

# British Dermateaceae: 1. Introduction

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The first part of a synopsis of the British Dermateaceae (Leotiales) is presented. A description of the family and a key to subfamilies of the Dermateaceae are given, together with annotated lists of accepted genera and common synonyms and of excluded genera.

**Keywords:** Ascomycetes, Leotiales, Dermateoideae, Naevioideae, Peziculoideae, descriptions, keys

Family delimitation in the huge ascomycete order Leotiales is currently imprecise, being based on morphological characters, notably excipulum structure and ascus form, which are insufficient for integrating such a large number of taxa. The system has evolved with little modification since Nannfeldt (1932) and families as currently circumscribed are little more than heterogeneous assemblages of frequently ill-understood genera. An ever-increasing number of taxa referred to this order leads to ever-increasing confusion. However, it has to be recognised that the present state of knowledge is inadequate to construct a more natural system. Therefore, there is no other choice than to take a practical approach in tackling the British genera of Leotiales.

The family Dermateaceae is here defined in the 'traditional' sense, based on an excipulum composed, at least at the base, of globose or angular elements which are usually pigmented. Although the family is at present considered to be very heterogeneous, recognition of two families, Mollisiaceae and Dermateaceae, as discussed in Hawksworth (1994) in our opinion does not reflect the probable relationship between the respective type genera *Mollisia* (Fr.) P. Karst. and *Dermea* Fr. indicated by the structural similarity between them. Such a division leads to no more natural a solution than the traditional unit and it seems premature, given the present state of knowledge of the genera, to attempt any taxonomic revision at family level.

Three subfamilies are here recognised from Great Britain, *viz.* Dermateoideae, Naevioideae

and Peziculoideae, though with a somewhat emended concept than that traditionally employed. Thus, the subfamilies Drepanopezizoideae and Pseudopezizoideae, often used for species which are parasitic at least in an anamorphic state, are not maintained in the present account as they have proved difficult to separate clearly from taxa placed in Dermateoideae. Although most of the latter are saprophytes, some parasitic species exist within *Mollisia* and closely related genera. Subfamilies Ephelinoideae, Discohainesioideae and Mollisioideae, recognised by Nannfeldt (1932), are also merged with Dermateoideae. Naevioideae, which mostly comprises pale or bright coloured species traditionally placed in the Dermateaceae, is retained in the family. However, these fungi do not conform closely in structure to typical members of the family and many have simple or reduced excipular structures which are difficult to interpret taxonomically. It is likely that the taxon as currently understood will prove to be heterogeneous, but further study of naevioid taxa is required before reconsidering the delimitation and taxonomic position of the subfamily.

It has not been possible in the current study to consider likely related genera which are currently referred to other families, notably *Lasiobelonium* Ellis & Everh. (Hyaloscyphaceae), which has a mollisoid excipulum, and *Calycellina* Höhn., *Orbiliopsis* Höhn., *Phaeohelotium* Kanouse, etc. (Leotiaceae), which have a cellular excipular structure apparently akin to that of some genera referred here to Dermateaceae. Similarly, it has not been possible to remove genera which are traditionally referred to Dermateaceae but appear to have little affinity with typical and core genera of the family.

The keys presented here are in principle practical ones, designed to distinguish the genera and not necessarily adequately to reflect taxonomy. However, an attempt has been made to reposition certain genera into the group with which they appear most closely related. *Diplonaevia*, for example, considered by Hein (1976) as belonging to the Naevoideae, is included here in the Dermateoideae.

Taxa which have been described or reported from Great Britain since the checklist of British Ascomycetes (Cannon *et al.*, 1985), are included here and, therefore, this account serves also as an up-to-date checklist for the British species of Dermateaceae, excluding *Mollisia* and *Pyrenopeziza*. Modern taxonomic concepts concerning this family have been taken into account in construction of the keys. The keys are, however, not necessarily based on a detailed study of herbarium specimens.

Keys are given to the subfamilies and to the genera. For each genus a short description is given, together with references to relevant modern literature, the number of known species in Great Britain and in total, a list of British species with their common synonyms and a key to the species, except for the genera *Mollisia* and *Pyrenopeziza*, which will be published elsewhere.

The lists of British species are mostly supported by specimens in the Kew Herbarium. If these are not in accordance with the Checklist (Cannon *et al.*, 1985), this has been indicated. The cited number of world species is based on the present literature, and may differ from that given in the Dictionary of the Fungi (Hawksworth *et al.*, 1995).

This work was initiated within the scope of the project 'The Ascomycetes of Great Britain and Ireland'. Preliminary publication of this synopsis to such a large and confusing group is considered important before presentation in the planned volumes on the British Ascomycota.

#### List of excluded genera

The following genera have been referred to Dermateaceae in British literature, but are excluded here:

##### *Chlorosplenium* Fr.

Referred to Dermateaceae in Hawksworth *et al.* (1995), following Dixon (1974), but British species

combined here belong in other genera.

##### *Cryptodiscus* Corda

Referred by Dennis (1978) to Dermateaceae, but shown by Sherwood (1977) to be best placed in Stictidaceae.

##### *Discorehmia* Kirschst.

Referred to ?Dermateaceae in Cannon *et al.* (1985), but examination of the type specimen of the type species, *D. eburnea* Kirschst., shows it to have an excipular structure similar to that of typical members of Leotiaceae.

##### *Durandiella* Seaver

In Cannon *et al.* (1985) two species are given as British, viz. *D. fraxini* (Schwein.) Seaver and *D. seriata* (Fr.) Groves. According to Groves (1952) *D. fraxini* does not occur in Europe, whereas *D. fraxini sensu* Massee (1895) and Phillips (1887) is *Tympanis columnaris* Höhn. *Durandiella seriata* does not seem to have a dermateoid structure, but we have not had the opportunity to examine material during the present study.

##### *Habrostictis* Fuckel

Placed by Dennis (1978) and Cannon *et al.* (1985) in Dermateaceae. However, on account of the texture and structure of the apothecia the genus is more appropriately placed in Orbiliaceae as shown by Spooner (1987).

##### *Lagerheima* Sacc.

Placed by Cannon *et al.* (1985) in Dermateaceae. However, as shown by Gamundi (1981), this is a synonym of *Bulgariella* which belongs in Leotiaceae.

##### *Patinella* Sacc.

Although the type species, *P. hyalophaea* Sacc., is probably referable to Dermateaceae (Spooner, 1987), the two species reported as British (*P. macrospora* Massee and *P. rubrotingens* (Berk. & Broome) Sacc.; Cannon *et al.*, 1985) belong elsewhere, possibly in Orbiliaceae.

##### *Phragmonaevia* Rehm

The genus is of doubtful taxonomic position, but not related to Dermateaceae; it is a possible synonym of *Karstenia* (see Sherwood, 1977). Of the three British species of this genus mentioned in Cannon *et al.* (1985), *P. hysteroioides* (Desm.) Rehm is a *Hysteropezizella*, and *P. fuckelii* Rehm and *P. peltigerae* (Nyl.) Rehm are of uncertain taxonomic position.

##### *Potebniamyces* Smerlis

Referred by Cannon *et al.* (1985) to Dermateaceae

following DiCosmo *et al.* (1983) who placed it tentatively in this family. However, further study of the genus by DiCosmo *et al.* (1984) has shown its taxonomic position to be uncertain.

*Pragmopora* A. Massal.

Although placed by Dennis (1978) in Dermateaceae, the genus seems structurally unlike typical members of that family as shown by Groves (1967). It is now usually placed in Leotiaceae (Eriksson & Hawksworth, 1993; Hawksworth *et al.*, 1995).

*Propolomyces* Sherwood

Included by Dennis (1978, as *Propolis* Fr.) in Dermateaceae, but the genus is referred now to Rhytismatales as suggested by Sherwood-Pike (1985).

**DERMATEACEAE** Fr., Summa Veg. Scand.

2:360, 1849 (as 'Dermatei').

= Mollisiaceae P. Karst. 1891

= Ploettnerulaceae Kirschst. 1924

Apothecia developed either within or below the epidermis and then immersed or becoming erumpent, sometimes subcuticular or superficial, sessile or short-stipitate. Hymenium varying from whitish to bright-coloured, or often greyish; receptaculum usually darker than hymenium. Outer excipulum at least near base a *textura angularis* or *textura globulosa*, consisting of elements with brown or sometimes pale yellowish-brown walls; hairs, setae or grana sometimes present; marginal excipulum hyaline or brown, cellular or not, sometimes gelatinised; medullary excipulum either cellular or hyphal, sometimes containing crystals. Asci clavate or cylindrical, I + or I - (i.e. pore blue or not in Melzer's reagent), thin-walled to thick-walled, (2-) 8-spored; spores 0 - several septate, rarely muriform, clavate, ellipsoid or fusiform, mostly smooth-walled, usually hyaline, sometimes pale brown or brown; paraphyses usually filiform, sometimes (apically) clavate or lanceolate, commonly hyaline, rarely with granulate walls.

Conidial state sometimes present, in several form genera, viz. *Anguillospora*, *Chrysosporium*, *Cryptocline*, *Cryptosporiopsis*, *Cylindrocolla*, *Cystodendron*, *Entomosporium*, *Foveostroma*, *Gloeosporidiella*, *Hainesia*, *Helicodendron*, *Leptothyrium*, *Marssonina*, *Microgloeum*, *Micropera*, *Monostichella*, *Phialophora*, *Phloeosporella*, *Phlyctema*, *Pilidium*,

*Pseudocercosporella*, *Sphaeronema*, *Sporonema*, *Trichosporiella*.

Saprophytic or parasitic, on stems and leaves of dicotyledonous and monocotyledonous plants, often on woody substrata.

### Key to Subfamilies

1. Apothecia erumpent or immersed, mostly brightly coloured or whitish, disc often pruinose, mostly lignicolous; commonly parasitic. Spores mostly broadly ellipsoid, commonly septate, sometimes muriform, large, commonly over  $18 \times 6 \mu\text{m}$ . Asci thick-walled, with broad pore deep blue in Melzer's reagent (sometimes only after pretreatment with KOH). Conidial state, if present, *Cryptosporiopsis* or *Phlyctema*.....**Peziculoideae** Nannf.
- 1<sup>1</sup>. Apothecia immersed, erumpent or superficial, if brightly coloured then not lignicolous; disc not or rarely pruinose; parasitic or not. Spores various, sometimes septate, but never muriform, rarely longer than  $18 \mu\text{m}$ . Asci mostly thin-walled, apical pore blue or not in Melzer's reagent. Conidial state when present not *Cryptosporiopsis* or *Phlyctema*.....2
2. Outer excipulum pale, usually subhyaline to yellowish throughout, rarely brownish near the margin, elements sometimes thick-walled but not gelatinised; marginal excipulum often reduced; stroma lacking; apothecia not developed beneath a shield; saprophytic on monocotyledonous and dicotyledonous plants .....**Naevioideae** Nannf.
- 2<sup>1</sup>. Outer excipulum brown to dark brown, at least at the base, rarely pale and then apothecia developed beneath a shield of brownish hyphae; sometimes gelatinised; marginal excipulum sometimes reduced; stroma present or not; saprophytic or parasitic on various substrata.....**Dermateoideae** (including **Pseudopezizoideae** Nannf. & **Drepanopezizoideae** Nannf.)

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## List of included genera

Index to genera, including common synonyms, and subfamily placement as accepted in the present account:

<i>Actinoscypha</i> P. Karst.	= <i>Micropeziza</i>
<i>Belonium</i> Sacc.	=? <i>Pyrenopeziza</i>
<i>Belonopsis</i> (Sacc.) Rehm	Dermateoideae
<i>Blumeriella</i> Arx	Dermateoideae
<i>Briardia</i> Sacc.	= <i>Duebenia</i>
<i>Bulbomollisia</i> Graddon	= <i>Mollisia</i>
<i>Calloria</i> Fr.	Naevioideae
<i>Callorina</i> Korf	= <i>Calloria</i>
<i>Catinella</i> Boud.	Dermateoideae
<i>Cejpia</i> Velen.	Dermateoideae
<i>Cenangella</i> Sacc.	= <i>Dermea</i>
<i>Chaetonaevia</i> Arx	Naevioideae
<i>Coleosperma</i> Ingold	Naevioideae
<i>Coronellaria</i> P. Karst.	Dermateoideae
<i>Crustomollisia</i> Svrček	Naevioideae
<i>Dennisiodiscus</i> Svrček	Dermateoideae
<i>Dermea</i> Fr.	= <i>Dermea</i>
<i>Dermatella</i> P. Karst.	= <i>Dermea</i>

<i>Dermea</i> Fr.	Dermateoideae
<i>Dibeloniella</i> Nannf.	Dermateoideae
<i>Dibelonis</i> Clem.	= <i>Leptotrochila</i>
<i>Diplocarpa</i> Mass.	Dermateoideae
<i>Diplocarpon</i> Wolf	Dermateoideae
<i>Diplonaevia</i> Sacc.	Dermateoideae
<i>Discohainesia</i> Nannf.	Dermateoideae
<i>Drepanopeziza</i> (Kleb.) Höhn.	Dermateoideae
<i>Duebenia</i> Fr.	Naevioideae
<i>Ephelina</i> Sacc.	= <i>Leptotrochila</i>
<i>Eupropolella</i> Höhn.	Dermateoideae
<i>Fabraea</i> Sacc.	= <i>Leptotrochila</i>
<i>Graddon</i> Dennis	Dermateoideae
<i>Haglundia</i> Nannf.	Dermateoideae
<i>Higginsia</i> Nannf.	= <i>Blumeriella</i>
<i>Hysteronaevia</i> Nannf.	Dermateoideae
<i>Hysteropeziza</i> Rabenh.	= <i>Pyrenopeziza</i>
<i>Hysteropezizella</i> Höhn.	Dermateoideae
<i>Hysterostegiella</i> Höhn.	Dermateoideae
<i>Laetinaevia</i> Nannf.	Naevioideae
<i>Leptotrochila</i> P. Karst.	Dermateoideae
<i>Melachroia</i> Bourd.	= <i>Podophacidium</i>
<i>Merostictis</i> Clem.	= <i>Diplonaevia</i>
<i>Micropeziza</i> Fuckel	Dermateoideae
<i>Mollisia</i> (Fr.) P. Karst.	Dermateoideae
<i>Mollisiopsis</i> Rehm	= <i>Mollisia</i>
<i>Myridium</i> Clem.	= <i>Laetinaevia</i>
<i>Naevia</i> B.Hein	Naevioideae
<i>Naevia</i> Fr.	= <i>Naevia</i>
<i>Naeviopsis</i> B.Hein	Naevioideae
<i>Niesslella</i> Höhn.	= <i>Micropeziza</i>
<i>Nimbomollisia</i> Nannf.	= <i>Niptera</i>
<i>Niptera</i> Fr.	Dermateoideae
<i>Ocellaria</i> (Tul. & C. Tul.) P. Karst.	Peziculoideae
<i>Patellariopsis</i> Dennis	Dermateoideae
<i>Pezicula</i> Tul. & C. Tul.	Peziculoideae
<i>Pirottaea</i> Sacc.	Dermateoideae
<i>Ploettnera</i> Henn.	Naevioideae
<i>Ploettnerula</i> Kirschst.	= <i>Pirottaea</i>
<i>Podophacidium</i> Niessl.	Dermateoideae
<i>Pseudonaevia</i> Dennis & Spooner	Dermateoideae
<i>Pseudopeziza</i> Fuckel	Dermateoideae
<i>Pyrenopeziza</i> Fuckel	Dermateoideae
<i>Schizothyrioma</i> Höhn.	Dermateoideae
<i>Scutobelonium</i> Graddon	Dermateoideae
<i>Scutomollisia</i> Nannf.	Dermateoideae
<i>Spilopodia</i> Boud.	Dermateoideae
<i>Stegopeziza</i> Höhn.	= <i>Hysterostegiella</i>
<i>Tapesia</i> Fuckel	= <i>Mollisia</i>
<i>Trichobelonium</i> (Sacc.) Rehm	= <i>Belonopsis</i>
<i>Trichodiscus</i> Kirschst.	= <i>Dennisiodiscus</i>
<i>Trochila</i> Fr.	Dermateoideae