derek Reid published an influential *Monograph of the Stipitate Stereoid Fungi* in 1965, arising out of his Ph D thesis. He examined over 200 type collections and recognised 60 species, ten of them newly described, assigning them to nine genera in the *Stereales*, mostly in a new family *Podoscyphaceae*. He preceded these placements with the time-honoured observation “At the present time the taxonomy of the Basidiomycetes is in a state of flux”. Forty years later, in the published British checklist (2005),

there are four such species: *Podoscypha multizonata*, *Cotylidia pannosa*, *C. undulata* and *Stereopsis vitellina*, all assigned as by Reid to *Podoscyphaceae* in the *Stereales*. Incidentally, all are excellently illustrated in FTE (*Fungi of Temperate Europe*). A fifth, *Stereopsis hiscens*, was added in Update 6 to the checklist. The confirmation of a sixth species, *Stereopsis reidii*, identified thus far on morphological grounds alone, is currently on hold until this species is represented by a good reference DNA sequence in a publicly accessible database and the appropriate comparisons can be made.

The DNA revolution has now torn up all these family and order placements, as made clear in Sjökvist *et al.* (2012), entitled “*Stipitate stereoid fungi have evolved multiple times*”. *Podoscypha* is now in *Polyporales* and *Cotylidia* in *Hymenochaetales*. The true *Stereopsis* (type *S. radicans* described by Berkeley from S. America, Surinam) is now type of a new order *Stereosporiales*, fairly basal in the *Agaricomycetes* (Sjökvist *et al.*, 2015). *S. vitellina* and *S. reidii*? both require placement in other genera, possibly also *S. hiscens*. Further notes follow on all these species.

Podoscypha multizonata

This has its world stronghold in southern Britain where it is widespread, being local in France and rare in the rest of Europe. It was written up in FM by Overall & Mottram (2006) and again by me in 2013 after it was found in Kew under an Ash tree, a previously unrecorded host. It still fruits there annually. It prefers oak or beech but appears not to be mycorrhizal and several other hosts are known. DNA has shown it to be closely related to the poroid *Abortiporus biennis* which tends to grow in similar looking rosettes. It was at one time confused with *Cotylidia pannosa* (e.g. by Berkeley) but unlike that species it has skeletal hyphae, abundant gloeocystidia and longer spores.

Cotylidia pannosa

A fairly rare species described by Sowerby. I gave it a Fungal Portrait in FM9(4) 2008 under the doubting heading ‘*Cotylidia pannosa sensu auct.*’.

I was puzzled by the discrepancy between the collection I illustrated with bright pink tinges and the lack of any mention of pink in Reid (1965), though he had studied numerous British collections, including fresh material. I speculated that I was illustrating a distinct taxon recently introduced. This idea was shown to be untenable next year when Jo Weightman (2009) reproduced a painting of a clearly pink-tinged collection made by Dr Henry Bull in 1872. I still cling to the idea there may be a second closely related species lacking all trace of pink. Fries in the *Systema* listed both *Thelephora pannosa* and a subsidiary taxon *T. pannosa* β *pallida*, previously described by Persoon as *Thelephora pallida*, now considered a synonym. These days it seems that if enough collections of almost any species are DNA'd a species complex is revealed. So I live in hope.

Cotylidia undulata

A few collections held at Kew have been assigned to this species in the past from as far apart as Cornwall and Angus (though see below under *Stereopsis reidii* for the fate of the Cornish one). There is an up-to-date treatment of *Cotylidia* in Larsson & Ryvarden 2021 where it is described as associated with mosses on dry soils. Its distribution is given as “Rare, reported from Italy, Central Europe and the Nordic countries”. Records from Britain seem to have gone unnoticed or disbelieved. See Fig. 1 for a possible North American collection.

Stereopsis vitellina

“Unlikely to be confused with any other European basidiomycete” (FTE), the only somewhat similar species macroscopically being the ascomycete *Spathularia flavida*. For a description see *Corticaceae of North Europe* Vol. 7. Described by Plowright from Abernethy Forest, Inverness in 1901, and found there again in 1999 with no other British records in the intervening years. Several more records have been made recently in the same area. Sjökvist et al. (2012) found that this belongs somewhere in the *Atheliales*, the only stipitate and pileate species so far known in that order, hitherto confined to typically corticioid species. It is certainly no *Stereopsis*, but appears to be still awaiting placement in a new genus or family, since none is apparent in the outline classification in Larsson & Ryvarden 2021.

Stereopsis hiscens

For Reid this occurs in moist tropical or subtropical regions throughout the world (see Fig. 2). David Harries has found it in Wales, confirmed by Martyn Ainsworth (Harries, 2012). An attached note by Martyn adds that an earlier Welsh collection, made in 2007, was found to be conspecific, rather than the first Welsh record of *Podoscypha multizonata* as claimed at the time. These are thought to be the first European records of this species. Larsson & Ryvarden (2021) consider the genus *Stereopsis* sensu stricto is not present in Europe. So either news of these



Fig. 1. A putative collection of *Cotylidia undulata* from western North America, 2011. Photograph by Caspar S ex Wikimedia Commons.

collections didn't reach them or they consider this to be yet another species needing a new genus.

Stereopsis reidii?

A very distinctive pure white species was found late in 2017 in the Ainsdale Sand Dunes Reserve in Lancashire and later refound at the same site. It was reported by Tony Carter as a 'Reader's Find' in *Field Mycology* (FM20(1): 30, 2019). Martyn Ainsworth determined these collections after microscopic examination and comparison with the published protologue. *S. reidii* had been described from a single Italian collection. It is included in Bernicchia & Gorjón 2010, together with a photo looking plausibly intermediate between the two included by Carter. His material has been DNA'd, but no authentic *S. reidii* sequence is available for comparison.

Since then a collection of an unknown species made in South Devon in October 2019 has been sequenced at Kew and found to be a good match. As a follow up a Cornish collection already in Kew filed as *Cotylidia* cf. *undulata* made in November 2000 has also been sequenced and found to provide a further match. These sequences would suggest a closer relationship of the British collections to *Cotylidia* than to *Stereopsis*, although the absence of cystidia is certainly not in accordance with the current morphological definition of the former genus. Further sampling and analysis is required to establish their true affinities and to help with the

taxonomic decision-making. Currently this is looking like a choice between modification of the definition of *Cotylidia* or creation of a new genus.

It was these developments around a third rare British possible *Stereopsis* that inspired me to put these notes together, leaving no room for further thoughts in this issue on any other random topics.

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Fig. 2. A collection identified as *Stereopsis hiscens* from Maunganui Bluff, New Zealand, 2018. Photo by Peter de Lange ex Wikimedia Commons.