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An account of the Fungi of Arran, Gigha and Kintyre

P. M. KIRK* & B. M. SPOONER‡

Summary. An account of the fungi of Arran, Gigha and Kintyre is presented. In addition to records derived from recent field work, all published, unpublished and herbarium records are included in an annotated list enumerating 946 taxa. A brief account of the history of mycology in the area is presented. This area, on the west coast of Scotland, is in many ways comparable to Mull, for which a comprehensive account of the fungi was published in 1978. A preliminary comparison of the species complement of these areas is, therefore, presented. Following the list are taxonomic accounts of Ascomycetes and Deuteromycetes which include new taxa and new or interesting British records. *Belemnospora verruculosa* P. M. Kirk, *Bryoscyphus* Spooner, *Cistella lagenipilus* Spooner, *Dictyosporium foliicola* P. M. Kirk, *Endophraggiella arranensis* P. M. Kirk, *Fuschalara clavatispora* P. M. Kirk, *Helicoma irregulare* P. M. Kirk, *Phaeoscypha* Spooner, *Pterygosporopsis rhododendri* P. M. Kirk, *Sydowiella juncina* Spooner are described as new. The new combinations *Bisporella scolochloae* (de Not.) Spooner, *Bryoscyphus conocephali* (Boyd) Spooner, *B. dicrani* (Ade & Höhnelt) Spooner, *B. marchantiae* (Berk.) Spooner, *B. turbinatus* (Fuckel) Spooner, *Calycellina juniperina* (K. & L. Holm) Spooner, *Cephalotrichum microsporium* (Sacc.) P. M. Kirk, *Chalara africana* (B. Sutton & Piroz.) P. M. Kirk, *C. aspera* (Piroz. & Hodges) P. M. Kirk, *C. bulbosa* (B. Sutton & Piroz.) P. M. Kirk, *C. laevis* (B. Sutton & Hodges) P. M. Kirk, *C. ramosa* (Nag Raj & Kendrick) P. M. Kirk, *Laetinaevia marina* (Boyd) Spooner, *Lanzia vacini* (Velen.) Spooner, and *Phaeoscypha cladii* (Nag Raj & Kendrick) Spooner are proposed.

I. INTRODUCTION

Much has been published in recent years on the fungi of the Hebridean Islands, based largely on extensive field work by R. W. G. Dennis, but also by R. Watling and others. The most important of these accounts comprise those for Rhum (Dennis 1964; Watling 1970), Colonsay and Oronsay (Dennis 1980a), St Kilda (Dennis 1980b; Watling & Richardson 1971), Barra Isles (Dennis 1979), and Skye (Brown 1980; Reid 1980), with other islands and additions by Dennis (1972, 1975, 1980c). By far the most comprehensive treatment, however, is that for Mull by Henderson & Watling (1978), an account based on five years field work, enumerating 1787 species. Additions to this list are being prepared by R. Watling.

Whilst not part of the Hebridean group, the area under consideration in the present account lies geographically close to these islands and is similarly influenced by warm Atlantic currents, so that floristic comparisons are justified. No previous extensive account of the fungi of the area has been published.

The present work takes account of the comparatively few published records that exist, but is based largely on recent field work. This involved a brief but productive visit by the authors to Arran from 8–9 Sept. 1980, during which over 350 species were recorded. The greatest contribution, however, has been by R. W. G. Dennis who supplied many records, particularly of Agarics and Uredinales, following visits to Arran in Sept. 1981 and June 1982, and to Gigha and Kintyre in Sept. 1980 and May 1981. The species list

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from the area, though obviously far from complete, is now sufficiently extensive to allow comparison with the Mull Flora.

DESCRIPTION OF THE AREA

The area considered here includes the Isle of Arran, with Holy Isle, which largely comprise Watsonian Vice County 100, plus the Isle of Gigha and the Kintyre peninsula south of the isthmus of Tarbert but excluding Knapdale to the north, which together constitute Vice County 101 (Fig. 1). The area is approximately 470 sq. miles in extent, and thus directly comparable to that of Mull.

The Kintyre peninsula is a low-lying hilly region 40 miles long and an average 7 miles wide. Most of the peninsula and the whole of the Isle of Gigha is composed of Pre-Cambrian quartzose-mica schists, though to the south of Campbeltown is an extensive exposure of Lower Old Red Sandstone. Outcrops of Carboniferous Limestone occur north of Campbeltown and in several areas near Killean and Tayinloan, and form cliffs in the Largybaan area near the Point of Mull near Dalsmirran. Tertiary basaltic dykes are frequent throughout the entire area.

The geology of Arran is more complex. The island, some 165 sq. miles in extent, is largely Hebridean in character and has a geological affinity with the Inner Hebrides. A wide range of rock formations occur. To the south is a high, undulating plateau-like area with sediments ranging from ancient Dalradian schists to recent and glacial deposits. Tertiary deposits are lacking, though contemporaneous lavas and intrusive granite sills and dykes are common. The northern part is a massive Tertiary granite intrusion largely surrounded by Dalradian schists. Outcrops of Old Red Sandstone occur to the east and south of the intrusion, succeeded by Carboniferous and Permian sediments which are exposed in the north-east and at the Cock of Arran.

There is now little deciduous or native coniferous woodland on Arran, though relatively extensive coniferous plantations, frequently of *Pinus sylvestris*, occur, especially to the south-west of the island. There are also some older plantations of spruce and larch. The summits to the north are largely bare rock, though extensive peat cover around these determine the vegetation of sedges, various low plants and heathers, with much bracken at lower levels. The high southern moorland is dominated by heathers and bracken with frequent stands of *Eriophorum* and *Molinia*. Lower hillsides and glens support trees such as species of *Corylus*, *Crataegus*, *Betula* and *Sorbus*, and there is some scrubby oak and ash, particularly at field margins. Nearer sea level species of *Alnus* and *Salix* occur. Woodland is similarly limited on the Kintyre peninsula, and occurs on Gigha only in the south around Achamore. Available habitats include moorland, grassland and bog, the shore line comprising rocky cliffs or mud-flats, with sand dunes near Machrihanish. A Flora of the area was recently published by Cunningham & Kenneth (1979).

The climate throughout is mild, due to the warming influence of the Gulf Stream. The south and west coasts of Kintyre are exposed to the prevailing moisture-laden south-westerly wind, which, being little impeded by the low-lying peninsula, also create a wet climate on Arran.

Two formal gardens occur, at Brodick on Arran and at Achamore on Gigha, where the mild climate allows cultivation of many exotic plants. *Cordyline australis* and *Phormium tenax* are often seen even in private gardens,



FIG. 1. Map of Arran, Gigha and Kintyre.

and many *Rhododendron* species and hybrids flourish, in addition to *R. ponticum* which is now naturalized in many areas, particularly in the north-east of Arran. Some species of *Eucalyptus* and *Nothofagus* flourish in addition to *Elaeagnus macrophyllus*, *Escallonia* sp., *Laurus nobilis* and *Olearia macrodonta*. *Griselinia* sp. is employed extensively at Achamore on Gigha to form hedgerows and shelterbelts.

MYCOLOGICAL INVESTIGATION OF THE AREA

Little attention has been paid in the past to the fungi of the area, and the comparatively few published records refer almost entirely to the Isle of Arran. The earliest records, published by Paterson (1876), were included in

an account of the fungi of the west of Scotland. Unfortunately, although Arran was given as amongst the well worked areas, virtually none of the records are localised so that, largely, species from the Island cannot be identified. Accounts by Bryce (1859, 1872) embraced the geology, botany and most aspects of the natural history of Clydesdale and Arran and included lists of plants from Arran but gave no account of the fungi. Reports on two botanical excursions to Arran by Balfour (1860, 1870a, 1870b) similarly do not include fungi, though a list of lichens is included in the former. Lee (1937, 1953) dealt with the Flora of the Clyde area, including Arran, but was again not concerned with the fungi. There is, surprisingly, no more recent Flora of Arran available.

An account of the Flora and Fauna of the west of Scotland, published by the British Association for the Advancement of Science, included two lists of fungi. An enumeration of the microscopic fungi was presented by Boyd (1901) and of Hymenomycetes and Gasteromycetes by Stewart (1901). Only relatively few of these species, however, were reported from Arran. Later additions to the list, including further records for Arran, were published by Boyd (1909, 1910, 1912, 1913, 1915, 1916). It would appear that no records from the area were published by the Cryptogamic Society of Scotland, although their 11th Annual Conference in 1885 was held on Arran. The fungi were reported as 'not abundant' on that occasion (Anon 1886), and no list was presented. The 38th Conference to Rothesay in 1913 and the 40th to West Kilbride in 1921 did not visit Arran. Apart from an account by Ing (1970) of Myxomycetes from the Scottish Islands, which included species collected on Arran, no other accounts relating particularly to the survey area have been published.

From published accounts, a total of 157 species have been recorded from the survey area though, unfortunately, very few of these records are substantiated by herbarium material. In addition, a few specimens, representing unpublished records, have been located in herb. K, the majority of which were collected by D. A. Boyd.

COMPARISON WITH MULL

Due to the limited field work possible, there has been little opportunity in the present survey for the study of specialized habitats such as soil and leaf litter, dung and water. Consequently, fungi characteristic of these habitats are poorly represented or absent from the present list. In contrast, a more extensive study of these habitats was carried out on Mull and, therefore, no meaningful comparisons of the species complement of these habitats can be made.

Although, as mentioned above, the present list must be regarded as far from complete it is interesting that a high percentage of those species recorded were not found on Mull. A significant proportion of these, however, are known elsewhere in the Hebrides, and others occur on the western mainland of Scotland. There is surely, therefore, no doubt that many, and perhaps the majority, of these fungi are present on Mull. This indicates that the Mull survey, despite field work over a period of five years, is also far from complete, and undoubtedly highlights the difficulties involved in recording fungi.

A number of interesting points arise from a consideration of the numerical analysis presented in Table 1. With regard to 'Phycomycetes', whilst the

TABLE 1. Comparative analysis of species

GROUP	Number in present list (% of sub-total)	Number unrecorded from Mull (% of group total)	Number unrecorded from Hebrides (% of group total)	% of Mull group total found	Number recorded from Mull (% of sub-total)
'Phycomycetes'	26 (3)	14 (54)	7 (27)	22	54 (3)
Basidiomycetes	371 (40)	70 (19)	37 (10)	32	948 (50)
<i>Tetramycetes</i>	81	16	8	64	101
<i>Hymenomycetes</i>	276	53	28	27	830
<i>Gasteromycetes</i>	12	1	1	65	17
Ascomycetes	266 (29)	83 (31)	61 (23)	31	589 (31)
Deuteromycetes	257 (28)	169 (65)	135 (52)	30	301 (16)
<i>Hyphomycetes</i>	162	108	87	27	206
<i>Coelomycetes</i>	95	61	48	36	95
Sub-total	920	336 (36)	240 (26)	30	1892
Myxomycetes	26	2	2	30	81
Total	946	338 (36)	242 (26)	31	1973

percentage representation of this group in both surveys is the same, it is significant that 54% of those recorded here were not found on Mull. This figure is even higher (62%) when *Peronosporaceae* and *Albuginaceae* alone are considered. In both surveys a total of sixteen species from these families were recorded and it might be expected that, for such a small and host-specialized group, a large overlap in species complement would occur. However, this manifestly is not the case since ten species in the present survey were not recorded from Mull.

It will be noted that, in the present list, 30% of the fungi recorded from Mull are included and approximately the same percentage occurs for each of the major groups. However, a number of significant differences are masked by these figures, particularly with regard to Teliomycetes and Deuteromycetes. In the case of the former, the equivalent figure is 64% and is clearly due to the particular attention paid here to Uredinales. This is a high percentage in view of the restricted collecting time, but undoubtedly reflects the specialized habitat of species in this large group of fungi, many species being relatively conspicuous and thus easily collected. Even so, it is remarkable that 16% of the species listed here were not recorded from Mull.

A comparison of the Deuteromycete complement of the two lists is also of interest. No sub-division into Hyphomycetes and Coelomycetes was presented in the Mull Flora and, as with other groups, approximately 30% of the Mull Deuteromycete total are recorded here. This masks, however, significant differences in species complement due to recording bias towards particular habitats, mostly with regard to Hyphomycetes. Of the 206 Hyphomycetes included in the Mull list, 93 were isolated from soil, 13 from foam samples and 100 were recorded from other substrata such as leaf litter, dead wood and stems. Only these latter habitats were investigated in the present survey, from which 164 species were identified. Of these, 56 were found on Mull, representing only 27% of the Mull total but 56% of those from the equivalent habitat. A comparatively large number of species was recorded from these habitats in the present survey, in spite of the small amount of field work carried out, and is a result of the particular attention which they have received. This indicates how inadequately investigated these particular habitats were during the Mull survey despite field work over five years.

Due to the often sporadic fruiting of many species of Ascomycetes and Hymenomycetes there is a need for collecting over extensive periods to gain an adequate coverage. They are undoubtedly under-represented in the present survey and it is felt, therefore, that no useful comparisons can be made at this stage.

II. ANNOTATED LIST OF FUNGI FROM ARRAN, GIGHA & KINTYRE

ARRANGEMENT AND FORMAT OF LIST

For ease of comparison, the arrangement at ordinal level and above follows that adopted in the Mull Flora. The division into families in that work is only employed here for orders represented by a large number of taxa.

Where names have been adopted which differ from those used in the Mull Flora the latter have also been cited.

Details of pleomorphic fungi are included here under the name of the teleomorph unless this was not collected, in which case details are given under the name of the anamorph. Cross references, in square brackets, to teleomorph names are included when the anamorph only was collected and to anamorph names when both were collected.

Names preceded by an asterisk represent taxa not recorded from Mull. For these, the known distribution elsewhere in the Hebrides is given. Further, for species of Uredinales recorded in the present work on hosts other than those from which they are known on Mull, the hosts for the latter are given. Different or additional hosts are similarly noted where Hebridean distributions are given. Other relevant information including notes on distribution and/or morphology is added where appropriate.

BASIDIOMYCETES

AGARICALES

CANTHARELLACEAE

Cantharellus cibarius Fr.

Arran: On soil in leaf litter, Clauchan Glen, Sept. 1980 (K); under *Fagus sylvatica*, Goat Fell track and under *Betula* sp., Glen Chalmadale, Sept. 1981 (K).

BOLETACEAE

Boletus badius Fr.

Arran: In leaf litter, Pirnmill, Sept. 1980; under conifers, Brodick Castle, Sept. 1981 (K).

B. calopus Fr.

Arran: Under *Fagus sylvatica*, Brodick Castle, Sept. 1981 (K).

B. chrysenteron Bull.

Arran: In leaf litter, Clauchan Glen, Sept. 1980; Brodick Castle, Sept. 1981 (K).

B. edulis Bull.:Fr.

Arran: Under conifers, Giant's Graves near Whiting Bay, Sept. 1981 (K).

B. erythropus (Fr.:Fr.) Secr.

Arran: In grass, Brodick Castle, Sept. 1980.

B. subtomentosus Fr.

Arran: (Paterson, 1876 as *B. striatipes* Secr.); in leaf litter, Clauchan Glen, Sept. 1980.

Leccinum scabrum (Bull.:Fr.) Gray

Arran: Under *Betula* sp., Brodick Castle and Glen Cloy track, Sept. 1981 (K). Gigha: Under *Betula* sp., Tarbert, Sept. 1980 (K).

L. varicolor Watling

Arran: Under *Betula* sp., Goat Fell track, Sept. 1981 and Sept. 1982 (K).

**L. versipelle* (Fr. & Hök) Snell

Arran: Under *Betula* sp., Goat Fell track, Sept. 1981 (K). Recorded from Skye and widespread in Great Britain. The related *L. aurantiacum* Gray is recorded from Mull.

Suillus bovinus (L.:Fr.) Kuntze

Arran: Under *Pinus* sp., Glen Cloy track, Sept. 1981 (K).

S. grevillei (Klotzsch) Singer

Arran: Under *Larix* sp., Lochranza and under conifers, Giant's Graves near Whiting Bay, Sept. 1981 (K).

S. luteus (L.:Fr.) Gray

Arran: Under *Pinus* sp., east of Lamlash road near Brodick, Sept. 1981 (K).

S. variegatus (Sow.: Fr) Kuntze

Arran: Under *Pinus* sp., Brodick Castle, Sept. 1981 (K).

Tylopilus felleus (Fr.) P. Karsten

Arran: (Paterson 1876 as *Boletus felleus*).

PAXILLACEAE

Paxillus involutus (Batsch:Fr.) Fr.

Arran: In grass and leaf litter, Merkland Point, Brodick Castle, Kingscross Point and Clauchan Glen, Sept. 1980; Brodick Castle and Glen Chalmadale, Sept. 1981. Kintyre: In *Alnus* sp. swamp, Glen Breackerie near Dalsmirran, Sept. 1980 (K).

HYGROPHORACEAE

- **Hygrocybe berkeleyi* (P. Orton) P. Orton
Arran: In grass at roadside, Ballarie, Sept. 1980 (K). Recorded from Coll, Harris, Rhum, S. Uist, St Kilda and Skye. Surely overlooked on Mull.
- H. calyptriformis* (Berk. & Broome) Fayod
Kintyre: In turf, Kilkerran churchyard, Sept. 1980 (K).
- H. ceracea* (Wulfen:Fr.) P. Karsten
Arran: Lochranza, Sept. 1981 (K). Kintyre: In turf, Davaar Island and Saddell Castle woods, Sept. 1980 (K).
- H. chlorophana* (Fr.) P. Karsten
Arran: Lochranza, Sept. 1981 (K). Kintyre: In turf, Kilkerran churchyard, Sept. 1980 (K).
- H. coccinea* (Schaffer:Fr.) Kummer
Kintyre: In maritime grassland, Davaar Island, Sept. 1980 (K).
- H. conica* (Scop.:Fr.) Kummer
Arran: In grass near stone circle, Machrie Moor, Sept. 1981 (K) and June 1982. Kintyre: In maritime grassland, Davaar Island, Sept. 1980 (K).
- H. conicoides* (P. Orton) P. Orton & Watling
Kintyre: Machrihanish dunes, Sept. 1980 (K).
- H. flavescens* (C. Kauffman) A. H. Sm. & Hesler
Arran: In grass near sea, Kingscross Point, Sept. 1980 (K). Kintyre: In turf, Kilkerran churchyard and on moors near Lochorodale lower cairn in Conie Glen, Sept. 1980 (K).
- H. fornicata* (Fr.) Singer
Kintyre: In turf, Kilkerran churchyard, Sept. 1980 (K).
- H. insipida* (J. E. Lange ex Lundell) Moser
Arran: Lochranza, Sept. 1981 (K).
- H. lacma* (Schumacher:Fr.) P. Orton & Watling
Kintyre: Near Lochorodale lower cairn in Conie Glen, Sept. 1980 (K).
- H. laeta* (Pers.:Fr.) P. Karsten
Kintyre: In grass at roadside, west of Achinloan Head, Sept. 1980 (K).
- H. marchii* (Bresad.) Singer
Kintyre: In turf, Kilkerran churchyard, Sept. 1980 (K).
- H. miniata* (Fr.) Kummer
Arran: Lower Glen Catacol, June 1982 (K).
- H. nigrescens* (Quélet) Kühner
Arran: Lochranza, Sept. 1981 (K). Kintyre: In turf, Kilkerran churchyard, Sept. 1980 (K).
- H. nivea* (Scop.:Fr.) P. Orton & Watling
Arran: Lochranza and Machrie moor circles, Sept. 1981 (K). Kintyre: In turf, Achinloan, Davaar Island and Kilkerran, Sept. 1980 (K).
- H. pratensis* (Pers.:Fr.) Donk
Arran: In grass under deciduous trees near stream, Clauchan Glen, Sept. 1980 (K); Lochranza and Machrie moor circles, Sept. 1981 (K). Kintyre: In turf, Achinloan and Davaar Island, Sept. 1980 (K).
- H. psittacina* (Schäffer:Fr.) P. Karsten
Arran: Lochranza and Machrie moor circles, Sept. 1981 (K). Kintyre: In turf, Kilkerran churchyard and Glen Lussa, Sept. 1980 (K).
- H. quieta* (Kühner) Singer
Arran: Machrie moor circles, Sept. 1981 and June 1982 (K). Kintyre: In turf at roadside, Glen Breackerie, Sept. 1980 (K).
- H. russocoriacea* (Berk. & Miller) P. Orton & Watling
Arran: North Glen Sannox, Sept. 1981 (K). Kintyre: In grass at roadside, west of Achinloan Head, Sept. 1980 (K).
- H. strangulata* (P. Orton) Kriessel
Arran: In grass near sea, Kingscross Point, Sept. 1980 (K).
- H. unguinosa* (Fr.) P. Karsten
Arran: In grass near sea, Kingscross Point, Sept. 1980 (K); Lochranza, Sept. 1981 (K).
- H. vitellina* (Fr.) P. Karsten
Arran: In grass near sea, Kingscross Point, Sept. 1980 (K).
- Hygrophorus subviolaceus* Peck
Arran: In grass near sea, Kingscross Point, Sept. 1980 (K).

PLEUROTACEAE

- Pleurotus ostreatus* (Jacquin:Fr.) Kummer
Arran: (Docker, pers. comm.).

TRICHOLOMATACEAE

- Armillaria mellea* (Vahl:Fr.) Kummer
Arran: On dead stumps and buried wood, Lamlash Road, Kingscross Point, Clauchan Glen and Ballarie, Sept. 1980; rhizomorphs only, on dead trunks, Brodick Castle, Sept. 1981. Gigha: Tarbert, Sept. 1980 (K); rhizomorphs only, Achamore, Sept. 1981.

- Calyptrina capula* (Holmsk.:Fr.) Quélet
Arran: On *Urtica dioica* stem, Clauchan Glen, Sept. 1980.
- Clitocybe dealbata* (Sow.:Fr.) Kummer
Kintyre: Machrihanish golf course, Sept. 1980 (K).
- **C. gallinacea* (Scop.:Fr.) Gillet
Arran: (Stewart 1901 as *Agaricus (Clitocybe) gallinaceus*). Doubtful.
- C. suaveolens* (Schumacher) Kummer
Arran: Brodick Castle, Sept. 1981 (K).
- Collybia butyracea* (Bull.:Fr.) Kummer
Arran: In leaf litter, Brodick to Lamlash road and under *Fagus sylvatica* near stream, Clauchan Glen, Sept. 1980 (K).
- C. confluens* (Pers.:Fr.) Kummer
Arran: Under *Abies* sp., Brodick to Lamlash road, Sept. 1980 (K).
- C. dryophila* (Bull.:Fr.) Kummer
Arran: In leaf litter, Clauchan Glen, Sept. 1980.
- C. maculata* (Alb. & Schwein.:Fr.) Kummer
Arran: Under conifers, east of Lamlash road near Brodick, Sept. 1981 (K).
- C. peronata* (Bolt.:Fr.) Kummer
Arran: In grass near trees, Brodick Castle, Kingscross Point and Clauchan Glen, Sept. 1980 (K).
- Cystoderma amianthinum* (Scop.:Fr.) Fayod
Arran: Lochranza and east of Lamlash road, Sept. 1981 (K). Kintyre: In grass at roadside, west of Achinloan Head, Sept. 1980 (K).
- Dermoloma atrocinerum* (Pers.) P. Orton
Arran: In grass at roadside, Lamlash to Brodick road, Sept. 1981 (K). Kintyre: In turf, Kilkerran churchyard, Sept. 1980 (K).
- Hygrophoropsis aurantiaca* (Wulfen:Fr.) Maire
Arran: Brodick golf course and Lochranza, Sept. 1981 (K).
- Laccaria amethystea* (Bull.) Murrill
Arran: In leaf litter, Kingscross Point and Clauchan Glen, Sept. 1980; under *Quercus* sp., Brodick Castle, under *Betula* sp., Glen Cloy track, Sept. 1981 (K). Kintyre: under *Fagus sylvatica*, Saddell Castle woods, Sept. 1980 (K).
- L. laccata* (Scop.:Fr.) Cooke
Arran: In leaf litter, Merkland Point, Brodick Castle and Brodick to Lamlash road, Sept. 1980; Brodick Castle, Sept. 1981 (K). Kintyre: Saddell Castle woods, in moss under *Salix* sp., Glen Breackerie, Sept. 1980 (K).
- Lachnella albo-violascens* (Alb. & Schwein.) Fr.
Kintyre: On *Arctium* sp., Tainloan, May 1981 (K).
- **L. eruciformis* (Fr.) W. B. Cooke
Gigha: On *Phormium tenax*, Achamore, May 1981 (K). Recorded from Rhum as *Cyphella* sp.
- **Lepista saeva* (Fr.) P. Orton
Arran: (Docker, pers. comm.). Widespread in southern Scotland.
- **Lyophyllum connatum* (Schumacher:Fr.) Singer
Arran: In grass at roadside near deciduous trees, Lamlash road near Brodick, Sept. 1981 (K). Unrecorded in the Hebrides. Apparently less common in Scotland than in southern England.
- **Macrocyttidia cucumis* (Pers.:Fr.) Heim
Arran: In grass near trees, Lamlash road near Brodick, Sept. 1980 (K). Recorded from Skye. Widespread throughout Great Britain.
- Marasmius androsaceus* (L.:Fr.) Fr.
Arran: On *Calluna vulgaris* stems, Lamlash road, Sept. 1980 (K); in pine litter, east of Lamlash road near Brodick, Sept. 1981 (K); on *Calluna* sp., Cock of Arran, June 1982 (K).
- **M. calopus* (Pers.:Fr.) Fr.
Arran: (Watling, unpubl.). Recorded on the mainland from Morvern.
- **M. epiphyllum* (Pers.:Fr.) Fr.
Arran: On fallen dead leaves of *Corylus avellana*, Kildonan, Sept. 1981 (K). Recorded from Barra, Mingulay and Tiree. Widespread throughout Great Britain.
- M. oreades* (Bolt.:Fr.) Fr.
Arran: In grass, Ballarie, Sept. 1980. Gigha: In turf, Leim Bay, May 1981 (K).
- M. ramealis* (Bull.:Fr.) Fr.
Arran: On twigs, Pirnmill, Sept. 1980 (K).
- **M. saccharinus* (Batsch:Fr.) Fr.
Arran: (Paterson 1876). Needs confirmation.
- **Melanoleuca melaleuca* (Pers.:Fr.) Murrill
Kintyre: In pasture, Westport, Sept. 1980 (K). Recorded from Skye. Occurs in Morvern and as far north as the Moray Firth.
- Mycena adonis* (Bull.:Fr.) Gray
Arran: Under conifers, east of Lamlash road near Brodick, Sept. 1981 (K).
- M. capillaripes* Peck
Arran: Under conifers, east of Lamlash road near Brodick, Sept. 1981 (K).

- Mycena fibula* (Bull.:Fr.) Kühner
Arran: In moss, Merkland Point, Brodick Castle, Kingscross Point and Clauchan Glen, Sept. 1980. Kintyre: In turf, Kilkerran churchyard and head of Glen Conie, Sept. 1980 (K).
- M. filopes* (Bull.:Fr.) Kummer
Arran: On mossy trunk, Dippin, Sept. 1981 (K). This is var. *pumila* of Kühner & Romagnesi.
- M. galericulata* (Scop.:Fr.) Gray
Arran: On rotten wood, Pirmill, Sept. 1980; on dead branches, Lochranza, Sept. 1981 (K).
Kintyre: On fallen branches, Saddell Castle woods, Sept. 1980 (K).
- M. galopus* (Pers.:Fr.) Kummer
Arran: In leaf litter, Merkland Point, Sept. 1980.
- **M. galopus* (Pers.:Fr.) Kummer var. *candida* J. E. Lange
Arran: In deciduous wood, Clauchan Glen, Sept. 1980 (K).
- M. hiemalis* (Osbeck:Fr.) Quélet
Kintyre: On bark of *Fraxinus* sp., Saddell, Sept. 1980 (K).
- M. melata* (Fr.:Fr.) Kummer sensu J. E. Lange
Kintyre: On rotting *Juncus* sp., Achinloan Road, Sept. 1980 (K).
- M. cf. polygramma* (Bull.:Fr.) Gray
Arran: Under *Fagus sylvatica*, Clauchan Glen, Sept. 1980 (K).
- M. pura* (Pers.:Fr.) Kummer
Gigha: Tarbert, Sept. 1980 (K).
- M. sanguinolenta* (Alb. & Schwein.:Fr.) Kummer
Arran: In leaf litter, Brodick to Lamlash road, Kingscross Point and Clauchan Glen, Sept. 1980; Dippin and Whiting Bay, Sept. 1981 (K); on *Juncus* sp., Cock of Arran, June 1982 (K).
- M. swartzii* (Fr.:Fr.) A. H. Sm.
Arran: In moss, Merkland Point, Sept. 1980.
- Nyctalis asterophora* Fr.
Arran: On decaying *Russula nigrescens*, Pirmill, Sept. 1980 (K).
- Omphalina ericetorum* (Fr.:Fr.) J. E. Lange
Arran: In *Sphagnum* sp., Goat Fell, Sept. 1981. Gigha: In *Sphagnum* sp., east of Tarbert, May 1981 (K); in pasture, Rudha Cairn Bhain, Sept. 1980 (K). Kintyre: Achinloan, Glen Breackerie and Glen Lussa, Sept. 1980 (K).
- Oudemansiella mucida* (Schrader:Fr.) Höhnelt
Arran: (Docker, pers. comm.).
- O. radicata* (Relhan:Fr.) Singer
Arran: On buried wood, Clauchan Glen, Sept. 1980.
- Phyllotus porrigens* (Pers.:Fr.) P. Karsten
Arran: On conifer stump, Brodick Castle, Sept. 1981. Kintyre: On conifer logs, Saddell Castle woods, Sept. 1980 (K).
- **Stachyomphalina striatula* (Kühner) Bigelow
Kintyre: Moors at Lochorodale lower cairn in Conie Glen, Sept. 1980 (K). Recorded from Harris (as *Clitocybe striatula* (Kühner) P. Orton) and Rhum (as *Rhodocybe striatula* Kühner). Scattered throughout Great Britain, but perhaps more frequent in the north.
- Tephroclype palustris* (Peck) Donk
Arran: In *Sphagnum* sp., June 1982 (K).
- Tricholoma argyraceum* (Bull.) C. Gillet
Arran: Under *Fagus sylvatica*, foot of Goat Fell track near Brodick Castle, Sept. 1981 (K).
- T. fulvum* (DC.:Fr.) Sacc.
Arran: Under *Betula* sp., foot of Goat Fell track near Brodick Castle, Sept. 1981 (K).
- **T. virgatum* (Fr.:Fr.) Kummer
Arran: In mixed woodland, Brodick Castle, Sept. 1980 (K). Common in Scotland.
- Tricholomopsis rutilans* (Schäffer:Fr.) Singer
Arran: On pine stump, Brodick Castle, Sept. 1980; under *Picea* sp., Brodick Castle, Sept. 1981 (K).

ENTOLOMATACEAE

- **Entoloma aprile* (Britzelm.) Sacc.
Gigha: Under trees, Achamore, May 1981 (K). Recorded from Skye. Commonly associated with rosaceous trees on the mainland.
- E. jubatum* (Fr.) P. Karsten
Arran: (Watling, unpubl.).
- E. nidorosum* (Fr.) Quélet
Gigha: Tarbert, Sept. 1980 (K).
- **E. rhodopolium* (Fr.) Kummer
Arran: In leaf litter under *Corylus avellana*, Kingscross Point, Sept. 1980 (K). Unrecorded in the Hebrides, but commonly reported from Scotland.
- **Leptonia griseorubella* (Lasch) P. Orton
Arran: In short turf, Lochranza, Sept. 1981 (K).

- Leptonia lazulina* (Fr.) Quélet
Arran: In grass at roadside, Lamlash and in grass under *Corylus avellana*, Kingscross Point, Sept. 1980 (K).
- L. serrulata* (Pers.:Fr.) Kummer
Arran: In short turf, Machrie Bay, Sept. 1981 (K).
- Nolanea cetrata* (Fr.:Fr.) Kummer
Arran: Under conifers, Brodick to Lamlash road, Sept. 1980 (K); under conifers east of Lamlash road near Brodick, Sept. 1981 (K).
- N. conferenda* (Britzelm.) Sacc.
Arran: Lochranza, Machrie moor circles and on Goat Fell c. 2700', Sept. 1981 (K); Brodick Castle and Glen Catacol, June 1982.
- **N. lucida* P. Orton
Gigha: In pasture, near Eilean Garbh, May 1981 (K). Recorded from Skye.
- N. sericea* (Bull.) P. Orton
Arran: In short turf, Lochranza and Machrie Bay, Sept. 1981 (K). Kintyre: In pasture, Port Righ, Sept. 1980 (K). The form distinguished as *Entoloma sericeum* (Bull.) Quélet var. *sericeum* f. *nolaniforme* (Kühner & Romagn.) Noordeloos is represented by the Machrie Bay collection.
- N. versatilis* (Fr.) C. Gillet
Arran: In grass near *Corylus avellana*, Kingscross Point, Sept. 1980 (K).

CORTINARIACEAE

- Cortinarius* cf. *anomalus* (Fr.:Fr.) Fr.
Arran: Under deciduous trees near conifer stump, Brodick Castle, Sept. 1980 (K).
- **C. betuletorum* (Moser) Moser
Arran: Under *Corylus avellana*, Kingscross Point, Sept. 1980 (K). Recorded from Skye.
- **C. bovinus* Fr.
Arran: Brodick Castle, Sept. 1981 (K).
- **C. cinnamomeolutes* P. Orton
Arran: Under conifers, east of Lamlash road near Brodick, Sept. 1981 (K). Recorded from Rhum.
- C. hemitrichus* (Pers.:Fr.) Fr.
Arran: In moss, Merkland Point, Sept. 1980 (K).
- **C. iliopodius* Fr.
Arran: (Paterson 1876). Needs confirmation.
- C. lepidopus* Cooke
Arran: Foot of Glen Rosa track near Brodick, Sept. 1981 (K).
- C. pseudosalor* J. E. Lange
Arran: Under deciduous trees near stream, Clauchan Glen, Sept. 1980 (K); Brodick Castle, Sept. 1981.
- C. rigidus* (Scop.:Fr.) Fr.
Arran: Brodick Castle, Sept. 1981 (K).
- C. tabularis* (Bull.:Fr.) Fr.
Arran: Brodick Castle and under conifers, east of Lamlash road near Brodick, Sept. 1981 (K).
- C. varius* (Schaeffer:Fr.) Fr.
Arran: (Stewart 1901).
- Crepidotus mollis* (Schaeffer:Fr.) Kummer var. *calolepis* (Fr.) Pilát
Kintyre: On *Fraxinus* sp., Balnabraid Glen, Sept. 1980 (K).
- **Flammula floccifera* Berk.
Arran: (Paterson 1876). Doubtful.
- Galerina clavata* (Velen.) Kühner
Kintyre: In grass at roadside, west of Achinloan Head, Sept. 1980 (K).
- G. hypnorum* (Schränk:Fr.) Kühner
Arran: On mossy bank, Merkland Point, Sept. 1980; Brodick Castle, Sept. 1981 (K). Gigha: Hill east of Tarbert, May 1981.
- G. mycenopsis* (Fr.) Kühner
Arran: In moss in conifer wood, east of Lamlash road near Brodick, Sept. 1981 (K).
- G. paludosa* (Fr.) Kühner
Arran: In *Sphagnum* sp., June 1982. Gigha: Amongst *Sphagnum* sp., hill east of Tarbert, May 1981 (K).
- G. sphagnorum* (Pers.:Fr.) Kühner
Arran: Lower Glen Catacol near Lochranza, June 1981 and June 1982 (K).
- G. vittiformis* (Fr.) Moser
Kintyre: In turf, Port Righ, Sept. 1980 (K).
- **Gymnopilus bellulus* (Peck) Kühner & Romagn.
Arran: On wood, Brodick Castle, Sept. 1981 (K). Known elsewhere in Britain only from a single locality in Wiltshire.
- G. junonius* (Fr.) P. Orton
Arran: (Williams, pers. comm.).

- Hebeloma crustuliniforme* (Bull.) Quélet
Arran: In grass and leaf litter, Merkland Point and Brodick Castle, Sept. 1980; North Glen Sannox, Sept. 1981 (K).
- Inocybe* cf. *abjecta* (P. Karsten) Sacc.
Arran: In mixed woodland, Brodick Castle, Sept. 1980 (K).
- I. asterospora* Quélet
Arran: Under *Corylus avellana*, Kingscross Point, Sept. 1980.
- **I. brevispora* Huijsman
Arran: Under conifers, east of Lamlash road near Brodick, Sept. 1981 (K).
- I. geophylla* (Sow.:Fr.) Kummer
Arran: Under conifers, Brodick Castle, Sept. 1981 (K).
- I. hystrix* (Fr.) P. Karsten
Arran: On mossy bank, Merkland Point and under *Fagus sylvatica*, Clauchan Glen, Sept. 1980 (K).
- I. lanuginosa* (Bull.:Fr.) Kummer
Arran: Near conifer stump, Brodick Castle, Sept. 1980 (K).
- I. nappes* J. E. Lange
Arran: Under *Corylus avellana*, Kingscross Point, Sept. 1980 (K).
- I. praetervisiva* Quélet
Arran: In mixed woodland, Brodick Castle, Sept. 1980 (K).
- Naucoria sobrius* Fr.
Arran: (Paterson 1876). Doubtful.
- N. striatula* P. Orton
Arran: On peaty soil, Merkland Point, Sept. 1980 (K).
- N. subconspersa* Kühner ex P. Orton
Kintyre: In *Alnus* sp. swamp, Glen Breackerie near Dalsmirran, Sept. 1980 (K).
- **Pholiota ochrochlora* (Fr.) P. Orton
Arran: In grass at roadside, Lamlash road near Brodick, Sept. 1980 (K). Widespread in England though less often reported from Scotland.
- P. squarrosa* (Müller:Fr.) Kummer
Kintyre: At base of living *Fraxinus* sp., Balnabraid Glen, Sept. 1980 (K).
- **Tubaria conspersa* (Pers.:Fr.) Fayod
Arran: In leaf litter under *Fagus sylvatica*, Clauchan Glen, Sept. 1980 (K). Recorded from Lewis, Rhum and Skye. Widespread in Great Britain, and presumably overlooked in Mull.
- **T. furfuracea* (Pers.:Fr.) C. Gillet
Arran: In deciduous wood with *Fagus sylvatica*, Merkland Point, Brodick to Lamlash road and Clauchan Glen, Sept. 1980 (K). Recorded from Eigg, Rhum and Skye. Widespread throughout Great Britain, and presumably overlooked in Mull.

BOLBITIACEAE

- Agrocybe arvalis* (Fr.) Singer
Arran: In deciduous woodland near stream, Clauchan Glen, Sept. 1980 (K).
- A. cylindracea* (DC.) Maire
Kintyre: On log, Tayinloan, May 1981 (K). Rarely recorded from Scotland, and perhaps at its northern limit in Kintyre. See Watling (1982).
- Bolbitius vitellinus* (Pers.:Fr.) Fr.
Arran: (Watling unpubl.). Kintyre: Southend, Sept. 1980 (K).
- Conocybe siennophylla* (Berk. & Broome) Singer
Gigha: Hill east of Tarbert, May 1981 (K). Probably widespread, but only recently adequately defined.
- C. semiglobata* (Kühner) Kühner & Romagn.
Gigha: In turf, Ardlamey, May 1981 (K). Recorded from Mingulay and Rhum. See Watling (1982) for distribution.
- C. tenera* (Schäffer:Fr.) Kummer
Arran: In grass near sea, Kingscross Point, Sept. 1980 (K).

STROPHARIACEAE

- **Deconica montana* (Pers.:Fr.) P. Orton
Arran: In pasture, Glen Rosa, June 1982 (K). Recorded from Colonsay, Rhum and St Kilda. A common moorland species, surely overlooked on Mull.
- Hypholoma capnoides* (Fr.:Fr.) Kummer
Arran: (Docker, pers. comm.).
- H. fasciculare* (Huds.:Fr.) Kummer
Arran: On stump, Brodick Castle and Clauchan Glen, Sept. 1980; on conifer logs, Giant's Graves near Whiting Bay, Sept. 1981 (K). Kintyre: On fence posts, opposite Davaar Island, Sept. 1980 (K).
- H. marginatum* (Pers.:Fr.) Schröter
Arran: Under conifers, east of Lamlash road near Brodick, Sept. 1981 (K).

- Hypholoma polytrichi* (Fr.:Fr.) Ricken
Arran: In *Polytrichum* sp. and *Sphagnum* sp., Lamlash road and Glen Cloy track, Sept. 1981 (K).
- **H. sublateritium* (Fr.) Quélet
Kintyre: Near stump, one mile south of Stewarton, Sept. 1980 (K). Recorded from Colonsay. Widespread throughout the Scottish mainland.
- Psilocybe semilanceata* (Fr.) Kummer
Arran: In grass near sea, Kingscross Point, Sept. 1980.
- Stropharia semiglobata* (Batsch:Fr.) Quélet
Arran: On dung in grass, Brodick to Lamlash road, Lamlash and Ballarie, Sept. 1980 (K); on dung, widespread on moors, Sept. 1981 (K); Drumadoon near Blackwaterfoot, June 1982 (K). Gigha: Tarbert, Sept. 1980 (K). Kintyre: On dung, Glen Lussa and Port Rìgh, Sept. 1980 (K).

COPRINACEAE

- Coprinus atramentarius* (Bull.:Fr.) Fr.
Arran: In grass at roadside, Lamlash road near Brodick, Sept. 1980.
- C. comatus* (Müller:Fr.) Gray
Arran: In grass at roadside, Lamlash road near Brodick, Sept. 1981 (K). Recorded on Islay and Skye. Frequent throughout the British Isles.
- C. micaceus* (Bull.:Fr.) Fr.
Arran: On rotten stump, Clauchan Glen, Sept. 1980; Brodick Castle, Sept. 1981 (K).
- C. narcoticus* (Batsch:Fr.) Fr.
Arran: (Watling, unpubl.).
- C. plicatilis* (Curtis:Fr.) Fr.
Arran: Watling (unpubl.). Gigha: Leim, May 1981 (K). Kintyre: In turf, Campbeltown, Sept. 1980 (K).
- **C. spraguei* Berk. & M. A. Curtis
Arran: (Paterson 1876). Doubtful. Originally described from New England; possibly an introduction, according to Orton & Watling (1982).
- **Lacrymaria velutina* (Pers.:Fr.) Konrad & Maubl.
Arran: In grass at roadside, Lamlash road near Brodick, Sept. 1980 (K). Recorded from Skye. Widespread throughout Great Britain.
- Panaeolina foenicisecii* (Pers.:Fr.) Maire
Arran: In grass, Lochranza, Sept. 1980 (K).
- Panaeolus acuminatus* (Schäffer) Quélet
Kintyre: In pasture, Port Rìgh, Sept. 1980 (K).
- P. ater* (J. E. Lange) Kühner & Romagn.
Arran: Brodick Castle, June 1981 and June 1982 (K).
- P. campanulatus* (Bull.:Fr.) Quélet
Gigha: On dung, North Druimachro east of Achamore, May 1981 (K).
- **P. fimicola*
Arran: (Watling, unpubl.). Recorded from Barra, Colonsay, Harris, Lewis, Rhum, S. Uist, St Kilda and Skye. Distributed throughout Great Britain and presumably overlooked on Mull.
- P. rickenii* Hora
Arran: In grass, Brodick Castle and Kingscross Point, Sept. 1980 (K).
- P. semiovatus* (Sow.:Fr.) Lundell
Arran: (Watling, unpubl.). Kintyre: On dung, Glen Lussa, Sept. 1980 (K).
- Psathyrella candolleana* (Fr.) Maire
Arran: On stump, Clauchan Glen, Sept. 1980.
- **P. clivensis* (Berk. & Broome) P. Orton
Arran: (Paterson 1876 as *Psilocybe clivensis*).
- **P. gossypina* (Bull.:Fr.) Pearson & Dennis
Arran: (Paterson 1876 as *Psathyra gossypina*). Recorded from St Kilda.
- P. gracilis* (Fr.) Quélet
Arran: In grass at roadside, Lamlash road near Brodick, Sept. 1980 (K).
- P. spadiceogrisea* (Fr.) Maire
Arran: Under *Fagus sylvatica* in leaf litter, Clauchan Glen, Sept. 1980 (K).

AGARICACEAE

- Agaricus campestris* L.:Fr.
Arran: In short turf, Lochranza and Machrie Bay, Sept. 1981 (K).
- A. fissuratus* (Möller) Möller
Arran: In short turf on path to castle, Lochranza, Sept. 1981 (K).
- A. haemorrhoidarius* Schulzer
Arran: Blackwaterfoot (Stewart, 1901); in hedge, Lochranza, Sept. 1981 (K).

LEPIOTACEAE

- **Lepiota procera* (Scop.:Fr.) Gray
Arran: (Docker, pers. comm.). Recorded from Colonsay. A widespread species, but usually on well-drained soils.

AMANITACEAE

- Amanita fulva* Schaeffer
Arran: In leaf litter, Clauchan Glen, Sept. 1980; Brodick Castle, Sept. 1981 (K).
- A. muscaria* (L.:Fr.) Hook.
Arran: Under conifers, Giant's Graves near Whiting Bay and under *Betula* sp., Glen Chalmadale and Glen Sannox, Sept. 1981 (K).
- A. rubescens* (Pers.:Fr.) Gray
Arran: In grass and leaf litter, Brodick Castle, Clauchan Glen and Pirnmill, Sept. 1980.
- **A. submembranacea* (Bonorden) Grögor
Arran: Under conifers, Glen Cloy track, Sept. 1981 (K). Recorded from Skye. A recently recognised segregate, probably recorded in the past as *A. vaginata*.
- A. vaginata* (Bull.:Fr.) Vill.
Kintyre: Saddell Castle woods, Sept. 1980 (K).

PLUTEACEAE

- Pluteus cervinus* (Schaeffer:Fr.) Kummer
Arran: On stump, Kingscross Point, Sept. 1980 (K). Kintyre: On stump of *Acer pseudoplatanus*, head of Conic Glen, Sept. 1980 (K).

RUSSULACEAE

- Lactarius blennius* (Fr.:Fr.) Fr.
Arran: Under *Fagus sylvatica*, Brodick Castle, Sept. 1981 (K). Kintyre: Under *F. sylvatica*, Saddell Castle woods, Sept. 1980 (K).
- L. circellatus* Fr.
Arran: In pasture near deciduous trees, Clauchan Glen, Sept. 1980 (K).
- L. deliciosus* (L.:Fr.) Gray
Arran: (Docker, pers. comm.).
- L. glycosmus* (Fr.:Fr.) Fr.
Arran: In leaf litter, Kingscross Point, Sept. 1980; under *Betula* sp., Glen Cloy track, Sept. 1981 (K). Gigha: Under *Betula* sp., Tarbert, Sept. 1980 (K).
- L. quietus* (Fr.) Fr.
Arran: In leaf litter, Merkland Point and Pirnmill, Sept. 1980; under *Quercus* sp., Brodick Castle, Sept. 1981.
- L. rufus* (Scop.:Fr.) Fr.
Arran: Under conifers, east of Lamdash road near Brodick, Sept. 1981 (K).
- L. subdulcis* (Pers.:Fr.) Gray
Arran: In leaf litter, Kingscross Point, Clauchan Glen and Pirnmill, Sept. 1980. Kintyre: Under *Fagus sylvatica*, Saddell Castle woods, Sept. 1980 (K).
- L. tabidus* Fr.
Arran: In leaf litter, Merkland Point and Kingscross Point, Sept. 1980; under *Betula* sp., Glen Cloy track, Sept. 1981 (K).
- L. turpis* (Weinm.) Fr.
Arran: Under *Corylus avellana*, Kingscross Point, Sept. 1980; under *Betula* sp., Goat Fell track, Sept. 1981 (K).
- L. vellereus* (Fr.) Fr.
Arran: Under *Quercus* sp., Pirnmill, Sept. 1980 (K). Kintyre: Under *Fagus sylvatica*, Saddell Castle woods, Sept. 1980 (K).
- L. vietus* (Fr.) Fr.
Arran: (Williams, pers. comm.).
- Russula aeruginea* Lindblad:Fr.
Arran: Under *Betula* sp., Merkland Point, Sept. 1980.
- R. atropurpurea* (Krombh.) Britzelm.
Arran: Under *Fagus sylvatica*, Brodick Castle, Sept. 1981.
- R. betularum* Hora
Arran: Under *Betula* sp., Brodick Castle and Pirnmill, Sept. 1980.
- R. cyanoxantha* (Schaeffer) Fr.
Arran: In leaf litter, Clauchan Glen and Pirnmill, Sept. 1980; under *Fagus sylvatica*, Brodick Castle, Sept. 1981 (K).
- **R. cyanoxantha* (Schaeffer) Fr. var. *pelletterai* Singer
Arran: In leaf litter, Clauchan Glen and Pirnmill, Sept. 1980. Recorded from Colonsay.
- R. delica* Fr.
Arran: Under *Corylus avellana*, Kingscross Point, Sept. 1980 (K); under *Fagus sylvatica*, Lamdash road one mile south of Brodick, Sept. 1981 (K).

- Russula fellea* (Fr.) Fr.
Arran: In grass, Brodick Castle, Sept. 1980. Kintyre: Under *Fagus sylvatica*, Saddell Castle woods, Sept. 1980 (K).
- R. fragilis* (Pers.:Fr.) Fr.
Arran: Under *Quercus* sp., Brodick Castle, Sept. 1981.
- R. heterophylla* (Fr.) Fr.
Arran: (Watling, unpubl.).
- R. mairei* Singer
Arran: In grass under *Fagus sylvatica*, Brodick Castle, Sept. 1980; under *Quercus* sp. and *F. sylvatica*, Brodick Castle, Sept. 1981 (K). Kintyre: Under *F. sylvatica*, Saddell Castle woods, Sept. 1980 (K).
- R. nigricans* (Bull.) Fr.
Arran: In leaf litter, Merkland Point, Brodick Castle, Kingscross Point, Clauchan Glen and Pirnmill, Sept. 1980; under *Quercus* sp. and *Fagus sylvatica*, Brodick Castle, Sept. 1981.
- R. nitida* (Pers.:Fr.) Fr.
Arran: In moss under *Corylus avellana*, Merkland Point, Sept. 1980.
- R. ochroleuca* (Pers.) Fr.
Arran: In grass and leaf litter, Brodick Castle, Clauchan Glen and Pirnmill, Sept. 1980; under *Fagus sylvatica*, Brodick Castle, Sept. 1981.
- R. parazurea* Schaeffer
Arran: Under *Tilia* sp., shore road to Brodick Castle, Sept. 1981 (K).
- R. puellaris* Fr.
Arran: In leaf litter, Brodick Castle, Sept. 1980.
- R. sororia* (Fr.) Romell
Arran: In leaf litter and moss, Brodick Castle, Sept. 1980.

APHYLLOPHORALES

CLAVARIACEAE

- **Clavaria argillacea* Fr.
Arran: On bare soil, Glen Cloy track, Sept. 1981 (K). Plentiful on moorland soils in the Central Highlands.
- Clavulinopsis corniculata* (Fr.) Corner
Kintyre: In moorland turf, Conie Glen, Sept. 1980 (K).
- **C. corniculata* (Fr.) Corner var. *pratensis* (Fr.) Cotton & Wakefield
Arran: In grass at roadside, Lamblash to Brodick road, Sept. 1981 (K).
- C. fusiformis* Fr.
Gigha: In grass, east bay, Tarbert, Sept. 1980 (K).
- C. helvola* (Fr.) Corner
Arran: In grass near shore, Brodick Castle and Kingscross Point, Sept. 1980 (K). Kintyre: In turf near sea, Port Righ, Sept. 1980 (K).
- Pistillaria micans* Fr.
Kintyre: On *Angelica* sp., Glecknahavill near Dalsmirran, Sept. 1980 (K).
- P. puberula* Berk.
Arran: (Paterson 1876).
- **Ramaria flaccida* (Fr.) Ricken
Arran: (Paterson 1976).
- **R. ochraceovirens* (Jungh.) Donk
Arran: (Stewart 1901 as *Clavaria abietina* Pers.). To be expected where mature plantations of conifers occur.
- Ramariopsis kunzei* (Fr.) Corner
Gigha: At edge of *Salix* sp. scrub, east of Tarbert, Sept. 1980 (K).
- **R. cf. kunzei* (Fr.) Corner var. *subasperata* (Bourd. & Galz.) Corner
Arran: In moss and leaf litter, Merkland Point, Sept. 1980 (K).
- **Typhula quisquiliaris* (Fr.) Corner
Arran: (Paterson 1876). Recorded from Raasay and Skye. Ubiquitous with *Pteridium aquilinum*.
- **T. sclerotoides* (Pers.) Fr.
Arran: On *Hedera helix* leaves, Kingscross Point, Sept. 1980 (K).

CLAVULINACEAE

- Clavulina cinerea* (Fr.) Schröter
Arran: In leaf litter and on soil in mixed woodlands, Clauchan Glen and Pirnmill, Sept. 1980 (K); under *Corylus avellana*, Kildonan, Sept. 1981 (K).
- C. cristata* (Fr.) Schröter
Arran: On soil, Kingscross Point and Pirnmill, Sept. 1980; under *Corylus avellana*, Kildonan, Sept. 1981 (K).

CORTICIACEAE

**Aleurodiscus aurantius* (Pers.:Fr.) Schröter

Gigha: On *Rubus fruticosus* agg. stems, Achamore, May 1981 (K). Apparently not uncommon in the west of Britain, from Guernsey, Devon and the Isle of Man to Morvern, on dead canes of *Rosa* and *Rubus* spp. Copious production of large basidiospores often gives a powdery look which may lead to colonies being ignored as moulds.

Athelia sp.

Gigha: On *Empetrum* sp., Sept. 1980 (K).

**Basidioradulum radula* (Fr.:Fr.) Nobles

Kintyre: On *Sorbus aucuparia*, Tayinloan, May 1981 (K). Recorded from Rhum. Widespread throughout Great Britain.

**Cellypha griseopallida* (Weinm.) W. B. Cooke

Arran: On plant debris, Merkland Point, Sept. 1980.

Cylindrobasidium evolvens (Fr.: Fr.) Jülich

Kintyre: On *Ulmus* sp., Tayinloan, May, 1981 (K).

Gloeocystidiellum porosum (Berk. & M. A. Curtis) Donk

Gigha: On *Nothofagus* sp., Achamore, May 1981 (K). Kintyre: On *Corylus avellana* and *Populus* sp., Tayinloan, May 1981 (K).

Hyphoderma tenue (Pat.) Donk

Kintyre: On decorticated (?) conifer wood, Saddell, Sept. 1980 (K).

Hyphodontia nespori (Bres.) J. Erikss. & Hjortst.

Arran: On *Pinus* sp., Lamlash, Sept. 1980 (K). Recorded from Mull as *H. papillosa* (Fr.) J. Erikss.

H. sambuci (Pers.) J. Erikss.

Kintyre: On *Sambucus nigra*, Achinloan, Sept. 1980 (K).

**Laeticorticium roseum* (Pers.) Donk

Arran: On *Oenanthe crocata*, Brodick, June 1982 (K). There is no other Scottish material preserved at Kew.

Peniophora incarnata (Pers.:Fr.) Cooke

Arran: On *Ulex* sp., Brodick Castle, June 1982. Kintyre: On *Ulex* sp., Achinloan Road, Sept. 1980 (K).

P. lycii (Pers.) Höhnelt & Litsch.

Gigha: On *Olearia albida*, Achamore, May 1981 (K).

**P. rufomarginata* (Pers.) Bourd. & Galzin

Gigha: On *Salix aurita*, hill east of Tarbert, May 1981 (K).

**P. violaceolivida* (Sommerf.) Masee

Gigha: On *Fuchsia magellanica*, Achamore, Sept. 1980 (K). Recorded from Rhum.

Phlebia hydnoides (Cooke & Masee) Christiansen

Gigha: On *Tilia* sp., Achamore, May 1981 (K).

Sistotremastrum niveocremeum (Höhnelt & Litsch.) J. Erikss.

Arran: On *Corylus avellana*, Kingscross Point, Sept. 1980 (K).

GANODERMATACEAE

Ganoderma adpersum (Schulz.) Donk

Arran: Brodick, Sept. 1981 and June 1982 (K).

HYDNACEAE

Hydnum repandum L.:Fr.

Arran: (Docker, pers. comm.).

H. repandum L.:Fr. var. *rufescens* Pers.

Kintyre: Under *Fagus sylvatica*, Saddell Castle woods, Sept. 1980 (K).

HYMENOCHAETACEAE

Hymenochaeta corrugata (Fr.:Fr.) Lév.

Kintyre: On *Corylus avellana*, Tayinloan, May 1981 (K).

H. rubiginosa (Schrad.) Lév.

Arran: On wood, Pirnmill, Sept. 1980.

Inonotus radiatus (Sow.:Fr.) P. Karsten

Arran: On *Alnus* sp., Merkland Point, Sept. 1980 (K). Kintyre: On *Alnus* sp., Glen Breackerie near Dalsmirran, Sept. 1980 (K).

Phaeolus schweinitzii (Fr.) Pat.

Arran: On conifer, Brodick Castle, Sept. 1981 (K).

**Phellinus* cf. *ferreus* (Pers.) Bourd. & Galzin

Gigha: On *Salix* sp., Tarbert, Sept. 1980 and Sept. 1981 (K). Recorded from Colonsay. Widespread, but liable to confusion with *P. ferruginosus* (Fr.) Pat.

POLYPORACEAE

Antrodia albida (Fr.) Donk

Arran: (Paterson 1876 as *Polyporus stephensii* Fr.)

- Coriolum versicolor* (L.:Fr.) Quélet
Arran: On wood, Merkland Point, Lamdash road near Brodick and Clauchan Glen, Sept. 1980.
- Datronia mollis* (Sommerf.:Fr.) Donk
Kintyre: On wood, Carradale, Sept. 1980 (K).
- Gloeophyllum sepiarium* (Wulf.:Fr.) P. Karsten
Arran: On conifer logs, Brodick, June 1982 (K).
- Heterobasidion annosum* (Fr.) Bref.
Arran: On (?) *Fagus sylvatica*, Clauchan Glen, Sept. 1980 (K).
- **Laetiporus sulphureus* (Bull.:Fr.) Murrill
Arran: (Docker, pers. comm.). Less common in Scotland than southern England. Host not recorded.
- Piptoporus betulinus* (Bull.:Fr.) P. Karsten
Arran: On *Betula* sp., Goat Fell track, Brodick Castle, Lochranza and Chalmadale, Sept. 1981. Kintyre: On *Betula* sp., Dalsmirran and Saddell, Sept. 1980 (K).
- Polyporus squamosus* Huds.:Fr.
Arran: On (?) *Juniperus* sp., Glen Rosa, Aug. 1958 (K). Kintyre: On *Fraxinus excelsior*, Crossibeg, Sept. 1980 (K).
- P. varius* Fr.
Arran: On wood, Merkland Point and Brodick Castle, Sept. 1980 (K). Gigha: On *Salix* sp., Sept. 1980 (K).
- **Rigidoporus undatus* (Pers.) Donk
Arran: (Paterson 1876 as *Polyporus cinctus* Berk.).
- Schizopora paradoxa* (Schrader:Fr.) Donk
Arran: On wood, Merkland Point, on *Fagus sylvatica* cortex, Brodick Castle, Sept. 1980 (K).
- Tyromyces semipileatus* (Peck) Murrill
Arran: On *Corylus avellana*, Kingscross Point, Sept. 1980 (K). Kintyre: On stump, Kilkerran, Sept. 1980 (K).
- **T. stipticus* (Fr.) Kotl. & Pouzar
Arran: (Williams, pers. comm.).

SPARASSIDACEAE

- Sparassis crispa* (Wulf.) Fr.
Arran: (Docker, pers. comm.)

STEREACEAE

- Stereum hirsutum* (Willd.:Fr.) Gray
Arran: On wood, Lamdash road near Brodick and Kingscross Point, Sept. 1980.
- S. rugosum* (Pers.:Fr.) Fr.
Arran: On wood, Merkland Point, Brodick Castle, Kingscross Point and Pirnmill, Sept. 1980; Brodick Castle, Sept. 1981; on *Betula* sp., Holy Isle, June 1982 (K).

THELEPHORACEAE

- Thelephora palmata* Scop.:Fr.
Arran: In grass near *Pinus* sp., Brodick Castle and in leaf litter in mixed woodland, Clauchan Glen, Sept. 1980 (K). Reported from Mull by Stevenson (1882) but omitted from the Mull Flora.

TREMELLALES

- Sebacina calcea* (Pers.) Bres.
Gigha: On *Ulmus* sp., Achamore, May 1981 (K).
- Hirneola auricula-judae* (Bull.) Berk.
Arran: On *Sambucus nigra*, Kingscross Point, Sept. 1980 (K). Kintyre: On *Sambucus nigra*, Achinloan, Sept. 1980 (K).
- Exidia glandulosa* (Bull.) Fr.
Arran: On dead *Quercus* sp. branch near stream, Pirnmill, Sept. 1980 (K).
- E. thuretiana* Lév.
Gigha: On (?) *Ulmus* sp., Achamore, Sept. 1980 (K); on *Tilia* sp., Achamore, May 1981 (K). Recorded from Mull as *Exidia albida* (Huds.) Bref.
- Myxarium nucleatum* Wallr.
Arran: On rotten wood, Kingscross Point, Sept. 1980 (K); on *Fraxinus* sp., Dippin, Sept. 1981 (K). Recorded from Mull as *Myxarium hyalinum* (Pers.) Donk.
- Tremella exigua* Desm.
Arran: On dead *Ulex europaeus*, Lamdash road near Brodick, Sept. 1980 (K).
- T. mesenterica* Retz.
Arran: On dead *Ulex europaeus*, Ballarie, Sept. 1980 (K); On *Ulex* sp., Kildonan, Sept. 1981 (K); On *Ulex* sp., Brodick Castle, June 1982. Kintyre: On *Ulex* sp., Saddell, Sept. 1980 (K).
- [*T.* sp.
See *Hormomyces* state of]

DACRYMYCETALES

Calocera viscosa (Pers.) Fr.

Arran: On conifer, Brodick Castle, Sept. 1981 (K). Kintyre: On decorticated conifer, Saddell, Sept. 1980 (K).

Dacrymyces stillatus Nees.:Fr.

Arran: On rotten wood, Brodick Castle, Kingscross Point and Clauchan Glen, Sept. 1980; on decorticated wood, Brodick and on *Sambucus nigra*, Dippin, Sept. 1981. Kintyre: On *S. nigra*, Achinloan, Sept. 1980 (K).

GASTEROMYCETES

LYCOPERDALES

Bovista nigrescens Pers.

Arran: In grass near sea, Machrie Bay, Lamlash and Sannox, Sept. 1981 (K). Gigha: Rubha Cairn Bhain, Sept. 1980 and May 1981 (K). Kintyre: Davaar Island, Sept. 1980 (K).

B. plumbea Pers.:Pers.

Arran: In grass, Kingscross Point and Lochranza, Sept. 1980 (K). Gigha: May 1981 (K).

Calvatia excipuliforme (Pers.) Perdeck

Arran: Machrie moor circles, Sept. 1981 and June 1982 (K).

Lycoperdon foetidum Bonorden

Arran: In grass near sea, Kingscross Point, Sept. 1980 (K). Kintyre: Achinloan and Glen Lussa, Sept. 1980 (K).

L. pyriforme Pers.

Arran: Brodick Castle, Sept. 1981 (K). Kintyre: Carradale, Sept. 1980 (K).

L. spadicum Pers.

Kintyre: Machrihanish dunes and Tanay near Westport, Sept. 1980 (K).

Vascellum depressum (Bonorden) Smarda

Arran: In grass, Lochranza and Lamlash, Sept. 1980 (K) and Sept. 1981 (K); Brodick to Lamlash road, Sept. 1981 and June 1982 (K). Kintyre: Machrihanish golf course and Davaar Island, Sept. 1980 (K).

NIDULARIALES

**Cyathus olla* Batsch:Pers.

Kintyre: On *Ammophila* sp., Machrihanish dunes, Sept. 1980 (K). Suitable habitats perhaps not well developed on Mull. The species occurs commonly on herbaceous and woody debris in fields and gardens, but is recorded on dune grasses in Lancashire, Norfolk, Somerset and Suffolk. Scottish records are few and mostly from the east, but it has been recorded (as *C. vernicosus*) from West Kilbride, Ayrshire and Carmyle, Lancashire.

Sphaerobolus stellatus Tode:Pers.

Kintyre: On *Ammophila* sp., Machrihanish dunes, Sept. 1980 (K).

SCLERODERMATALES

Scleroderma citrinum Pers.

Arran: In moss and leaf litter, Pirnmill, Sept. 1980; Brodick Castle, Sept. 1981 and June 1982 (K).

S. verrucosum Bull.:Pers.

Arran: In grass at roadside, Brodick Castle, Sept. 1980 (K).

PHALLALES

Phallus impudicus Pers.

Arran: Brodick Castle, Sept. 1981 (K).

UREDINALES

**Chrysoomyxa rhododendri* de Bary

Gigha: II on *Rhododendron* 'Lady Chamberlain', Achamore Gardens, May 1981 (K). Kintyre: I on *Picea abies*, Skipness, Sept. 1966, S. Batko (K). Recorded from Skye.

Coleosporium tussilaginis (Pers.) Lév.

Arran: (Wilson 1934 as *Coleosporium petasites* Cooke); On *Euphrasia officinalis*, *Bartsia alpina* and *Rhinanthus minor*, Kilmory and Kilbride (Boyd, 1913 as *Coleosporium euphrasiae* (Schumacher) Winter); II on *Petasites* sp. and *Tussilago* sp., Brodick, Sept. 1981 (K). Kintyre: On *Petasites vulgaris*, Stewarton, on *Sonchus oleraceus*, Machrihanish dunes, on *S. oleracea*, Kilkerran, Sept. 1980 (K). Recorded from Mull on *Campanula*, *Petasites*, *Senecio* and *Tussilago*.

Melampsora capraearum DC.

Arran: On *Salix* spp., Kilmory and Kilbride (Boyd 1913 as *Melampsora farinosa* (Pers.) Schröter); on *Salix atrocinerea* leaves, Lamlash road near Brodick, Sept. 1980 (K); II and III on *Salix caprea*, Brodick, Sept. 1981 (K).

M. epitea Thüm.

Arran: II and III on *Salix phylicifolia*, Glen Cloy track, Sept. 1981 (K). Kintyre: II on *Salix cinerea* subsp. *oleifolia* and *Salix viminalis*, Kildonan Bay, Sept. 1980 (K).

**M. euphorbiae* Castagne

Kintyre: On *Euphorbia peplus*, Southend, Sept. 1980 (K). Ubiquitous, especially on *E. helioscopia* and *E. peplus*, and surely overlooked on Mull, although these species are now less common than formerly with the decline in cultivated ground.

M. hypericorum (DC.) Schröter

Arran: On *Hypericum androsaemum*, Kilbride (Boyd 1913); (Wilson 1934); II on *H. androsaemum*, Brodick Castle, Sept. 1981 (K). Kintyre: II on *H. androsaemum* and *H. pulchrum*, Kilkerran, Sept. 1980 (K).

M. larici-pentandrae Kleb.

Gigha: II on *Salix pentandra*, Sept. 1980 (K).

**M. larici-populina* Kleb.

Arran: On *Larix leptolepis* (Wilson 1934); II and III on cultivated *Populus* sp., shore road, Brodick, Sept. 1981 (K).

Melampsoridium betulinum (Pers.) Kleb.

Arran: On *Betula* sp., Kilbride (Boyd 1913); on *Betula* sp., Brodick, Sept. 1981 (K). Gigha: On *Betula* sp., Achamore, Sept. 1980 (K). Kintyre: On *Betula* sp., Peninver and Tarbert, Sept. 1980 (K).

Milesina blechni Sydow

Arran: On *Blechnum spicant*, Kilmory and Kilbride (Boyd 1913 as *Milesia polypodii* White); On *B. spicant*, Brodick, Sept. 1981 (K); On *B. spicant*, Holy Isle, June 1982 (K). Kintyre: II on *B. spicant*, Tarbert and roadside west of Achinloan Head, Sept. 1980 (K).

M. dioteliana (Sydow) Magn.

Arran: On *Polypodium vulgare* (Wilson 1934); II on *P. vulgare*, Brodick, Sept. 1981 (K); On *P. vulgare*, Brodick and Lagg, June 1982 (K). Kintyre: II on *P. vulgare*, Carradale and Torris Dale, Sept. 1980 (K).

**M. kriegeriana* (Magn.) Magn.

Gigha: II on *Dryopteris dilatata*, Achamore, Sept. 1980 (K). Recorded from Barra, Harris, Lewis and Rhum and presumably overlooked on Mull.

**M. scolopendrii* (Fuekel) Arth.

Arran: Apr. 1933 (Wilson, 1934). Gigha: II on *Phyllitis scolopendrium*, Achamore, May 1981 (K). Kintyre: II on *P. scolopendrium*, Kilkerran, Sept. 1980 (K). Recorded from Islay and Rhum. The host is present but infrequent on Mull.

Miyagia pseudosphaeria (Mont.) Jørstad

Arran: (Wilson 1934 as *Puccinia sonchi* Rob.); On *Sonchus oleraceus*, Brodick, Sept. 1981 (K).

Phragmidium bulbosum (Strauss) Schlecht.

Arran: (Wilson 1934 as *P. rubi* Winter); II and III on *Rubus fruticosus* agg., Whiting Bay, Sept. 1981 (K). Kintyre: II and III on *R. fruticosus* agg., Killean, Sept. 1980 (K).

P. mucronatum (Pers.) Schlecht.

Arran: II and III on *Rosa villosa* agg., Machrie, Sept. 1981 (K); I and II on *R. canina*, Brodick and Corriegills, June 1982 (K).

**P. rosae-pimpinellifoliae* Diet.

Arran: I on *Rosa pimpinellifolia*, Drumadoon near Blackwaterfoot, June 1982 (K). Recorded from Skye. The host occurs on Mull, and the rust is possibly overlooked there.

P. rubi-idaei (Pers.) P. Karsten

Arran: On *Rubus idaeus*, Kilmory and Kilbride (Boyd 1913).

P. violaceum (C. Schultz) Winter

Arran: On *Rubus fruticosus* agg., Kilmory and Kilbride (Boyd, 1913); Merkland Point, Sept. 1980 (K); II and III on *R. fruticosus* agg., Brodick, Sept. 1981 (K). Gigha: II and III on *R. fruticosus* agg., hill east of Tarbert, May 1981 (K). Kintyre: II and III on *R. fruticosus* agg., Tarbert, Campbeltown and Southend, Sept. 1980 (K).

Puccinia acetosae Koern.

Arran: II on *Rumex acetosa*, Kildonan, Sept. 1981 (K); on *R. acetosa*, Machrie, June 1982 (K). Gigha: II on *R. acetosa*, Sept. 1980 (K). Kintyre: (Wilson, 1934); II on *R. acetosa*, Tarbert and Achinloan, Sept. 1980 (K).

**P. albescens* Plowr.

Kintyre: I on *Adoxa moschatellina*, Tayinloan, May 1981 (K). The host is absent from Mull, and the rust may be approaching its northern limit in Kintyre. There is Scottish material at Kew from Dunbartonshire, Peebleshire and E. Lothian.

**P. allii* Rudel

Arran: (Wilson 1934 as *P. porri* (Sow.) Winter). Host plants (*Allium* spp.) are rare or absent on Mull.

P. annularis (Strauss) Röhl.

Arran: III on *Teucrium scorodonium*, Goat Fell track, Sept. 1981 (K). Gigha: III on *T. scorodonium*, Sept. 1980 (K). Kintyre: III on *T. scorodonium*, Peninver, Sept. 1980 (K).

- Puccinia arenariae* (Schumacher) Winter
Arran: III on *Silene dioica*, Brodick, Sept. 1981 (K). Kintyre: III on *S. dioica*, south shore of Campbeltown Loch and two miles north at Southend, Sept. 1980 (K). Recorded on *Sagina* sp. from Islay, Lewis and N. Uist.
- P. brachypodii*
Arran: On *Brachypodium* sp., Kilbride (Boyd 1913 as *P. baryi* (Berk. & Broome) Winter); (Wilson 1934 as *P. baryi*).
- P. calcitrapae* DC.
Arran: On *Centaurea nigra*, Kilmory (Boyd 1913 as *P. centaureae* Mart.); On *Cirsium palustre*, Brodick, Sept. 1981 (K); On *C. palustre*, Kingscross, June 1982 (K). Gigha: II and III on *C. palustre*, Rubha Cairn Bhain, Sept. 1980 (K); II and III on *C. nigra*, Sept. 1980 (K). Kintyre: II and III on *C. palustre*, Achinloan, Sept. 1980 (K); II and III on *C. nigra*, Tarbert and Campbeltown, Sept. 1980 (K).
- P. calthae* Link
Arran: On *Caltha palustris* (Wilson 1934). Gigha: I on *C. palustris*, Mill Loch, May 1981 (K).
- P. calthicola* Schröter
Arran: On *Caltha palustris* (Wilson 1934 as *Puccinia zopfii* Winter).
- P. caricina* DC.
Arran: On *Urtica* sp., Kilbride (Boyd 1913 as *Puccinia caricis* (Schumacher) Winter); I on *Urtica dioica*, Tormore near Machrie Bay and on *Ribes grossularia*, Brodick, June 1982 (K). Gigha: I on *R. grossularia*, Achamore and *U. dioica*, Tarbert, May 1981 (K). Recorded from Mull on *Carex nigra*.
- P. chaerophylli* Purton
Arran: On *Myrrhis odorata*, Dippin, Sept. 1981 (K). Kintyre: III on *Anthriscus silvestris*, one mile south of Stewarton; on *M. odorata*, Peninver, Sept. 1980 (K).
- P. chrysosplenii* Grev.
Arran: III on *Chrysosplenium oppositifolium*, Dippin, Sept. 1981 (K); Holy Isle, June 1982 (K). Kintyre: III on *C. oppositifolium*, Kilchenzie old church, Sept. 1980 (K).
- P. circaeae* Pers.
Arran: On *Circaea lutetiana*, Dippin, Kilbride (Boyd 1913).
- P. cnici* Mart.
Arran: (Wilson 1934 as *Puccinia cirsii-lanceolati* Schröter); III on *Cirsium vulgare*, Lochranza, Sept. 1981 (K). Kintyre: II and III on *C. vulgare*, Peninver, Sept. 1980 (K).
- P. cnici-oleracei* Pers.
Arran: On *Cnicus palustris* and *C. lanceolatus*, Whiting Bay, Aug. 1913 (Boyd 1916); (Wilson 1934 as *P. lemonnieriana* Maire); III on *Cirsium palustre*, Brodick, Sept. 1981 (K). Gigha: On *C. palustre*, Tarbert, Sept. 1980 (K). Kintyre: III on *Achillea millefolium*, Torris Dale, Sept. 1980 (K). Recorded from Mull on *Cirsium heterophyllum* and *Aster tripolium*.
- P. coronata* Corda
Arran: (Wilson 1934 as *Puccinia lolii* Niels.); On *Holcus lanatus*, Kingscross Point, Sept. 1980 (K); II on *Lolium perenne*, Corrie, Sept. 1981 (K). Gigha: II and III on *Arrhenatherum elatius*, Sept. 1980 (K). Kintyre: II and III on *A. elatius*, Campbeltown; II on *Festuca gigantea*, Low Smerby near Campbeltown, Sept. 1980 (K).
- **P. crepidicola* Sydow
Arran: On *Crepis virens* (Wilson 1934 as *Puccinia crepidis* Schröter). Recorded on *C. capillaris* from Colonsay and Islay.
- P. deschampsiae* Arthur
Arran: On *Deschampsia caespitosa*, Glen Cloy track, Sept. 1981 (K). Gigha: II on *D. caespitosa*, Achamore and Tarbert, Sept. 1980 (K) and May 1981 (K).
- P. festucae* Plowr.
Gigha: I on *Lonicera periclymenum*, May 1981 (K). *Uredo festucae* DC. (see Wilson & Henderson 1966) on *Festuca rubra* recorded from Mull.
- **P. gatii-verni* Ces.
Arran: III on *Galium saxatile*, Holy Isle, June 1980 (K). Gigha: III on *G. saxatile*, Rubha Cairn Bhain, Sept. 1980 (K). Kintyre: III on *G. saxatile*, Achinloan Road, Sept. 1980 (K). Recorded from Colonsay, Harris, Jura, Luing, Mingulay, Raasay and Skye. Common throughout the Highlands and Islands, and surely overlooked on Mull.
- P. hieracii* Mart.
Arran: On leaves of *Leontodon autumnale*, Machrie Bay, Aug. 1913 (Boyd 1916 as *P. leontodontis* Jacky); On *L. autumnale*, Brodick, Sept. 1981 (K). Kintyre: II on *L. autumnale*, Tarbert, Sept. 1980 (K); II and III on *Taraxacum* sp., Kilchenzie, Sept. 1980 (K).
- P. hieracii* Mart. var. *hypochoeridis* (Oudem.) Jørst.
Arran: On *Hypochoeris radiata* (Wilson 1934 as *Puccinia hypochoeridis* Oudem.). Gigha: II on *H. radiata*, Leim, May 1981 (K).
- P. lagenophorae* Cooke
Arran: I on *Senecio vulgaris*, Brodick, Sept. 1981 (K). Kintyre: I on *S. vulgaris*, Campbeltown, Sept. 1980 (K).
- P. lapsanae* Fuckel
Arran: II and III on *Lapsana communis*, Brodick, Sept. 1981 (K). Kintyre: III on *L. communis*, Carradale, Sept. 1980 (K).

- Puccinia luzulae* Lib.
Arran: On *Luzula sylvatica*, Kilmory and Kilbride (Boyd 1913 as *Puccinia oblongata* (Link) Winter).
- P. magnusiana* Körn
Gigha: III on *Phragmites australis*, between Leim and Ardramey Bay, May 1981 (K).
- **P. malvacearum* Mont.
Arran: On *Malva* sp. and *Althaea rosea*, Kilbride (Boyd 1913). Host rare or absent on Mull.
- P. menthae* Pers.
Arran: On *Mentha aquatica*, Kilmory and Kilbride (Boyd 1913); II and III on *M.* sp., Brodick, Sept. 1981 (K). Kintyre: II and III on *M.* sp., south shore of Campbeltown Loch, Sept. 1980 (K).
- P. obscura* Schröter
Arran: II on *Luzula sylvatica*, Brodick and Whiting Bay, Sept. 1981 (K); II on *L. sylvatica*, Drumadon near Blackwaterfoot, June 1982 (K). Gigha: II and III on *L. campestris*, Tarbert, Sept. 1980 (K). Kintyre: II on *L. sylvatica*, Kilkerran, Sept. 1980. Also (I) recorded from Mull on *Bellis perennis*.
- P. poae-nemorialis* Otth
Arran: On *Anthoxanthum odoratum* (Wilson 1934 as *Uredo anthoxanthina* Bubak); II on *A. odoratum*, Brodick Castle, June 1982 (K). Gigha: II on *Poa* sp., Achamore, May 1981 (K). Kintyre: II on *Poa annua*, Stewarton, Sept. 1980 (K).
- P. poarum* Niels.
Arran: I on leaves of *Tussilago farfara*, Lamash road near Brodick, Sept. 1980 (K); I on *T. farfara*, Kildonan, Sept. 1981 (K); I on *T. farfara*, Brodick, June 1982 (K). Gigha: I on *T. farfara*, Sept. 1980 (K). Kintyre: I on *T. farfara*, Campbeltown and Machrihanish, Sept. 1980 (K). Recorded from Mull on *Poa* sp. and *Tussilago* sp.
- P. polygoni-amphibii* Pers.
Arran: On *Polygonum amphibium*, Kilmory (Boyd 1913 as *Puccinia polygoni* Pers.). Kintyre: II and III on *P. amphibium*, Campbeltown and Peninver Bridge, Sept. 1980 (K).
- P. primulae* (DC.) Duby
Arran: On *Primula vulgaris*, Kilbride (Boyd 1913). Gigha: I, II and III on *P. vulgaris*, on roadside around Rubha Cairn Bhain, Sept. 1980 (K) and May 1981 (K).
- P. punctata* Link
Kintyre: II and III on *Galium verum*, Machrihanish dunes, Sept. 1980 (K).
- P. punctiformis* (Strauss) Röhl.
Arran: I on *Cirsium arvense*, Brodick, June 1982 (K). Gigha: I, II and III on *C. arvense*, Sept. 1980 (K) and May 1981 (K). Kintyre: II and III on *C. arvense*, Glen Breackerie, Sept. 1980 (K).
- P. pygmaea* J. Erikss.
Arran: (Wilson 1934 as *Uredo ammophilina* Kleb.); II on *Ammophila arenaria*, golf course, Brodick, Sept. 1981 (K). Kintyre: II on *A. arenaria*, Carskey Bay and Machrihanish dunes, Sept. 1980 (K) and Tayinloan, May 1981 (K).
- P. recondita* Rob. & Desm.
Arran: On *Holcus* sp. and other Gramineae, Kilmory and Kilbride (Boyd 1913 as *Puccinia rubigo-vera* (DC.) Winter); (Wilson 1934 as *Puccinia holcina* Erikss.); II on *Agropyron repens*, Kildonan, Sept. 1981 (K). Kintyre: II and III on *A. junceiformis*, II and III on *Agrostis* sp., Machrihanish; II on *Holcus* sp., Tarbert, Sept. 1980 (K).
- P. saniculae* Grev.
Arran: On *Sanicula europaea*, Kilbride (Boyd 1913). Kintyre: II and III on *S. europaea*, Kilkerran, Sept. 1980 (K).
- P. sessilis* Schröter
Arran: III on *Phalaris arundinacea*, Brodick, Sept. 1981 (K). Kintyre: III on *P. arundinacea*, Kildonan Bay, Sept. 1980 (K). Recorded from Mull on *Arum* (I) and *Phalaris*.
- P. tumida* Grev.
Arran: On *Conopodium majus*, Kilmory (Boyd 1913 as *Puccinia bunii* (DC.) Winter). Almost certainly a misidentification following Plowright (1889, see Wilson & Henderson 1966).
- **P. umbilici* Guep. ex Duby
Arran: On *Umbilicus rupestris*, Invercloy, Kilbride (Boyd 1913); on *Cotyledon umbilicus* (Wilson 1934). Absent from Mull. The host occurs only on Iona, at the northern edge of its range.
- P. variabilis* Grev.
Kintyre: I on *Taraxacum* sp., Machrihanish dunes, Sept. 1980 (K).
- P. violae* (Schumacher) Winter
Arran: On *Viola riviniana*, Kilmory and Kilbride (Boyd 1913); II and III on *V. riviniana*, Kildonan, Sept. 1981 (K). Gigha: I on *V. riviniana*, north of island, May 1981 (K). Kintyre: II and III on *V. riviniana*, Achinloan, Sept. 1980 (K).
- Pucciniastrum circaeae* (Schumacher) Schröter
Arran: On *Circaea lutetiana*, Kilbride (Boyd 1913); II on *C. lutetiana*, Kildonan, Sept. 1981 (K).
- P. epilobii* Otth
Arran: II on *Chamaenerion angustifolium*, Brodick, Sept. 1981 (K).
- P. vaccinii* (Winter) Jörsst.
Arran: On *Vaccinium myrtillus*, Kilbride (Boyd 1913 as *Pucciniastrum vaccinierum* (Link) Dietel);

- II on *V. myrtillus*, Goat Fell, Sept. 1981 (K). Gigha: II on *V. myrtillus*, Tarbert, Sept. 1980 (K). Kintyre: II on *V. myrtillus*, Tarbert, Sept. 1980 (K).
- Triphragmium ulmariae* (Schumacher) Link
Arran: On *Filipendula ulmaria*, Kilbride (Boyd 1913). Gigha: I on *F. ulmaria*, Achamore, May 1981 (K). Kintyre: II and III on *F. ulmaria*, Stewarton, Peninver and Saddell, Sept. 1980 (K).
- Uromyces armeriae* Kickx
Arran: II on leaves of *Armeria maritima*, Lamplash (Boyd 1910 as *Uromyces limonii* (DC.) Winter); Kilmory (Boyd 1913 as *U. limonii*). Gigha: II on *A. maritima*, May 1981 (K). Kintyre: II on *A. maritima*, Dunaverty and Southend, Sept. 1980 (K).
- **U. behenis* (DC.) Unger
Kintyre: II on *Silene maritima*, Columba's footprint near Keil Point, Sept. 1980 (K). The host is frequent on south and west coasts of Mull, and the rust is probably overlooked there.
- U. dactylidis* Otth
Gigha: I on *Ranunculus ficaria*, Achamore, Sept. 1980 (K). Kintyre: I on *R. ficaria*, Tayinloan, May, 1981 (K). Recorded from Mull on *Dactylis* and *Poa* and I on *Ranunculus*.
- U. lineolatus* (Desm.) Schröter
Gigha: I on *Oenanthe crocata*, east bay at Tarbert, May 1981 (K); III on *Scirpus maritimus*, east bay at Tarbert, Sept. 1980 (K). Perhaps at its northern limit in Gigha. It is absent from Skye, though the hosts grow together there.
- U. muscari* (Duby) Lév.
Arran: III on *Endymion nonscriptum*, Holy Isle, June 1982 (K). Gigha: III on *E. nonscriptum*, Achamore, May 1981 (K). Kintyre: III on *E. nonscriptum*, Tayinloan, May 1981 (K).
- U. nerviphilus* (Grognot) Hotson
Arran: III on *Trifolium repens*, Holy Isle, June 1982 (K). Kintyre: III on *T. repens*, Machrihanish dunes, Sept. 1980 (K).
- **U. pisi* (DC.) Otth
Kintyre: II on *Lotus corniculatus*, Machrihanish dunes, Sept. 1980 (K). Recorded from Colonsay on *Lathyrus pratensis*, Vatersay on *L. corniculatus*, and from Canna and Skye. It is surely overlooked on Mull.
- U. rumicis* (Schumacher) Winter
Kintyre: II and III on *Rumex* sp., Tarbert and Campbeltown to Machrihanish road, Sept. 1980 (K).
- U. valerianae* (DC.) Lév.
Arran: On *Valeriana officinalis* (Wilson 1934); Brodick, Sept. 1981 (K).
- U. viciae-fabae* (Pers.) Schröter
Kintyre: II on *Vicia sepium*, south shore of Campbeltown Loch, Sept. 1980 (K).

TILLETIALES

- Tilletia decipiens* (Pers.) Körn
Arran: In ovaries of *Argrostis vulgaris*, Holy Isle (Boyd 1910); Kilmory and Kilbride (Boyd 1913).
- Urocystis anemones* (Pers.) Winter
Kintyre: On *Ranunculus repens*, Carradale and Tarbert, Sept. 1980 (K).
- U. filipendulae* (Tul.) Schröter
Kintyre: On *Filipendula ulmaria*, Stewarton, Sept. 1980 (K).

USTILAGINALES

- **Ustilago avenae* Jensen
Arran: On *Avena* sp., Kilmory (Boyd 1913). Recorded from Eigg and Tiree. Perhaps almost eradicated by modern agricultural methods.
- U. violacea* (Pers.) Fuckel
Arran: On *Silene dioica*, Brodick, June 1982 (K). Gigha: On *S. dioica*, Achamore, May 1981 (K). Kintyre: Stewarton, Sept. 1980 (K). From Mull on *Stellaria graminea* only.

ASCOMYCETES

HEMIASCOMYCETES

TAPHRINALES

- **Taphrina cerasi* (Fuckel) Sadebeck
Arran: On *Prunus avium*, Brodick Castle, June 1982 (K). Host only occasional on Mull.
- T. populina* Fr.
Arran: On living leaves of *Populus* sp., Kilbride (Boyd 1913 as *Exoascus aureus* Sadebeck).
- T. potentillae* (Farlow) Johans.
Arran: On living leaves of *Potentilla erecta*, Kilbride (Boyd 1913); (Henderson, 1954).

Taphrina pruni Tul.

Gigha: On *Prunus spinosa* leaves causing hypertrophy, Kinerarach, May 1981 (K).

T. losquinetii (Westend.) Magnus

Arran: On living leaves of *Alnus glutinosa*, Kilbride (Boyd 1913); Brodick, Sept. 1981 (K).

PROTOMYCETALES

Protomyces macrosporus Unger

Arran: Forming galls on petioles of *Aegopodium podagraria*, Kilbride (Boyd 1913); Lamlash road near Brodick, Sept. 1980 (K); Brodick, Sept. 1981 (K). Gigha: On *A. podagraria* and *Oenanthe crocata*, Achamore, Sept. 1980 and May 1981 (K). Kintyre: On *A. podagraria*, Campbeltown and Kilkerran, Sept. 1980 (K).

**P. pachydermus* Thüm.

Kintyre: On *Taraxacum* sp. leaves, Kilchenzie, Sept. 1980 (K). Recorded from Rhum.

EUASCOMYCETES

PLECTASCALES

**Arthroderma cuniculi* Dawson

Arran: From soil and hair, Oct. 1962, Dawson (IMI).

A. curreyi Berk.

Arran: From soil (Dawson 1963).

**A. multifidum* Dawson

Arran: From soil, Dawson (IMI).

Elaphomyces sp.

Arran: Oct. 1909, B. Reid (K).

Onygena equina (Willd.:Fr.) Fr.

Arran: On sheep horn, Ballarie, Sept. 1980 (K).

ERYSIPHALES

Erysiphe cichoracearum DC.

Arran: On *Centaurea nigra* leaves, Lamlash, Sept. 1980 (anamorph only); on *Hypochoeris radicata*, Dippin, Sept. 1981 (K, anamorph only). Kintyre: On *Galium aparine*, two miles north of Southend, Sept. 1980 (K, teleomorph and anamorph). Recorded from Mull on *G. aparine* and *Plantago maritima* as *Erysiphe galii* Blumer and *Erysiphe sordida* Junell.

E. galeopsidis DC.

Kintyre: On *Lamium* sp., Campbeltown and on *Stachys sylvatica*, Kilkerran, Sept. 1980 (K). Recorded from Mull on *S. ambigua*.

E. polygoni DC.

Arran: On *Heracleum* sp. leaves, Lamlash road near Brodick, Sept. 1980 (anamorph); on *Heracleum sphondylium*, *Lathyrus pratensis* and *Ranunculus repens*, Brodick, on *Trifolium medium*, Kildonan and *Angelica silvestris*, Dippin, Sept. 1981 (K). Kintyre: On *L. pratensis*, Kilkerran, on *T. pratense*, Campbeltown, Sept. 1980 (K). Recorded from Mull on *Ranunculus repens*, *R. flammula* and *Scabiosa succisa*.

[*Microsphaera alphitoides* Griff. & Maubl.

see *Oidium* state of]

[*M. loniceræ* (DC.) Winter

see *Oidium* state of]

Podosphaera clandestina (Fr.) Lév.

Arran: On living leaves and twigs of *Crataegus* sp., Kilbride (Boyd 1913 as *Podosphaera oxyacanthæ* (DC.) de Bary); on *Crataegus* sp., Kildonan, Sept. 1981 (K, anamorph). Kintyre: On *Crataegus* sp., Killean, Sept. 1980 (K).

Sphaerotheca humuli (DC.) Burrill

Arran: On various herbaceous plants, Kilbride (Boyd 1913 as *Oidium erysiphoides* Fr.); on *Taraxacum officinale*, Brodick and *Epilobium montanum*, Dippin, Sept. 1981 (K). Kintyre: On *T. sp.*, Kilkerran, Sept. 1980 (K). Recorded from Mull on *Alchemilla glabra*, *E. palustre*, *Plantago lanceolata* and *Potentilla erecta*.

Uncinula bicornis (Fr.) Lév.

Arran: On *Acer pseudoplatanus*, Brodick, Sept. 1981 (K).

HYPOCREALES

[*Apiocrea chrysosperma* (Tul.) Sydow

see *Sepedonium chrysospermum* (Bull.) Fr. state of]

Hypocrea rufa (Pers.:Fr.) Fr.

Arran: On rotten wood, Merkland Point, Sept. 1980.

- **Nectria arenula* (Berk. & Broome) Berk.
Gigha: On decaying leaves of *Iris pseudacorus*, east bay, Tarbert, May 1981 (K). Kintyre: On *Juncus* sp., Achinloan road, Sept. 1980 (K).
- N. cinnabarina* (Tode:Fr.) Fr.
Arran: On *Acer pseudoplatanus*, Brodick, Sept. 1981 (K). Gigha: On *Ulmus* sp., Achamore, May 1981 (K).
- N. coccinea* (Pers.:Fr.) Fr.
Arran: On *Sambucus nigra*, Dippin, Sept. 1981 (K).
- N. fockeliana* C. Booth
Kintyre: On *Picea* sp. bark, Tayinloan, May 1981 (K).
- **N. leptosphaeriae* Niessl
Arran: On *Leptosphaeria acuta* on *Urtica dioica* stem, Lochranza, Sept. 1980 (K, anamorph and teleomorph).
- **N. muscivora* (Berk. & Broome) Berk.
Arran: (Patterson 1876).
- **N. pseudopeziza* (Desm.) Rossman
Gigha: On *Phormium tenax* leaves, Achamore, May 1981 (K). Frequent in Britain, though usually on woody substrates. The species is known on *Arundo donax*, but has apparently not been previously reported on *P. tenax*. Ascocarps occur singly or in pairs, nestled between vascular strands. Ascospores measure $42-75 \times 4.5-6.5 \mu\text{m}$, are hyaline and become (3-) 7-11-septate, with the wall finally finely punctate. *Calonectria ochraceopallida* (Berk. & Broome) Sacc. is a synonym.

CLAVICIPITALES

- [*Claviceps purpurea* (Fr.:Fr.) Tul.
see *Sclerotium* state of]
Cordyceps capitata (Holmsk.) Link
Arran: On *Elaphomyces* sp., Oct. 1909, *B. Reid* (K).
- C. militaris* (L.) Link
Arran: Oct. 1909, *B. Reid* (K).

SPHAERIALES

- Anthostomella fuegiana* Speg.
Kintyre: On *Luzula sylvatica* leaves, Kilkerran, Sept. 1980 (K).
- A. phaeosticta* (Berk.) Sacc.
Arran: On *Ammophila* sp., Brodick golf course, Sept. 1981 (K). Kintyre: On *A. arenaria*, Carskey Bay and Machrihanish dunes, Sept. 1980 (K).
- Apioporthes vepris* (Delacr.) Wehmeyer
Arran: On *Rubus fruticosus* agg. stems, Brodick Castle, Sept. 1980 (K).
- [*Apiospora montagnei* Sacc.
see *Arthrinium arundinis* (Corda) Dyko & B. Sutton state of]
- **Ceratostomella vestita* Sacc.
Arran: On *Rhododendron ponticum* wood, Merkland Point, Sept. 1980 (K).
- **Chaetomium olivaceum* Cooke & Ell.
Arran: On herbaceous stem, Pirnmill, Sept. 1980 (IMI).
- Chaetosphaeria callimorpha* (Mont.) Sacc.
Arran: On *Quercus suber* leaves, Brodick Castle, Sept. 1980 (IMI, anamorph only). Gigha: On *Rubus fruticosus* agg. stems, Ardlamey, May 1981 (K, teleomorph only).
- C. myriocarpa* (Fr.) C. Booth
Arran: On *Fagus sylvatica* wood, Brodick Castle and on *Corylus avellana* wood, Merkland Point and Kingscross Point, Sept. 1980 (IMI and K).
- [*C. preussii* W. Gams & Hol.-Jech.
see *Chloridium preussii* W. Gams & Hol.-Jech. state of]
- C. pulviscula* (Currey) C. Booth
Arran: On woody herbaceous stem, Merkland Point, Sept. 1980 (K).
- [*Clathridium corticola* (Fuckel) Shoemaker & E. Müller
see *Seimatopodium lichenicola* (Corda) Shoemaker & E. Müller state of]
- **Clypeosphaeria notaristii* Fuckel
Arran: On *Chamaenerion angustifolium* and *Rubus fruticosus* agg., Kildonan, Sept. 1981 (K).
Gigha: On *R. fruticosus* agg. stems, Ardlamey, May 1981 (K). Recorded from Rhum.
- **Coniochaeta saccardoi* (Marchal) Cain
Arran: On *Pteridium aquilinum* stems and rotten wood, Merkland Point, Sept. 1980 (IMI & K).
See p. 548
- **Cryptodiaporthe aubertii* (Westend.) Wehmeyer
Arran: On *Myrica gale* branch, Kilmory (Boyd 1913 as *Diaporthe wibbei* Nitschke).
- [*C. hystrix* (Tode) Petrak
see *Diplodina acerina* (Pass.) B. Sutton state of]

- [*Daldinia concentrica* (Bolt.:Fr.) Ces. & de Not.
A map showing the British distribution of this species, published by Whalley & Watling (1982), appears to include a single locality from the survey area. This record, however, according to Watling (pers. comm.) is from Ardpatrik, Knapdale and is, therefore, outside the area considered here.]
- **D. vernicosa* (Schwein.) Ces. & de Not.
Arran: On burnt *Ulex europaeus*, Brodick, June 1982 (K). Recorded from Skye on *Betula*. Evidently very uncommon in Scotland, but recorded from Clackmanan and Arthur's Seat, Edinburgh (Watling, pers. comm.).
- Diaporthe arctii* (Lasch) Nitschke
Kintyre: On *Arctium* sp. stems, Westport, Sept. 1980 (K).
- D. eres* Nitschke
Gigha: On *Tilia* sp. twigs, Achamore, May 1981 (K).
- D. cf. eres* Nitschke
Gigha: On *Rhododendron eximium* and *R. sinogrande* × *macabeaeum* leaves, Achamore, May 1981 (K).
- **D. nobilis* Sacc. & Speg.
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *L. nobilis* leaves and twigs, Achamore, May 1981 (IMI & K). See Kirk (1982b).
- **D. pulla* Nitschke
Arran: On *Hedera helix* branches, Corriegills and Kilbride (Boyd 1913, anamorph as *Phoma pulla* Sacc.).
- Diaporthopsis angelicae* (Berk.) Wehmeyer
Arran: On *Oenanthe crocata*, Brodick, Sept. 1981 (K).
- Diatrype disciformis* (Hoffm.:Fr.) Fr.
Arran: On *Fagus sylvatica* wood, Clauchan Glen, Sept. 1980 (K).
- D. stigma* (Hoffm.:Fr.) Fr.
Arran: On *Fagus sylvatica* wood, Clauchan Glen, Sept. 1980 (K).
- Diatrypella favacea* (Fr.) Sacc.
Arran: On *Corylus avellana* twigs, Merkland Point and Pirmill, Sept. 1980 (K).
- Eutypha acharii* Tul.
Arran: On decorticated wood, Clauchan Glen, Sept. 1980 (K).
- Gaeumannomyces graminis* (Sacc.) von Arx & Olivier var. *avenae* (Turner) Dennis
Arran: On *Avena sativa*, Brodick, Sept. 1981 (K).
- [*Glomerella phacidomorpha* (Ces.) Petrak
see *Colletotrichum rhodocyclum* (Mont.) Petrak state of]
- Gnomonia cerastis* (Reiss) Ces. & de Not.
Arran: On *Acer pseudoplatanus* petioles, Brodick, June 1982 (K). Kintyre: On *A. pseudoplatanus* petioles, Tayinloan, May 1981 (K).
- **G. comari* P. Karsten
Gigha: On dead stems of *Potentilla palustris*, Mill Loch, May 1981 (K).
- G. rubi* (Rehm) Winter
Arran: On *Rubus fruticosus* agg. stems, Brodick Castle, Lamdash road near Brodick and Merkland Point, Sept. 1980 (IMI & K). See p. 550.
- G. setacea* (Pers.:Fr.) Ces. & de Not.
Kintyre: On *Corylus avellana* leaves, Tayinloan, May 1981 (K).
- Hypoxyylon fuscum* (Pers.) Fr.
Arran: On *Corylus avellana*, Kilbride (Boyd 1913).
- H. multiforme* (Fr.) Fr.
Arran: On *Betula* sp., Glen Cloy track, Sept. 1981 (K).
- H. semi-immersum* Nitschke
Arran: On *Quercus* sp., Brodick, June 1982 (K).
- **Laestadia faginea* (Auersw.) Cooke & Phill.
Arran: On *Fagus sylvatica* leaves, Kilbride (Boyd 1913).
- Lasiosphaeria hirsuta* (Fr.) Ces. & de Not.
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- [*Melanopsamma pomiformis* (Pers.:Fr.) Sacc.
see *Stachybotrys socia* (Sacc.) Sacc. state of]
- **Peroneutypa heteracantha* (Sacc.) Berl.
Arran: On *Corylus avellana* wood, Kingscross Point, Sept. 1980 (K).
- **Peroneutypella cf. scoparia* (Schwein.:Fr.) Berl.
Gigha: On bark, Achamore, May 1981 (K).
- Phomatospora berkeleyi* Sacc.
Arran: On *Urtica dioica* stems, Lochranza, Sept. 1980 (K). It should be noted that the ascospores of this species bear fine, longitudinal, parallel or sometimes anastomosing ridges, best observed under oil immersion. This character has apparently not been previously noted in the literature. The ornament can be definitely observed on spores of the type material, from Ashwick, Gloucestershire on *Solanum tuberosum*, though is less prominent than in most fresh, mature collections.

- Phyllachora dactylidis* Delacr.
Arran: On *Dactylis glomerata*, Kildonan, Sept. 1981 (K). Gigha: On *D. glomerata*, Achamore, May 1981 (K). Kintyre: On *D. glomerata*, Kilkerran, Sept. 1980 (K). Recorded from Mull as *P. graminis* (Pers.:Fr.) Fuckel.
- P. junci* (Fr.) Fuckel
Arran: On *Juncus effusus* culms, Kilbride (Boyd 1913).
- P. sylvatica* Sacc. & Speg.
Arran: On *Festuca rubra*, Kildonan, Sept. 1981 (K). Kintyre: On *F. rubra* leaves, Machrihanish dunes, Sept. 1980 (K).
- **Plagiostoma lugubre* (P. Karsten) Bolay
Gigha: On dead leaves of *Potentilla palustris*, Mill Loch, May 1981 (K).
- **Pleomassaria holoschista* (Berk. & Broome) Sacc.
Arran: On dead bark of *Alnus glutinosus*, Whiting Bay, June 1919, *D. A. Boyd* (K).
- **Pseudomassaria lycopodina* (P. Karsten) von Arx
Kintyre: On *Lycopodium clavatum*, Sept. 1959, *A. C. Jermy* (K). See p. 552.
- Rosellinia mammiformis* (Pers.:Fr.) Ces. & de Not.
Gigha: On dead stems of *Hedera helix*, north of Mill Loch, May 1981 (K).
- Sordaria fimicola* (Rob.) Ces. & de Not.
Arran: On deer dung, Merkland Point, Sept. 1980 (K).
- **S. macrospora* Auersw.
Arran: On deer dung, Merkland Point, Sept. 1980 (K). Recorded from Rhum and St Kilda. Ubiquitous and presumably overlooked on Mull.
- S. cf. superba* de Not.
Arran: On deer dung, Merkland Point, Sept. 1980 (K). Perithecia are scattered amongst more abundant material of *S. macrospora* and *S. fimicola*. The spores measure 22–25(–28) × 16–19 μm, very similar to those of *S. humana* (Fuckel) Winter, but differing from that species in having a gelatinous sheath. They seem distinct from *S. macrospora* but are somewhat broader than those described for *S. superba* by Lundquist (1972).
- **Sydowiella juncina* Spooner
Arran: On *Juncus effusus* culms, Cock of Arran, June 1982 (K). See p. 552.
- Ustilina deusta* (Fr.) Petrak
Arran: On *Fagus sylvatica*, Brodick, June 1982 (K).
- **Valsa ceratophora* Tul.
Arran: On *Rubus fruticosus* agg. stem, Merkland Point, Sept. 1980 (K).
- V. sp.*
Gigha: On dead twigs of *Olearia albida*, Achamore, May 1981 (K).
- **Valsella salicis* Fuckel
Gigha: On dead twigs of *Salix aurita*, hill east of Tarbert, May 1981 (K).
- Xylaria hypoxylon* (L.:Fr.) Grev.
Arran: On rotten wood, Merkland Point. Kingscross Point and Clauhan Glen, Sept. 1980; on sticks, Brodick, Sept. 1981 (K). Gigha: On rotten wood, Achamore, May 1981 (K). Kintyre: On dead *Ulex europaeus*, Achinloan road, Sept. 1980 (K).
- **X. longipes* Nitschke
Gigha: On *Acer pseudoplatanus*, Achamore, May 1981 (K). Recorded from Colonsay and Skye. The host is frequent on Mull, and this species is likely to be found there.
- **X. cf. longipes* Nitschke
Gigha: On *Tilia* sp., Achamore, May 1981 (K). Differs from typical collections in having a spiral germ slit to the ascospores.
- **Zignoella cf. fallax* Sacc. sensu Munk
Gigha: On dead twigs of *Laurus nobilis*, Achamore, May 1981 (K).

CORONOPHORALES

- Bertia moriformis* (Tode:Fr.) De Not.
Arran: On decorticated *Rhododendron ponticum* wood, Merkland Point, Sept. 1980 (K).

PHACIDIALES

- Hypoderma hederæ* De Not.
Arran: On *Hedera helix* leaves, Brodick Castle, Sept. 1980 (K).
- H. virgultorum* DC.
Arran: On *Rubus fruticosus* agg. stem, Merkland Point and Lamlash, Sept. 1980 (IMI & K); on *R. fruticosus* agg. stem, Kildonan, Sept. 1981 (K); on *R. fruticosus* agg. stem, Holy Isle, June 1982 (K).
- Lophodermium arundinaceum* (Schrader:Fr.) Chev.
Arran: On *Ammophila* sp., Brodick and on *Elymus* sp., Brodick and Lamlash, Sept. 1981 (K).

- Lophodermium juniperi* (Grev.) Darker.
Arran: On *Juniperus communis* needles, Kilbride (Boyd 1913); on dwarf *J. communis*, Goat Fell, Sept. 1981 (K). Gigha: On *J. communis* needles, Tarbert, Sept. 1980 (K); on *J. communis* twigs, Achamore, May 1981 (IMI).
- L. pinastri* (Schrader:Fr.) Chev.
Arran: On *Pinus sylvestris* needles, Kilmory and Kilbride (Boyd 1913); on *P. sylvestris* needles, Brodick, Sept. 1981.
- L.* sp.
Arran: On *Pinus* sp. needles, Brodick Castle, Sept. 1980 (IMI).
- Lophomerum ponticum* Minter
Arran: On *Rhododendron ponticum* leaf, Merkland Point, Sept. 1980 (IMI & K).
- Phacidiostroma multivalve* (DC.) Höhnelt
Arran: On *Ilex aquifolium*, Brodick and Holy Isle, June 1982 (K).
- **Pseudophacidium microspermum* (Fuckel) Rehm
Gigha: On *Salix aurita* twigs, hill east of Tarbert, May 1981 (K). See p. 556.
- [*Rhytisma acerinum* (Pers.) Fr.
see *Melasmia acerina* Lévl. state of]
- [*R. empetri* (Wrangel:Fr.) Fr.
see *Melasmia empetri* Magnus state of]
- [*R. salicinum* (Pers.) Fr.
see *Melasmia salicina* Lévl. state of]
- **Terriera cladophila* (Lévl.) B. Eriksson
Gigha: On *Vaccinium myrtillus* stems, Tarbert, May 1981 (K). Recorded from Harris. Likely to occur on Mull, where the host is widespread.

HELOTIALES

ORBILIACEAE

- **Orbilina* cf. *acuum* Velen.
Arran: On decorticated wood, Merkland Point, Sept. 1980 (K). See p. 573.
- **O. auricolor* (Blox.) Sacc.
Arran: On *Rhododendron ponticum* wood, Merkland Point, Sept. 1980 (K). Gigha: On *Rubus fruticosus* agg. stem, Ardlamey, May 1981 (K). Recorded from Skye. Reexamination of the type material shows this to provide an earlier name for the species long referred to as *Orbilina curvatispora* Boud.
- O. inflatula* (P. Karsten) P. Karsten
Gigha: On *Fraxinus* sp. bark, Achamore, May 1981 (K). Recorded from Mull as *Orbilina auricolor* (Blox.) Sacc. This is the correct name for the species usually referred to as *Orbilina auricolor*.
- O. luteorubella* (Nyl.) P. Karsten
Arran: On decorticated *Acer pseudoplatanus* wood, Brodick Castle, Sept. 1980 (K).

DERMATEACEAE

- **Laetinaevia marina* (Boyd) Spooner
Arran: On decaying seaweed fronds (Boyd 1909; Smith 1909); on decaying fronds of *Fucus vesiculosus* and *Ascophyllum nodosum*, Kilbride (Boyd 1913). See p. 568.
- Leptotrochila brunellae* (Lund) Dennis
Arran: On *Asteroma prunellae* and leaves and stems of *Prunella vulgaris*, Corriegills (Boyd 1909 as *Ephelina prunellae* Phill.); (Boyd 1913 as *E. prunellae*).
- L. ranunculi* (Fr.) Schuëpp
Gigha: On leaves of *Ranunculus* sp., Achamore, Sept. 1980 (K). Kintyre: On leaves of *R.* sp., Tarbert, Sept. 1980 (K).
- Micropeziza karstenii* Nannfeldt
Kintyre: On *Dactylis glomerata*, Kilkerran, Sept. 1980 (K). *Actinoscypha graminis* P. Karsten is a synonym.
- **Mollisia arundinacea* (DC.) Phill.
Arran: On *Phragmites australis* culms, Kildonan Point, Sept. 1980 (K). Recorded from Rhum.
- **M. atrata* (Pers.:Fr.) P. Karsten forma *oenanthes* Phill.
Arran: On *Oenanthe crocata*, Brodick, Sept. 1981 (K).
- M. benesuada* (Tul.) Phill.
Arran: On *Corylus avellana* twigs, Merkland Point, Sept. 1980 (K).
- M. cinerea* (Batsch) P. Karsten
Arran: On rotten wood, Merkland Point and Clauchan Glen, Sept. 1980.
- M. escharodes* (Berk. & Broome) Gremmen
Gigha: On dead stems of *Rubus fruticosus* agg., Ardlamey, May 1981 (K).
- M.* cf. *ligni* (Desm.) P. Karsten
Arran: On *Rhododendron ponticum* wood, Merkland Wood, June 1982 (K).
- M. melaleuca* (Fr.) Sacc.
Arran: On *Sorbus aucuparia*, Holy Isle, June 1982.

- Mollisia* cf. *palustris* (Roberge) P. Karsten
Arran: On *Phragmites australis* culms, Kildonan Point, Sept. 1980 (K).
M. sp.
Arran: On *Arctium* sp., Fallen Rock, June 1982 (K).
M. sp.
Arran: On *Phragmites australis*, Kildonan, Sept. 1981 (K).
M. sp.
Gigha: On *Salix* sp., Leim, May 1981 (K).
M. sp.
Gigha: On *Iris pseudacorus*, Leim, May 1981 (K).
M. sp.
Kintyre: On dead stems of *Endymion nonscriptus*, Tayinloan, May 1981 (K).
Naevula perexigua (Rob.) L. & K. Holm
Arran: On *Quercus* sp., Brodick, June 1982 (K).
Niptera phaea (Rehm) Rehm
Arran: On *Eriophorum* sp., Goat Fell, Sept. 1981 (K).
Pezizula rubi (Lib.) Niessl
Arran: On *Rubus fruticosus* agg. stem, Lamdash, Sept. 1980 (IMI & K); on *R. fruticosus* agg. stem, Glen Rosa, June 1982 (K). Gigha: On *R. fruticosus* agg. stems, Ardlamey, May 1981 (K).
Propolomyces versicolor (Fr.) Dennis
Arran: On *Rhododendron ponticum* wood, Merkland Point; on *Quercus* sp. wood, Pirnmill, Sept. 1980 (K). Recorded from Mull as *Propolomyces farinosus* (Pers.) Sherwood.
Pseudopeziza trifolii (Biv.-Bern.) Fuckel
Arran: On living leaves of *Trifolium repens*, Kilmory (Boyd 1913); on *T. repens*, Brodick, Sept. 1981 (K). Gigha: On leaves of *T. pratense*, Sept. 1980 (K). Kintyre: On leaves of *T. pratense*, Tarbert and Killean, Sept. 1980 (K).
Pyrenopeziza digitalina (Phill.) Sacc.
Arran: On *Digitalis atropurpurea* stems, Kilbride (Boyd 1913 as *Mollisia digitalina*).
P. arenivaga (Phill.) Boud.
Arran: On *Ammophila arenaria*, Brodick golf course, Sept. 1981 (K).
P. fuckelii Nannf.
Gigha: On dead leaves of *Salix* sp., Leim, May 1981 (K).
P. mercurialis (Fuckel) Boud.
Arran: On *Mercurialis perennis* stems, Kilbride (Boyd 1913 as *Mollisia mercurialis*).
P. petiolaris (Alb. & Schwein.:Fr.) Nannf.
Arran: On petioles of *Acer pseudoplatanus*, Brodick, June 1982 (K). Kintyre: On petioles of *A. pseudoplatanus*, Tayinloan, May 1981 (K).
P. rubi (Fr.) Rehm
Arran: On *Rubus idaeus* stems, Kilbride (Boyd 1913).
Tapesia fusca (Pers.) Fuckel
Arran: On *Calluna vulgaris* twigs, Kilbride (Boyd 1913); on decorticated wood and twigs, Merkland Point and Kingscross Point, Sept. 1980 (K); on *Calluna vulgaris* twigs, Merkland, June 1981, *I. Fraser* (K); on *C. vulgaris*, Merkland Wood and on *Rhododendron ponticum*, Brodick, June 1982 (K).
Trochila craterium Fr.
Arran: On *Ilex aquifolium* leaves, Kilbride (Boyd 1913); on *Hedera helix* leaves, Merkland Point, Sept. 1980 (IMI). Gigha: On dead leaves of *H. helix*, near Mill Loch, May 1981 (K, anamorph and teleomorph).

HYALOSCYPHACEAE

- **Cistella lagenipilus* Spooner
Arran: On *Carex binervis* leaf, Holy Isle, June 1982 (K). See p. 566.
Dasyscyphus acutipilus (P. Karsten) Sacc.
Gigha: On *Phragmites australis*, Leim, May 1981 (K).
D. apalus (Berk. & Broome) Dennis
Arran: On *Juncus effusus* stems, Lochranza, Sept. 1980 (K). Kintyre: On *J. effusus*, Achinloan road, Sept. 1980 (K).
D. cerinus (Pers.) Fuckel
Kintyre: On dead wood of *Sorbus aucuparia*, Tayinloan, May 1981 (K).
D. clandestinus (Bull.) Fuckel
Arran: On *Cirsium palustre*, Glen Sannox, June 1982 (K).
**D. clavisporus* Mouton
Arran: On *Juncus* sp., Goat Fell, Sept. 1981 (K). Recorded from Skye. A common species, surely overlooked on Mull.
D. controversus (Cooke) Rehm
Arran: On *Phragmites australis* culms, Kildonan Point, Sept. 1980 (K).
D. diminutus (Rob.) Sacc.
Arran: On *Juncus* sp., Cock of Arran, June 1982 (K).

- Dasyscyphus eriophori* (Quélet) Sacc.
Arran: On *Eriophorum* sp., Ross road near Lamlash, June 1982 (K).
- D. fugiens* (Buckn.) Masee
Arran: On *Juncus* sp., Cock of Arran, June 1982 (K).
- D. fuscescens* (Pers.) Gray
Gigha: On dead leaves of *Salix aurita*, hill east of Tarbert, May 1981 (K).
- **D. palearum* (Desm.) Masee
Kintyre: On *Ammophila arenaria*, Machrihanish dunes, Sept. 1980 (K). Recorded on *A.* sp. from Colonsay, Harris, Mingulay and Rhum.
- D. sulfureus* (Pers.) Masee
Arran: On *Urtica dioica* stems, Merklund Point and Lochranza, Sept. 1980 (K).
- D. sulphurellus* (Peck) Sacc.
Arran: On *Myrica gale*, Glen Cloy, Sept. 1981 (K); on *M. gale* stem, Glen Sannox, June 1982 (K); Gigha: On dead stems of *M. gale*, Leim to Ardlamey Bay, May 1981 (K). Kintyre: On dead stems of *M. gale*, Glen Lussa, May 1981.
- **D. cf. sydowii* Dennis
Arran: On *Juncus squarrosus*, Cock of Arran, June 1982 (K). Recorded from Harris on *Eriophorum* sp. and S. Uist on *Trichophoron* sp. Typically on species of *Eriophorum*. The present collection differs also in having a longer stipe than usual.
- D. virgineus* Gray
Arran: On decorticated wood, Merklund Point and on *Lonicera caprifolium* twigs, Lamlash and Kingscross Point, Sept. 1980 (K); on *Pteridium aquilinum*, Cock of Arran, June 1982 (K). Gigha: On *P. aquilinum*, Port nam Faochag, May 1981. Kintyre: On *Ulex europaeus*, Achinloan Road, Sept. 1980 (K).
- **Dematiyscypha dematiicola* (Berk. & Broome) Svrček
Arran: On *Ilex aquifolium* and *Rhododendron ponticum* wood, Merklund Point and on *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI & K, anamorph and teleomorph). Recorded from Lewis as *Hyaloscypha dematiicola* (Berk. & Broome) Nannf.
- Hyaloscypha hyalina* (Pers.) Boud.
Arran: On rotten leaf base of *Libertia formosa*, Brodick Castle, June 1982 (K).
- H. leuconica* (Cooke) Nannf.
Arran: On *Aesculus hippocastanum* cupule, Brodick Castle, Sept. 1980 (K).
- **Hyalotricha corticola* Dennis
Gigha: On dead stems of *Myrica gale*, Leim to Ardlamey Bay, May 1981 (K). Surely overlooked on Mull, where the host is abundant.
- Lachnellula hahniana* (Seaver) Dennis
Arran: On *Larix* sp., Brodick Castle, June 1982 (K).
- Microscypha grisella* (Rehm) Sydow
Arran: On *Pteridium aquilinum*, Cock of Arran, June 1982 (K). Gigha: On dead stems of *P. aquilinum*, Port nam Faochag, May 1981 (K).
- Mollistopsis dennisii* Graddon
Arran: On *Ulex europaeus*, Brodick, June 1982 (K).
- Perrotia phragmiticola* (Henn. & Ploett.) Dennis
Arran: On *Phragmites australis*, Kildonan, Sept. 1981 (K). Apothecia are more abundant and in better condition than in the first collection reported from Britain by Spooner (1981). Asci are 8-spored, measuring 76–82 × 6.5–7.5 µm, the pore not blue in Melzer's reagent. Ascospores 16–19 × 2–3 µm, occasionally developing a second septum. Paraphyses filiform, obtuse, 2–3 µm diam., slightly exceeding the asci. Reddish granules again not observed on the hairs.
- Polydesmia pruinosa* (Berk. & Broome) Boud.
Arran: On *Diatrype stigma*, Clauchan Glen and on *Corylus avellana* wood, Merklund Point, Sept. 1980 (K); on *D. stigma*, Kildonan and on effete pyrenomycete on *Ulex europaeus*, Dippin, Sept. 1981 (K).
- Unguicularia cf. cirrhata* (Crouan) le Gal
Arran: On *Oenanthe crocata*, Brodick, June 1982 (K).
- **U. ulmariae* (Velen.) Dennis
Kintyre: On dead *Molinia* sp., Glen Lussa, Sept. 1980 (K). Recorded from Tiree.
- **Urceolella carestiana* (Rabenh.) Dennis
Arran: On *Athyrium felix-femina*, Brodick, June 1982 (K). Recorded from Skye.

SCLEROTINIACEAE

- **Lanzia vacini* (Velen.) Spooner
Arran: On *Acer pseudoplatanus* leaf, Kingscross Point, Sept. 1980 (K). See p. 570.
- [*Monilinia johnsonii* (Ell. & Ev.) Honey
see *Monilia* state of]
- Rutstroemia fruticeti* Rehm
Gigha: On dead stems of *Rubus fruticosus* agg., Ardlamey, May 1981 (K).
- R. sydowiana* (Rehm) White
Arran: On *Quercus* sp. petioles, Pirnmill, Sept. 1980 (K).

Sclerotinia curreyana (Berk.) P. Karsten

Arran: On dead culms of *Juncus effusus*, Kilmory and Kilbride (Boyd 1913, anamorph); on *J. effusus* culms, Cock of Arran, June 1982 (K, teleomorph).

[*S. fuckeliana* (de Bary) Fuckel

see *Botrytis cinerea* Pers. agg. state of]

[*S. globosa* (Buchw.) Webster

see *Botrytis globosa* Raabe state of]

[*S. polyblastis* Gregory

see *Botrytis polyblastis* Dowson state of]

GEOGLOSSACEAE

Geoglossum fallax Durand

Arran: In grass, Chalmadale and Lamlash to Brodick road, Sept. 1981 (K).

G. nigratum Cooke

Arran: In grass, Chalmadale and Lamlash to Brodick road, Sept. 1981 (K). Kintyre: In sandy pasture, Westport, Sept. 1980 (K).

Leotia lubrica Pers.

Arran: In leaf litter of mixed woodland, Clauchan Glen, Sept. 1980 (K); under *Corylus avellana*, Kildonan, Sept. 1981 (K).

Microglossum viride (Pers.:Fr.) C. Gillet

Arran: In moss under *Rhododendron ponticum*, Merkland Point, Sept. 1980 (K).

Mitruula paludosa Fr.

Arran: On decaying leaves, Glen Rosa (Boyd 1913, as *Mitruula phalloides*); in stream on rotten *Molinia* sp., Dougarie Lodge and on *Sphagnum* sp., Glen Ashdale, June 1981, *I. Fraser* (K).

Thuemenidium atropurpureum (Batsch.:Fr.) Kuntze

Arran: In grass, Corrie, Oct. 1909 (Smith 1910); (Boyd 1913, as *Microglossum atropurpureum* P. Karsten).

Trichoglossum hirsutum (Pers.:Fr.) Boud.

Kintyre: Glen Breackerie and Westport, Sept. 1980 (K).

HELOTIACEAE

Apostemidium guernisaci (Crouan) Boud.

Gigha: On *Salix* sp. twigs in swamp, Leim, May 1981 (K).

Bisporella citrina (Batsch.:Fr.) Korf & Carpenter

Kintyre: On *Alnus glutinosa*, Dalsmirran, Sept. 1980 (K).

**B. scolochloae* (De Not.) Spooner

Arran: On *Apiospora* sp. on *Phragmites australis* culms, Kildonan Point, Sept. 1980 (K). See p. 557.

**Bryoscyphus conocephali* (Boyd) Spooner

Arran: On thallus of *Conocephalus conicus*, Corriegills (Boyd 1909 & 1913 as *Helotium marchantiae* (Berk.) Fr. var. *conocephali* Boyd). See p. 558.

**Calycellina juniperina* (K. & L. Holm) Spooner

Gigha: On twigs of *Juniperus communis*, Achamore, May 1980 (IMI & K). See p. 565.

Chlorosplenium aeruginascens (Nyl.) P. Karsten

Arran: On rotten wood, Clauchan Glen, Sept. 1980.

Claussenomyces prasinulus (P. Karsten) Korf & Abawi

Arran: On rotten wood, Merkland Point, Sept. 1980 (IMI & K, anamorph and teleomorph).

Gigha: On *Tilia* sp. wood, Achamore, May 1981 (K, anamorph only).

Crocicreas cyathoideum (Bull.) Carpenter

Arran: On *Silene dioica*, Brodick, June 1982 (K). Gigha: On *Hordeum* sp. stubble, Sept. 1980 (K). Recorded on Mull as *Cyathicula cyathoidea* (Bull.) Thum.

**Dermea cerasi* (Pers.) Fr.

Arran: On *Prunus cerasus*, Brodick Castle, June 1982 (K).

Durella connivens (Fr.) Rehm

Arran: On *Quercus* sp., Brodick, June 1982 (K).

Heterosphaeria patella (Tode.:Fr.) Grev.

Arran: On *Angelica sylvestris* stems, Kilbride (Boyd 1913).

Hymenoscyphus caudatus (P. Karsten) Dennis

Arran: On decaying leaf petioles of *Aesculus hippocastanum*, Brodick Castle, Sept. 1980 (K).

H. fructigenus (Bull.) Gray

Arran: On *Corylus avellana* nuts, Kingscross Point and Pirmill, Sept. 1980 (K); on *Corylus avellana* nuts, Kildonan, Sept. 1981 (K).

**H. herbarum* (Pers.:Fr.) Dennis

Arran: On *Urtica dioica* stems, Lochranza, Sept. 1980 (K).

H. scutulus (Pers.:Fr.) Phill.

Arran: On damp herbaceous stems, Kildonan Point, Sept. 1980 (K).

**H. scutulus* (Pers.:Fr.) Phill. var. *solani* P. Karsten

Arran: On *Urtica dioica* stems, Merkland Point and on herbaceous stems, Brodick Castle, Sept. 1980 (K).

- **Hymenoscyphus vitellinus* (Rehm) Kuntze
Arran: On *Urtica dioica* stems, Merkland Point, Sept. 1980 (K); on dead *Circaea lutetiana* stems, Kildonan and on *Filipendula ulmaria*, Dippin, Sept. 1981 (K). Recorded from Coll, Harris, Rhum and Skye. Perhaps not differentiated from *H. scutulus* in the Mull flora.
- **Pezizella chionea* (Fr.) Dennis
Gigha: On *Pinus* sp. cone, Achamore, May 1981 (K).
P. cf. chrysostigma (Fr.) Sacc.
Arran: On *Athyrium felix-femina*, Brodick Castle, June 1982 (K).
- **Phaeangella ulicis* (Cooke) Massee
Kintyre: On dead stems of *Ulex europaeus*, Achinloan Road, Sept. 1980 (K). Recorded from Skye and Tiree. Probably overlooked on Mull where the host is plentiful.
- Phaeangellina empetri* (Phill.) Dennis
Gigha: On leaves of *Empetrum* sp., Sept. 1980 and May 1981 (K).
[*Phaeoscypha cladii* (Nag Raj & Kendrick) Spooner
see *Chalara cladii* M. B. Ellis state of]
- **Psilachnum acutum* (Vel.) Raitvür
Arran: On grass, Cock of Arran, June 1982 (K).
- Velutarina rufo-olivacea* (Alb. & Schwein.) Korf
Arran: On dead branches of *Ulex europaeus*, Ballarie, Sept. 1980 (K).
- **Vibrissea truncorum* Fr.
Arran: On wet twigs and branches, Cnocan Burn near Goat Fell (Boyd 1912); (Boyd 1913).

OSTROPALES

- **Melittosporiella pulchella* Höhnelt
Gigha: On *Salix* sp. wood, Achamore, May 1981 (K). Recorded from Skye.
Stictis stellata Wallr.
Arran: On *Eupatorium cannabinum* stems, Corriegills (Boyd 1913).

PEZIZALES

- Aleuria aurantia* (Fr.) Fuckel
Arran: On bare soil in gravel path, Lamlash road, Sept. 1980 (K); Glen Cloy track and Brodick, Sept. 1981 (K).
- Cheilymenia fimicola* (de Not. & Bagl.) Dennis
Arran: On sheep dung, Brodick Castle, Sept. 1980 (K); on cow dung, Brodick, June 1982 (K).
Cheilymenia coprinaria (Cooke) Boud. is a synonym.
- **C. raripila* (Phill.) Dennis
Arran: On cow dung, Lochranza, Sept. 1980 (K). Recorded from Barra.
- Coprobria granulata* (Bull.:Fr.) Boud.
Arran: On cow dung, Kilbride (Boyd, 1913 as *Humaria granulata* (Bull.:Fr.) Sacc.); on sheep dung, Brodick Castle, Sept. 1980 (K); on cow dung, Brodick, June 1982 (K). Gigha: On cow dung, Tarbert, Sept. 1980 (K).
- Helvella lacunosa* Afz.:Fr.
Arran: (Docker, pers. comm.).
- Lasiobolus ciliatus* (Schmidt:Fr.) Boud.
Arran: On deer dung, Merkland Point, Sept. 1980 (K).
- Leptopodia elastica* (Bull.) Boud.
Arran: On path side under *Corylus avellana*, Kingscross Point, Sept. 1980 (K).
- Otidea onotica* (Pers.) Fuckel
Arran: Under deciduous trees by stream, Clauchan Glen, Sept. 1980 (K).
- Peziza badia* Pers.
Arran: On soil, Lamlash road near Brodick and Lamlash, Sept. 1980 (K); Glen Cloy track and Brodick, Sept. 1981 (K).
- Rhizina undulata* Fr.
Arran: On the ground, Brodick (Boyd 1913 as *Rhizina inflata* (Schaeffer) Quélet).
- Scutellinia trechispora* (Berk. & Broome) Lambotte
Kintyre: On bare soil, 2 miles north of Southend, Sept. 1980 (K). Recorded from St Kilda and S. Uist. Scottish records are few, but extend to the Moray Firth. Reported from Mull by Stevenson (1882) but omitted from the Mull Flora.

LOCULOASCOMYCETES

PLEOSPORALES

- Chaetothyrium babingtonii* (Berk.) Keissler
Arran: On *Acer macrophyllum*, *Hosta* sp. and *Hydrangea* sp., Brodick Castle, Sept. 1981 (K).

- **Coleroa potentillae* (Fr.) Winter
Kintyre: On *Potentilla anserina*, Peninver, Sept. 1980 (K). Recorded from Mingulay (as *Coleroa tomentillae* (Wallr.) Winter) and Raasay. The species is widespread with the host, and surely overlooked on Mull.
- C. robertiani* (Fr.) E. Müller
Kintyre: On *Geranium robertianum* leaves, Carradale, Sept. 1980 (K).
- **Didymosphaeria diplospora* (Cooke) Rehm
Gigha: On dead stems of *Rubus fruticosus* agg., Ardlamey, May 1981 (K).
- [*Eudarlucia caricis* (Fr.) Eriksson
see *Sphaerellopsis filum* (Biv.-Bern.:Fr.) B. Sutton state of]
- Keissleriella culmifida* (P. Karsten) Bose
Kintyre: On *Elymus arenarius*, Tayinloan, May 1981 (K).
- Leptosphaeria acuta* (Fr.) P. Karsten
Arran: On *Urtica dioica* stems, Kilbride (Boyd 1913); on *U. dioica* stems, Merkland Point and Lochranza, Sept. 1980 (IMI & K).
- **L. agnita* (Desm.) Ces. & de Not.
Arran: On *Eupatorium cannabinum* stems, Kilbride (Boyd 1913). The typical host, but it occurs on many others and is likely to be found on Mull.
- L. doliolum* (Fr.) de Not.
Arran: On *Urtica dioica* stems, Merkland Point and Lochranza, Sept. 1980 (K); On *U. dioica*, Machrie Moor, Sept. 1981 (K).
- **L. doliolum* (Fr.) de Not. var. *conoideum* Sacc.
Gigha: On *Laurus nobilis* twigs, Achamore, May 1981 (K).
- **L. eustoma* (Fuckel) Sacc.
Arran: On *Phragmites australis* culms, Kildonan Point, Sept. 1980 (K); On *Agropyron repens* leaf, Brodick, Sept. 1981 (K). Gigha: On grass, Leim, May 1981 (K). Kintyre: On *Poa annua*, Stewarton, Sept. 1980 (K). Recorded from Eriskay.
- **L. herpotrichoides* de Not.
Gigha: On grass, Sept. 1980 (K). Kintyre: On *Agrostis* sp. and *Elymus arenarius*, Tayinloan, May 1981 (K). Recorded from Islay, Rhum, Skye and Tiree.
- **Lophiostoma angustilabrum* (Berk. & Broome) Cooke
Arran: On *Ulex europaeus* stem, Ballarie, Sept. 1980 (K). Recorded as var. *crenatum* (Pers.:Fr.) Chesters & Bell from Mull.
- L. vagabundum* (Sacc.) Chesters & Bell
Arran: On *Circaea lutetiana*, Kildonan, Sept. 1981 (K).
- **Melanomma fuscicululum* Sacc.
Arran: On decorticated wood, Merkland Point, Sept. 1980 (K).
- M. pulvis-pyrius* (Pers.:Fr.) Fuckel
Arran: On decorticated *Betula* sp. wood and *Corylus avellana* twig, Merkland Point and on *Acer pseudoplatanus* wood, Lamdash road, Sept. 1980 (K); On *Myrica gale*, Glen Cloy track, Sept. 1981 (K); On *Rhododendron ponticum* wood, Brodick and Merkland Wood, June 1982 (K). Kintyre: On wood, Tayinloan, May 1981 (K).
- Ophiobolus acuminatus* (Sow.:Fr.) Duby
Arran: On *Cirsium palustre*, Kilbride (Boyd 1913).
- O. cirsii* (P. Karsten) Sacc.
Arran: On *Cirsium palustre*, Merkland Wood, June 1982 (K).
- Pleospora herbarum* (Fr.) Rabenh.
Arran: On *Centaurea nigra*, Lamdash road, Brodick, Sept. 1981. Kintyre: On *Armeria maritima*, *Agrostis* sp. and *Carex arenaria*, Machrihanish, Sept. 1980 (K).
- P. vagans* Niessl
Arran: On *Avena sativa*, *Agropyron repens* and *Lolium perenne*, Brodick, Sept. 1981 (K).
- **Protoventuria arxii* (E. Müller) Barr
Gigha: On *Rhododendron eximium* and *R. sinogrande* × *macabeum* leaves, Achamore, May 1981 (K).
- Pteridiospora scoriadea* (Fr.) Dennis
Arran: On *Betula* sp., Holy Isle, June 1982 (K).
- Trematosphaeria* sp.
Arran: On *Olearia macrodonta* bark, Achamore, May 1981 (IMI).
- T.* sp.
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (K).
- **Tubeufia cerea* (Berk. & M. A. Curtis) Höhnel
Arran: On effete perithecia and rotten wood, Merkland Point, Sept. 1980 (IMI & K).
- Venturia maculiformis* (Desm.) Winter
Arran: On *Epilobium montanum*, Dippin, Sept. 1981 (K). Kintyre: On *E. montanum* leaves, Carradale, Sept. 1980 (K).
- **V. minuta* Barr
Gigha: On dead leaves of *Salix aurita*, hill east of Tarbert, May 1981 (K).
- V. rumicis* (Desm.) Winter
Arran: On living leaves of *Rumex obtusifolius*, Kilmory and Kilbride (Boyd 1913 as *Sphaerella rumicis* (Desm.) Cooke). Gigha: On *Rumex* sp. leaves, Achamore, Sept. 1980 (K).

HYSTERIALES

- [*Farlowiella carmichaeliana* (Berk.) Sacc.
see *Acrogenospora* state of]
Glontopsis praelonga (Schwein.) Zogg
Arran: On *Rhododendron ponticum* twigs, Merkland Point, Sept. 1980 (IMI & K). Gigha: On *Myrica gale* stems, Leim to Ardlamey and on *Rubus fruticosus* agg. stems, Ardlamey, May 1981 (K).
Hysterium angustatum Alb. & Schwein.
Gigha: On *Fagus sylvatica* wood, Achamore, May 1981 (K).
**Lophium elegans* Zogg
Arran: On dwarf *Juniperus communis*, Goat Fell, Sept. 1981 (K). See p. 576.
Mytilidion acicola Winter
Gigha: On *Juniperus communis* twigs and needles, west bay near Tarbert, May 1981 (K).
M. decipiens (P. Karsten) Sacc.
Gigha: On *Juniperus communis* twigs, Achamore and west bay near Tarbert, May 1981 (IMI & K).
**M. laeviusculum* (P. Karsten) Sacc.
Gigha: On conifer (*Cupressaceae*) twig, Achamore, May 1981 (IMI).

DOTHIDEALES

- **Capronia pleiospora* Munk
Arran: On *Rhododendron ponticum* wood, Merkland Point, Sept. 1980 (K). See p. 575.
**Dangeardiella fusiformis* Obrist
Gigha: On *Dryopteris dilatata* petiole, hill east of Tarbert, May 1981 (K). See p. 575.
**Dictyotrichiella pulcherrima* Munk
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
**Herpotrichiella cf. pilosella* (P. Karsten) Munk
Gigha: Achamore, May 1981 (K).
H. sp.
Arran: On *Rhododendron ponticum* wood, Merkland Point, Sept. 1980 (K).
Mycosphaerella aspidii (Höhnelt) L. & K. Holm
Arran: On *Pteridium aquilinum* stem, Clauchan Glen, Sept. 1980 (K). Frequently known as *M. aquilina* (Fr.) Schröter.
[*M. dianthi* (Burt.) Jørstad
see *Cladosporium echinulatum* (Berk.) de Vries state of]
**M. heraclei* (Fr.) Petrak
Arran: On *Heracleum sphondylium*, Kilmory (Boyd 1913 as *Phyllachora heraclei* (Fr.) Fuckel).
Kintyre: On living leaves of *H. sphondylium*, Kilchenzie, Sept. 1980 (K).
M. iridis (Desm.) Schröter
Arran: On living leaves of *Iris germanica*, Kilbride (Boyd 1913 as *Sphaerella iridis* Auersw.).
M. killianii Petrak
Arran: On *Trifolium repens* leaves, Kilmory (Boyd 1913 as *Phyllachora trifolii* (Pers.) Fuckel and *Polythrincium trifolii* Kunze); on *T. repens* leaves, Kildonan, Sept. 1981 (K). Kintyre: On *T. repens* leaves, Southend, Sept. 1980 (K). Recorded on Mull as *Cymadothea trifolii* (Killian) Wolf.
M. punctiformis (Pers.:Fr.) Starbäck
Kintyre: On *Corylus avellana* leaves, Tayinloan, May 1981 (K).
**M. rhododendri* Lindau
Arran: On *Rhododendron ponticum* leaves, Merkland Point, Sept. 1980 (IMI anamorph, K teleomorph).
M. sp.
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI).
Rhopoglyphus filicinus (Fr.) Nitschke
Arran: On *Pteridium aquilinum* stems, Kilbride (Boyd 1913, teleomorph); on *P. aquilinum* stems, Merkland Point, Sept. 1980 (K, anamorph). Gigha: On *P. aquilinum* stems, Rubha Cairn Bhàin, Sept. 1980 (K, anamorph).

MICROTHYRIALES

- Asterina veronicae* (Lib.) Cooke
Arran: On living leaves of *Veronica officinalis*, Kilbride (Boyd 1913).
Aulographina eucalypti (Cooke & Massee) von Arx & E. Müller
Arran: On *Eucalyptus* sp. leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *E. simmonsii* leaves, Achamore, May 1981 (K).
**Microthyrium ciliatum* Gremmen & Kam var. *ciliatum*
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI).
**M. ciliatum* Gremmen & Kam var. *hederae* J. P. Ellis
Gigha: On *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI).

- **Microthyrium ilicinum* de Not.
Arran: On *Quercus suber* leaves, Brodick Castle, Sept. 1980 (K). Gigha: On *Q. ilex* leaves, Achamore, May 1981 (K).
- **M. cf. inconspicuum* J. P. Ellis
Arran: On *Hedera helix* leaves, Kingscross Point, Sept. 1980 (K).
- **M. lauri* Höhnel
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (K). Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **M. versicolor* (Desm.) Höhnel
Arran: On *Rubus fruticosus* agg. stem, Clauchan Glen, Sept. 1980 (IMI).
- M. sp.*
Arran: On *Hedera helix* leaves, Merkland Point, Sept. 1980 (IMI).
- M. sp.*
Arran: On *Eucalyptus cf. mitchelliana* leaves and seed capsules, Brodick Castle, Sept. 1980 (IMI). Gigha: On *E. simmondsii* leaf, Achamore, May 1981 (IMI).
- Morenoina rhododendri* J. P. Ellis
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI, teleomorph and anamorph). See Kirk (1982b).
- M. sp.*
Arran: On *Athyrium felix-femina*, Brodick, June 1982 (K).
- Stomiopeltis cupressicola* J. P. Ellis
Gigha: On conifer (*Cupressaceae*) twig, Achamore, May 1981 (IMI).
- S. pinastri* (Fuckel) von Arx
Arran: On *Pinus sylvestris* needles, Clauchan Glen, Sept. 1980 (IMI).
- **Trichothyria pinophylla* (Höhnel) Petrak
Arran: On conifer needle, Brodick Castle, Sept. 1980 (IMI). Recorded from Coll, Rhum and Skye.

DEUTEROMYCETES

- Acrogenospora* state of *Farlowiella carmichaeliana* (Berk.) Sacc.
Arran: On *Pinus* sp. wood, Brodick Castle, Sept. 1980 (IMI); on rotten wood, Merkland Point, Sept. 1980 (K).
- **Actinocladium rhodosporum* Ehrenb.
Arran: On *Corylus avellana* wood and *Rhododendron ponticum* twig, Merkland Point, Sept. 1980 (IMI); on *Acer pseudoplatanus* wood, Brodick Castle, Sept. 1980 (K); on *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI). Gigha: On *Myrica gale* bark, Leim to Ardlamey, May 1981. Recorded from Rhum and Skye.
- Actinonema rosae* Fr.
Arran: On cultivated *Rosa* sp., Brodick, Sept. 1981 (K).
- Actinothyrium graminis* Kunze
Arran: On dead grass culms, Goat Fell (Boyd 1913); on *Agrostis* sp., Brodick, June 1982 (K). Kintyre: On *Molinia* sp., Glen Lussa, Sept. 1980 (K).
- Aegerita candida* Pers.:Fr.
Gigha: On *Pteridium aquilinum*, Rubha Cairn Bhain, Sept. 1980 (K).
- **Ampulliferina lauri* P. M. Kirk
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- **Anungitea continua* Matsushima
Arran: On *Pinus sylvestris* needle, Brodick Castle, Sept. 1980. See Kirk (1983a).
- **A. fragilis* B. Sutton
Arran: On *Ilex pernyi* leaves and *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **A. heterospora* P. M. Kirk
Gigha: On *Pseudowintera colorata* leaves, Achamore, May 1981 (IMI). See Kirk (1983a).
- **Arthrimum arundinis* (Corda) Dyko & B. Sutton state of *Apiospora montagnei* Sacc.
Arran: On *Ammophila arenaria*, Brodick, Sept. 1981 (K). Gigha: On *Arundinaria* sp. culms, Achamore, May 1981 (K).
- **A. phaeospermum* (Corda) M. B. Ellis
Arran: On *Arundinaria* sp. stems, Brodick Castle, Sept. 1980 (K); on *Phragmites australis* stems, Kildonan Point, Sept. 1980 (IMI); on *P. australis* culms, Kildonan, Sept. 1981 (K). Kintyre: On *Ammophila arenaria* rhizomes, Machrihanish dunes, Sept. 1980 (K). Recorded from Rhum as *Papularia sphaerosperma* (Pers.) Höhnel, and Skye.
- **Ascochyta galeopsidis* A. L. Sm. & Ramsb.
Arran: On *Galeopsis tetrahit* leaves, Machrie Bay, Aug. 1913 (Boyd, 1915).
- A. leptospora* (Trail) Hara
Gigha: On *Poa* sp., Achamore, May 1981 (K).
- **A. leptospora* (Trail) Hara var. *major* Punith.
Arran: On *Molinia coerulea*, Glen Cloy track, Sept. 1981 (K).

- **Ascochyta mercurialis* Bres.
Arran: On *Mercurialis perennis* leaves (Smith & Ramsbottom 1920).
- **A. mercurialis* Bres. var. *autumnalis* (sic)
Arran: On *Mercurialis perennis*, Glen Easdale near Whiting Bay, Aug. 1913, *D. A. Boyd* (K).
- **A. vulgaris* (Desm.) Lambotte & Fautrey
Arran: On *Lonicera periclymenum*, Whiting Bay, Aug 1920, *D. A. Boyd* (K).
- **A. vulgaris* Kabat & Bubak var. *symphoricarpi* Grove
Arran: On *Symphoricarpus racemosus* leaves, Whiting Bay, Aug, 1920, *D. A. Boyd* (K). See Grove (1922).
- **Asteroma coryli* (Fuckel) B. Sutton
Arran: On *Corylus avellana*, Kilbride (Boyd 1913 as *Septoria avellanae* Berk. & Broome).
- **A. prunellae* Purt.
Arran: On *Prunella vulgaris*, Corriegills (Boyd 1913).
- Bactridium flavum* Kunze
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- **Bactrodesmium pallidum* M. B. Ellis
Arran: On *Fraxinus* sp., Holy Isle, June 1982 (K).
- **Belemnospora epiphylla* P. M. Kirk
Arran: On *Rhododendron ponticum* leaf, Merkland Point, Sept. 1980 (IMI). Gigha: On *R. sinogrande* × *macabeanum* leaves, Achamore, May 1981 (IMI).
- **B. verruculosa* P. M. Kirk
Arran: On *Phragmites australis* stem, Kildonan Point, Sept. 1980 (IMI). See p. 577.
- **Bloxamia leucophthalma* (Lév.) Höhnelt
Gigha: On effete perithecia on *Tilia* sp., Achamore, May 1981 (K).
- Botrytis cinerea* Pers. agg.
Arran: On *Corylus avellana* cupule, Pirmill and *Digitalis atropurpurea* stem, Ballarie, Sept. 1980; on *Rubus fruticosus* agg. fruits, Brodick, Sept. 1981.
- B. globosa* Raabe
Arran: On *Allium ursinum*, Corriegills, June 1982 (K).
- **B. polyblastis* Dowson state of *Sclerotinia polyblastis* Gregory
Gigha: On *Narcissus* sp. flowers, Achamore, May 1981 (K).
- Brachysporium britannicum* S. Hughes
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- B. obovatum* (Berk.) Sacc.
Arran: On rotten wood, Kingscross Point, Sept. 1980.
- **Camposporium hyalinum* Abdullah
Gigha: on *Elaeagnus macrophylla* leaves, Achamore, May, 1981 (IMI).
- **C. pellucidum* (Grove) S. Hughes
Arran: On *Laurus nobilis* leaves and *Urtica dioica* stems, Brodick Castle, Sept. 1980 (IMI); on *U. dioica* stems, Merkland Point, Sept. 1980 (K). Gigha: On *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI). Recorded from Skye. See Kirk (1982b).
- **Candelabrum spinulosum* van Beverwijk
Arran: On *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI); on *Pinus sylvestris* needle, Brodick Castle, Sept. 1980. Gigha: On *Nothofagus dombeyi* leaves and *Rhododendron sinogrande* × *macabeanum* leaves, Achamore, May 1981. Recorded from Skye.
- Cephalotrichum microsporium* (Sacc.) P. M. Kirk
Arran: On herbaceous stem, Pirmill, Sept. 1980 (IMI). Recorded from Mull as *Stysanus microsporus* Sacc. See p.577.
- **Ceratosporella novae-zelandiae* S. Hughes
Arran: On (?) *Pinus* sp. wood, Brodick Castle, Sept. 1980 (IMI).
- Cercospora mercurialis* Pass.
Arran: On *Mercurialis perennis*, Kilbride (Boyd 1913).
- Cercosporidium depressum* (Berk. & Broome) Deighton
Arran: On *Angelica sylvestris*, Kilbride (Boyd 1913 as *Fusicladium depressum*); on *A.* sp. leaf, Lamdash road near Brodick, Sept. 1980 (IMI). Kintyre: On *A. sylvestris* leaves, Glen Breackerie and Saddell, Sept. 1981 (K).
- **C. graminis* (Fuckel) Deighton
Kintyre: On *Glyceria fluitans* leaves, Glen Lussa, Sept. 1980 (K). Recorded from Colonsay (as *Passalora graminis* (Fuckel) Höhnelt), and Rhum.
- Ceuthospora lauri* (Grev.) Grev.
Arran: On *Eucalyptus* sp. leaves, Brodick Castle, *Rhododendron ponticum* leaves, Merkland Point and *Hedera helix* leaves, Kingscross Point, Sept. 1980 (IMI). Gigha: On *E. simmonsii* leaves, Achamore, May 1981.
- **Chaetospermum chaetosporum* (Pat.) G. Sm. & Ramsb.
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- **Chalara affinis* Sacc. & Berl.
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI); on *Pinus sylvestris* needles, Clauchan Glen, Sept. 1980 (IMI); on *Hedera helix* leaves, Kingscross Point, Sept. 1980. Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **C. aurea* (Corda) S. Hughes
Arran: On conifer needle, Brodick Castle, Sept. 1980 (IMI). See p. 580.

- **Chalara cladii* M. B. Ellis state of *Phaeoscypha cladii* (Nag Raj & Kendrick) Spooner
Arran: On *Juncus effusus* stem, Ballarie, Sept. 1980 (IMI). See pp. 574 & 580.
- **C. crassipes* (Preuss) Sacc.
Arran: On *Pinus* sp. cone and conifer needle, Brodick Castle, Sept. 1980 (IMI). See p.581.
- **C. fungorum* (Sacc.) Sacc.
Arran: On *Ilex pernyi* and *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI); on herbaceous stem, Lamlash road near Brodick, Sept. 1980 (K). Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). Recorded from Skye. See Kirk (1982b).
- **C. hughesii* Nag Raj & Kendrick
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Recorded from Colonsay. See Kirk (1982b).
- **C. insignis* (Sacc., Rousseau & E. Bommer) S. Hughes
Arran: On *Eucalyptus coccifera* capsule, Brodick Castle, Sept. 1980 (IMI).
- **C. pteridina* Sydow
Arran: On *Pteridium aquilinum* stem, Clauchan Glen, Sept. 1980 (IMI).
- Chloridium claviforme* (Preuss) W. Gams & Hol.-Jech. state of *Chaetosphaeria myriocarpa* (Fr.) C. Booth
Arran: On *Corylus avellana* wood, Merkland Point, Sept. 1980 (IMI); on rotten wood, Kingscross Point, Sept. 1980 (IMI).
- **C. preussii* W. Gams & Hol.-Jech. state of *Chaetosphaeria preussii* W. Gams & Hol.-Jech.
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- Cladosporium cladosporioides* (Fres.) de Vries
Arran: On wild *Brassica* sp., Kildonan Castle rock, Sept. 1981 (K). Gigha: On *Elaeagnus macrophylla* leaves, Achamore, May 1981.
- **C. echinulatum* (Berk.) de Vries state of *Mycosphaerella dianthi* (Burt.) Jørstad
Kintyre: On *Dianthus* sp., Campbeltown, Sept. 1980 (K).
- C. herbarum* (Pers.) Link
Arran: On *Digitalis atropurpurea* stem and sepals, Ballarie, Sept. 1980; on wild *Brassica* sp., Kildonan Castle rock, Sept. 1981 (K). Gigha: On *Empetrum nigrum*, Sept. 1980 (K).
- [*C. sp.*
see *Mycosphaerella rhododendri* Lindau]
- C. sp.*
Arran: On *Eucalyptus* cf. *mitchelliana* leaves and *E. sp.* leaves and capsules, Brodick Castle, Sept. 1980 (IMI).
- C. sp.*
Arran: On *Leptospermum scoparium* capsules, Brodick Castle, Sept. 1981 (IMI).
- C. sp.*
Arran: On *Rubus fruticosus* agg. stem, Merkland Point, Sept. 1980 (K).
- **Codinaea simplex* S. Hughes & Kendrick
Gigha: On *Laurus nobilis* leaves and *Rhododendron sinogrande* × *macabeum* leaves, Achamore, May 1981 (IMI & K).
- [*C. sp.*
see *Chaetosphaeria callimorpha* (Mont.) Sacc.]
- Coleophoma cylindrospora* (Desm.) Höhnelt
Arran: On *Ilex pernyi* leaves, Brodick Castle, *Hedera helix* leaves, Brodick Castle and Merkland Point, Sept. 1980 (IMI). Gigha: On *Pittosporum tenuifolium* leaves, Achamore, May 1981 (K); on *Embothrium lanceolatum*, leaves, Achamore, May 1981.
- **C. empetri* (Rostr.) Petrak
Arran: On *Eucalyptus* sp. leaves and *Taxus baccata* needles, Brodick Castle and *Rhododendron ponticum* leaves, Merkland Point, Sept. 1980 (IMI). Gigha: On *Laurus nobilis* leaves and *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI).
- Colleotrichum dematium* (Pers.:Fr.) Grove
Arran: On *Digitalis atropurpurea* stem and sepals, Ballarie, Sept. 1980.
- **C. rhodocyclum* (Mont.) Petrak state of *Glomerella phacidomorpha* (Ces.) Petrak
Arran: On *Phormium tenax*, Brodick Castle, Sept. 1981 (K).
- **C. trichellum* (Fr.:Fr.) Duke
Arran: On *Hedera helix* leaves, Kingscross Point, Sept 1980 (K). Gigha: On *H. helix* leaves, north of Mill Loch, May 1981 (K). Recorded from Harris.
- **Coniothyrium boydeanum* A. L. Sm.
Arran: On twigs of *Fuchsia* sp., Lamlash (Boyd 1910); Kilbride (Boyd 1913).
- **C. equiseti* Lamb. & Fautrey
Arran: On *Equisetum marinum*, Whiting Bay (Grove, 1922).
- **C. fückelii* Sacc.
Gigha: On *Elaeagnus macrophylla* leaves, Achamore, May 1981. Recorded from Rhum.
- **Corynespora pruni* (Berk. & M. A. Curtis) M. B. Ellis
Arran: On *Acer pseudoplatanus* bark, Brodick Castle, Sept. 1980 (IMI).
- **Corynesporopsis quercicola* (Borowska) P. M. Kirk
Arran: On *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI). Gigha: On *Olearia macrodonta* bark, Achamore, May 1981 (IMI & K).
- **C. uniseptata* P. M. Kirk
Gigha: On *Laurus nobilis* leaves, Achamore, May 1981 (IMI).

- **Coryneum disciforme* Kunze & Schumacher
Arran: On *Betula* sp. bark, Corriegills (Boyd 1913).
- **Cristulariella depraedans* (Cooke) Höhnelt
Arran: On *Acer pseudoplatanus*, Brodick, Sept. 1981 (K). Gigha: Achamore, Sept. 1980 (K).
Kintyre: Carradale and two miles north of Southend, Sept. 1980 (K). Recorded from Skye.
- **Cryptocoryneum condensatum* (Wallr.) Mason & S. Hughes
Arran: On bark, Merkland Point, Sept. 1980 (K). Recorded from Rhum.
- **C. rilstonii* M. B. Ellis
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- **Cryptosporium neesii* Corda var. *betulinum* Sacc.
Arran: On *Betula* sp. bark, Corriegills (Boyd 1913).
- **Cylindrotrichum clavatum* W. Gams
Gigha: On *Laurus nobilis* leaves and *Olearia macrodonta* leaves, Achamore, May 1981 (IMI).
- **C. oligospermum* Bonorden
Gigha: On *Laurus nobilis* leaves, Achamore, May 1981 (IMI).
- **Cytospora clypeata* Sacc.
Arran: On *Rubus fruticosus* agg. stem, Merkland Point and Lamlash road near Brodick, Sept. 1980 (IMI).
- C. dubyi* Sacc.
Gigha: On *Juniperus communis* twigs, Tarbert, Sept. 1980 (K).
- **C. pruinosa* Sacc. var. *ligustri* Strasser
Arran: On *Ligustrum vulgare*, Lochranza, June 1982 (K).
- **Dactylaria fusiformis* Shearer & Crane
Gigha: On *Élaeagnus macrophylla* leaves, Achamore, May 1981 (IMI).
- **D. junci* M. B. Ellis
Arran: On *Juncus effusus* stem, Ballarie, Sept. 1980 (IMI). See p. 583.
- **D. obtriangularia* Matsushima
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **D. purpurella* (Sacc.) Sacc.
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- Dactylella* sp.
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI).
- [*Dendrostilbella prasinula* Höhnelt
see *Claussenomyces prasinulus* (P. Karsten) Korf & Abawi]
- Dendryphon comosum* Wallr.
Arran: On *Urtica dioica* stem, Merkland Point, Sept. 1980 (IMI); on *U. dioica* stem, Lochranza, Sept. 1980 (K).
- **Dictyosporium folicola* P. M. Kirk
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI). See p. 583.
- **D. toruloides* (Corda) Guéguen
Gigha: On *Laurus nobilis* leaves, Achamore, May 1981 (IMI); on effete perithecia on *Tilia* sp., Achamore, May 1981 (K).
- **Dilophospora alopecuri* (Fr.) Fr.
Arran: On *Agrostis* sp., Brodick and *Holcus* sp., Machrie, June 1982 (K). Recorded from Garvellochs, Lewis, Mingulay and Rhum.
- Dinemasporium strigosum* (Pers.:Fr.) Sacc.
Arran: On *Agrostis* sp. stem, Brodick Castle, Sept. 1980 (IMI); on *Urtica dioica* stem, Lochranza, Sept. 1980 (K); on *Elymus* sp., Brodick and *Molinia* sp., Glen Cloy track, Sept. 1981 (K); on *Juncus* sp., Cock of Arran and on *Agrostis* sp., Brodick, June 1982 (K).
- **Diplococcium lawrencei* B. Sutton
Arran: On *Corylus avellana* wood, Merkland Point and Kingscross Point, Sept. 1980 (IMI). See p. 584.
- **Diplodina acerina* (Pass.) B. Sutton state of *Cryptodiaporthe hystrix* (Tode) Petrak
Arran: On *Acer pseudoplatanus* bark, Machrie Bay (Boyd 1913 as *Septomyxa negundinis* Allesch.) Recorded from Harris as *S. tulasnei* (Sacc.) Höhnelt.
- **D. microsperma* (Johnston) B. Sutton
Arran: On *Salix* sp. twigs, Kilbride (Boyd 1913 as *Discella carbonacea* (Fr.) Berk. & Broome). Recorded from Rhum as *D. carbonacea*, and Skye.
- Diplosporonema delastrei* (Delacr.) Petrak
Arran: On *Silene dioica*, Corriegills, June 1982 (K). Recorded from Mull as *Marssonina delastrei* (Delacr.) Magnus.
- **Discosia strobilina* Lib.
Gigha: On *Laurus nobilis* leaves, Achamore, May 1981 (IMI).
- **D. vagans* de Not.
Arran: On *Rhododendron ponticum* leaves, Merkland Point, Sept. 1980 (IMI).
- **Dothiorella pyrenophora* (P. Karsten) Sacc.
Arran: On *Sorbus aucuparia*, Holy Isle, June 1982 (K).
- **Drechslera siccans* (Drechsler) Shoemaker
Arran: On *Lolium perenne*, Kildonan, Sept. 1981 (K). Kintyre: On *L. perenne* leaves, Southend, Sept. 1980 (K).

- **Endophragmaella arranensis* P. M. Kirk
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI). See p. 585*.
- **E. boothii* (M. B. Ellis) S. Hughes
Arran: On *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI).
- **E. lauri* P. M. & C. M. Kirk
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- **E. uniseptata* (M. B. Ellis) S. Hughes
Arran: On rotten wood and burnt wood of *Ulex europaeus*, Merkland Point, Sept. 1980 (IMI); on *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI); on rotten wood, Clauchan Glen, Sept. 1980.
- Epicoccum nigrum* Link
Arran: On *Agrostis* sp. stem, Brodick Castle, Sept. 1980 (IMI); on *Digitalis atropurpurea* stem and sepals, Ballarie, Sept. 1980 (K). Recorded on Mull as *Epicoccum purpurascens* Ehrenb.
- **Exosporium tiliae* Link
Gigha: On *Tilia* sp. twigs, Achamore, May 1981 (K). Recorded from Rhum.
- [*Fusarium sphaeriae* Fuckel
see *Nectria leptosphaeriae* Niessl]
- **Fusichalara clavatispora* P. M. Kirk
Arran: On *Rubus fruticosus* agg. stem, Clauchan Glen, Sept. 1980 (IMI). See p. 586*.
- Fusidium griseum* Link
Arran: On *Eucalyptus* sp. leaf, Brodick Castle and *Rhododendron ponticum* leaf, Merkland Point, Sept. 1980 (IMI).
- F.* sp.
Gigha: On *Laurus nobilis* leaves, Achamore, May 1981 (IMI).
- [*Gloeosporium paradoxum* (de Not.) Fuckel
see *Trochila craterium* Fr.]
- **G. rhododendri* Briosa & Cavara
Arran: Causing leaf spot on *Rhododendron ponticum*, Brodick, Sept. 1981 (K).
- **Haplariopsis jagicola* Oudem.
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Recorded from Skye. See Kirk (1982b).
- [*Haplographium catenatum* (Preuss) Hol.-Jech.
see *Dematiocypha dematiicola* (Berk. & Broome) Svrček]
- **Helicoma irregulare* P. M. Kirk
Gigha: On *Pseudowintera colorata* leaves, Achamore, May 1981 (IMI). See p. 588*.
- **Helicoon fuscosporum* Linder
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI). See p. 588*.
- **Helicosporium lumbricoides* Sacc.
Arran: On *Dactylis glomerata*, Brodick shore, June 1982 (K).
- Helminthosporium velutinum* Link
Arran: On *Ulex europaeus* twigs, Brodick Castle, June 1981, *I. Fraser* (K).
- **Hemibeltrania mitrata* P. M. Kirk
Gigha: On *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI). See Kirk (1983b).
- **Monacosporium bembicodes* (Drechsler) Subramanian
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI).
- **Monilia* state of *Monilinia johnsonii* (Ell. & Ev.) Honey
Arran: On *Crataegus* sp. leaves, Brodick and Corriegills, June 1982 (K). Gigha: On *Crataegus* sp. leaves, Achamore, May 1981. Kintyre: On *Crataegus* sp. leaves, Tayinloan, May 1981 (K).
- **Monodictys putredinis* (Wallr.) S. Hughes
Arran: On *Corylus avellana* wood, Merkland Point, Sept. 1980 (IMI).
- **Myrothecium atrum* (Desm.) Tulloch
Kintyre: On *Elymus arenarius*, Tayinloan, May 1981 (K). Recorded on Mingulay and Vatersay.
- Mycovellosiella murina* (Ell. & Kell.) Deighton
Arran: On *Viola palustris*, Kilbride (Boyd 1913 as *Cercospora ii* Trail). Recorded from Mull as *Cercospora murina* Ell. & Kell.
- **Myxocyclus polycistis* (Berk.) Sacc.
Arran: On *Betula* sp., Holy Isle, June 1982 (K).
- [*Oidium erysiphoides* Fr.
see *Sphaerotheca humuli* (DC.) Burrill]
- O.* state of *Microsphaera alphitoides* Griff. & Maubl.
Arran: On *Quercus* sp., Brodick, Sept. 1981.
- **O.* state of *Microsphaera lonicerae* (DC.) Winter
Arran: On *Lonicera periclymenum*, Kildonan, Sept. 1981 (K).
- [*O.* state of *Podosphaera clandestina* (Wallr.:Fr.) Lév., q.v.]
- [*O.* state of *Sphaerotheca humuli* (DC.) Burrill, q.v.]
- [*O.* state of *Erysiphe cichoracearum* DC., q.v.]
- [*O.* state of *Erysiphe polygoni*, DC., q.v.]
- **Oramasia hirsuta* Urries
Arran: On *Pinus sylvestris* cone and conifer needle, Brodick Castle, Sept. 1980 (IMI). Gigha:

- On effete perithecia on *Tilia* sp., Achamore, May 1981 (K); on *Quercus ilex* leaf, Achamore, May 1981 (IMI).
- **Ovularia rufibasis* (Berk. & Broome) Masee
Arran: On *Myrica gale*, Kilmory (Boyd 1913).
- Periconia byssoides* Pers.
Arran: On *Urtica dioica* stem, Merkland Point and Lochranza, Sept. 1980 (IMI & K).
- **Phaeoisaria clavulata* (Grove) Mason & S. Hughes
Kintyre: On *Sambucus nigra* wood, Tayinloan, May 1981 (K).
- **Hendersonia culmicola* Sacc. var. *minor* Sacc.
Arran: On *Agrostis* sp., Brodick, June 1982 (K). Recorded from Rhum and N. Uist.
- **H. sarmentorum* Westend. var. *lauri* Cooke
Gigha: On *Laurus nobilis* twigs, Achamore, May 1981 (IMI).
- **Heteroconium tetracoilum* (Corda) M. B. Ellis
Arran: On *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI). Gigha: On effete perithecia on *Tilia* sp., Achamore, May 1981 (K).
- H.* sp.
Gigha: On conifer (*Cupressaceae*) twig, Achamore, May 1981 (IMI).
- Hormomyces* state of *Tremella* sp.
Arran: On *Sambucus nigra* wood, Kingscross Point, Sept. 1980 (K).
- Isariopsis carnea* Oudem.
Arran: On *Lathyrus pratensis*, Brodick, Sept. 1981 (K).
- **Isthmolongispora minima* Matsushima
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- [*Leptostroma filicinum* Fr.:Fr.
see *Rhopoglyphus filicinus* (Fr.) Nitschke]
- Leptothyrium alneum* (Lév.) Sacc. & Roum.
Arran: On *Alnus glutinosus*, Kilbride (Boyd 1913).
- **Kabatia periclymeni* (Desm.) Morelet
Arran: On *Lonicera caprifolium*, Kilbride (Boyd 1913 as *Leptothyrium periclymeni* (Desm.) Sacc.). Recorded from Harris.
- **Mastigosporium rubricosum* (Dearn. & Barth.) Nannf.
Gigha: On *Dactylis glomerata*, Sept. 1980 (K). Kintyre: On *D. glomerata*, Sept. 1980 (K). Recorded from Colonsay, Harris, Rhum and Skye.
- **Marssonina kriegeriana* Magnus
Gigha: On *Salix aurita* leaves, hill east of Tarbert, Sept. 1980 (K). Recorded from Barra and Skye.
- Melanconium bicolor* Nees
Arran: On *Betula* sp. bark, Kilbride (Boyd 1913).
- Melasmia acerina* Lév. state of *Rhytisma acerinum* (Pers.) Fr.
Arran: On *Acer pseudoplatanus*, on Kilmory and Kilbride (Boyd 1913); on *A. pseudoplatanus*, Lamlash and Kingscross Point, Sept. 1980 (K); on *A. pseudoplatanus*, Brodick, Sept. 1981. Kintyre: on *A. pseudoplatanus*, Saddell, Sept. 1980 (K).
- **M. empetri* Magnus state of *Rhytisma empetri* (Wrangel:Fr.) Fr.
Arran: On *Empetrum nigrum*, peaks of the Castles at 2500 ft., west of Goat Fell, May 1920 (Wilson 1921). Recorded from Rhum.
- M. salicina* Lév. state of *Rhytisma salicinum* (Pers.) Fr.
Arran: On *Salix* sp., Goat Fell (Boyd 1913).
- **Menispora ciliata* Corda
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- **Phaeostalagmus tenuissimus* (Corda) W. Gams
Arran: On *Quercus suber* leaves, Brodick Castle, Sept. 1980 (IMI).
- **Phloeospora aceris* (Lib.) Sacc.
Arran: On *Acer pseudoplatanus*, Kilmory and Kilbride (Boyd 1913).
- P. aegopodii* (Preuss) Grove
Arran: On *Aegopodium podagraria*, Brodick, Sept. 1981 (K). Kintyre: On *A. podagraria* leaves, Campbeltown and Tarbert, Sept. 1980 (K).
- **Phoma* cf. *ammophilae* Durieu & Mont.
Arran: On *Ammophila arenaria*, Brodick golf course, Sept. 1981 (K). Recorded from Harris.
- [*P. acuta* Fr.
see *Leptosphaeria acuta* (Fr.) P. Karsten]
- P. complanata* Desm.
Arran: On *Oenanthe crocata*, Brodick, June 1982 (K).
- **P.* cf. *elymi* Rostr.
Arran: On *Elymus* sp., Brodick golf course, Sept. 1981 (K).
- P. hedericola* (Durieu & Mont.) Boerema
Arran: On *Hedera helix*, Kildonan, Sept. 1981 (K). Kintyre: On *H. helix* leaves, Killean, Sept. 1980 (K). Recorded from Mull as *Phyllosticta hedericola* Durieu & Mont.
- P. herbarum* Westend.
Arran: On *Urtica dioica* stem, Clauchan Glen and Lochranza, Sept. 1980 (K).
- **Phomopsis cordylines* Ponnappa
Arran: On *Cordyline australis* leaves, Brodick Castle, Sept. 1980 (IMI).

- **Phomopsis* cf. *corni* (Sacc.) Traverso
Gigha: On *Griselinia* sp. leaves, Achamore, May 1981 (K).
[*P. laurella* (Sacc.) Traverso
see *Diaporthe nobilis* Sacc. & Speg.]
- **P. padina* (Sacc.) Died.
Arran: On *Prunus padus*, Whiting Bay, June 1919 (Grove 1930).
[*P. pulla* (Sacc.) Trav.
see *Diaporthe pulla* Nitschke]
- P. sp.*
Gigha: On *Embothrium lanceolatum* leaves, Achamore, May 1981.
- P. sp.*
Arran: On *Triglochin maritimum*, Brodick beach, Sept. 1981 (K).
- **Phragmocephala elliptica* (Berk. & Broome) S. Hughes
Arran: On *Laurus nobilis* leaves, Brodick Castle and herbaceous stems, Kildonan Point, Sept. 1980 (IMI). Gigha: On *L. nobilis* leaves and *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **Phyllosticta aegopodii* Allescher
Gigha: On *Aegopodium podagraria* leaves, Sept. 1980 (K). Kintyre: On *A. podagraria* leaves, Kilchenzie, Sept. 1980 (K).
- **P. ajugae* Sacc. & Speg.
Kintyre: Carradale, July 1911, *D. A. Boyd* (K).
- **P. cordylines* Chowdhury
Arran: On *Cordyline australis* leaves, Brodick Castle, Sept. 1980 (IMI).
- **P. mercurialis* Desm.
Arran: On fading leaves of *Mercurialis perennis*, Kilbride (Boyd 1913).
- **P. sambuci* Desm.
Arran: On *Alnus glutinosus*, Kilmory and Kilbride (Boyd, 1913). Recorded from Skye.
- **P. valerianae* A. L. Sm. & Ramsb.
Arran: On leaves of *Valeriana officinalis*, Glen Easdale near Whiting Bay, Aug. 1913 (Boyd 1915).
- Pilidium acerinum* Kunze
Arran: On *Eucalyptus* cf. *mitchelliana* leaves and *E. sp.* leaves, Brodick Castle, Sept. 1980 (IMI).
- Placosphaeria junci* Bubak state of *Sclerotinia curreyana* (Berk.) P. Karsten
Arran: On *Juncus* sp., Goat Fell, Sept. 1981.
- Pleurophragmium parvisporum* (Preuss) Hol.-Jech.
Arran: On *Urtica dioica* stem, Merkland Point, Sept. 1980 (IMI). Recorded from Mull as *Pleurophragmium simplex* (Berk. & Broome) S. Hughes
- P. sp.*
Arran: On *Urtica dioica* stem, Lochranza, Sept. 1980 (K).
- **Pleurotheciopsis pusilla* B. Sutton
Gigha: On *Nothofagus dombeyi* leaves, Achamore, May 1981.
- Polyscytium secundissimum* Riess
Arran: On *Corylus avellana* leaves, Kingscross Point, Sept. 1980 (K).
- **P. gracilisporum* (Matsushima) B. Sutton & Hodges
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- P. hareae* (B. Sutton) P. M. Kirk
Arran: On *Eucalyptus* cf. *mitchelliana* leaves, *E. sp.* leaves and capsules, *Ilex pernyi* leaves and *Pinus sylvestris* cone, Brodick Castle, Sept. 1980 (IMI).
- P. truncatum* B. Sutton & Hodges
Arran: On *Eucalyptus* cf. *mitchelliana* leaves and *E. sp.* leaves and capsules, Brodick Castle, Sept. 1980 (IMI).
- P. sp.*
Arran: On conifer needle, Brodick Castle, Sept. 1980 (IMI).
- [*Polythrincium trifolii* Kunze
see *Mycosphaerella killianii* Petrak]
- **Prosthemia stellare* Riess
Arran: On dead bark of *Alnus glutinosus*, Whiting Bay, June 1919, *D. A. Boyd* (K).
- **Pseudomicradochium aciculare* B. Sutton
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **Pseudospiropes obclavatus* M. B. Ellis
Arran: On *Corylus avellana* wood, *Rhododendron ponticum* twig and *Rubus fruticosus* agg. stem, Merkland Point, Sept. 1980 (IMI & K); On *Corylus avellana* wood, Kingscross Point and rotten wood, Clauchan Glen, Sept. 1980 (IMI). Recorded from Skye.
- **P. simplex* (Kunze) M. B. Ellis
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).
- **P. subuliferus* (Corda) M. B. Ellis
Gigha: On *Olearia macrodonta* leaves, Achamore, May 1981 (IMI).
- **Pterygosporopsis rhododendri* P. M. Kirk
Arran: On *Rhododendron ponticum* leaves, Merkland Point, Sept. 1980 (IMI). See p. 589.

- Pycnostysanus azaleae* (Peck) Mason
Arran: On *Rhododendron ponticum* buds, Brodick Castle, Sept. 1981 (K).
- Ramularia ajugae* Niessl.
Arran: On *Ajuga chamaepitys*, Kilbride (Boyd 1913).
- **R. angelicae* Höhnelt
Arran: On *Angelica sylvestris*, Glen Easdale near Whiting Bay, Aug. 1913 (Smith & Ramsbottom 1915). Recorded from Eigg.
- **R. calthae* (Erikss.) Lindr.
Arran: On *Caltha palustris*, Drumadoon near Blackwaterfoot, June 1982 (K). Recorded on Lewis, Lismore, Rhum and Tiree.
- R. didyma* Unger
Arran: On *Ranunculus repens*, Kilmory and Kilbride (Boyd 1913 as *Didymaria didyma* (Unger) Schröter). Gigha: On *R. repens* leaves, Achamore, May 1981 (K). Kintyre: On *R. sp.* leaves, road to Southend, Sept. 1980 (K). Recorded on Mull as *Ramularia ranunculi* Peck.
- R. heraclei* Sacc.
Arran: On *Heracleum lanatum*, Kilmory and Kilbride (Boyd 1913).
- **R. knautiae* (Massal.) Bubak
Arran: On *Succisa pratensis*, Kilmory and Kilbride (Boyd 1913). Recorded on Eigg.
- **R. montana* Speg.
Arran: On *Epilobium montanum*, Kilbride (Boyd 1913).
- **R. plantaginea* Sacc. & Berl.
Arran: On *Plantago lanceolata*, Kilmory and Kilbride (Boyd 1913). Recorded from Barra, Coll, Colonsay, Harris and Tiree.
- **R. pratensis* Sacc.
Arran: On *Rumex acetosa*, Kildonan, Sept. 1981. Gigha: On *R. acetosa*, Sept. 1980 (K). Kintyre: On *R. acetosa*, Tarbert, Sept. 1980 (K). Recorded from Coll, Colonsay, Eigg, Garvelloch, Islay, Lewis, Rhum, Skye and Vatersay.
- R. primulana* P. Karsten
Gigha: On *Primula vulgaris* leaves, north of the island, Sept. 1980 (K) and May 1981 (K). Kintyre: On *P. vulgaris* leaves, Killean, Sept. 1980 (K). Recorded on Mull as *Ovularia primulana* (P. Karsten) Sacc.
- R. rubella* (Bonorden) Nannf.
Arran: On *Rumex obtusifolius*, Kilmory and Kilbride (Boyd 1913 as *Ovularia obliqua* (Cooke) Oudem.); on *R. sp.*, Brodick, Sept. 1981 (K). Gigha: On *R. sp.*, Achamore, Sept. 1980 (K). Kintyre: On *R. sp.*, Tarbert, Sept. 1980 (K). Recorded on Mull as *O. obliqua*.
- R. senecionis* (Berk. & Broome) Sacc.
Arran: On *Senecio jacobaea*, Corrie, Sept. 1981 (K). Kintyre: On *S. jacobaea* leaves, Tarbert and Crossibeg, Sept. 1980 (K). Recorded on Mull as *Ramularia pruinosa* Speg.
- R. sphaeroidea* Sacc.
Arran: On *Lotus uliginosus*, Kilbride (Boyd 1913 as *Ovularia sphaeroidea* (Sacc.) Sacc.); on *L. uliginosus*, Brodick, Sept. 1981 (K). Kintyre: On *L. uliginosus* leaves, Glen Breackerie, Sept. 1980 (K). Recorded on Mull as *O. sphaeroidea*.
- **R. taraxaci* P. Karsten
Kintyre: On *Taraxacum sp.* leaves, Kilkerran, Sept. 1980 (K). Recorded from Coll, Colonsay, Lewis and Rhum.
- **R. ulmariae* Cooke
Kintyre: On *Filipendula ulmaria* leaves, Southend, Sept. 1980 (K).
- **R. urticae* Ces.
Arran: On *Urtica dioica*, Kilmory (Boyd, 1913).
- R. variabilis* Fuckel
Arran: On *Digitaria atropurpurea*, Kilmory and Kilbride (Boyd 1913).
- R. violae* Fuckel
Arran: On *Viola riviniana*, Kilmory and Kilbride (Boyd 1913). Recorded on Mull as *Ramularia lactea* (Desm.) Sacc.
- **Readeriella mirabilis* H. & P. Sydow
Arran: On *Eucalyptus cf. mitchelliana* and *E. sp.* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *E. simmondsii* leaves, Achamore, May 1981 (IMI).
- **Rhexoampullifera fagi* (M. B. Ellis) P. M. & C. M. Kirk
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- [*Sclerotium roseum* Kneiff
see *Sclerotinia curreyana* (Berk.) P. Karsten]
- S. state of Claviceps purpurea* (Fr.:Fr.) Tul.
Arran: (Boyd 1901 as *Sclerotium clavus* DC.); on various grasses and cereals, Kilmory and Kilbride (Boyd 1913); on *Ammophila sp.*, Brodick, on *Lolium perenne*, Kildonan, Sept. 1981 (K).
- **Scolecotrichum stricticum* (Berk. & Broome) Sacc.
Arran: On *Glyceria fluitans*, Kilbride (Boyd 1913).
- Seimatosporium lichenicola* (Corda) Shoemaker & E. Müller state of *Clathridium corticola* (Fuckel) Shoemaker & E. Müller
Gigha: On *Rosa sherardii*, Sept. 1980 (K).

- Sepedonium chrysospermum* (Bull.) Fr. state of *Apiocrea chrysosperma* (Tul.) Sydow
Arran: On rotten *Boletus chrysenteron*, Clauchan Glen, Sept. 1980.
- **Septoria brissaceana* Sacc. & Lettau
Arran: On leaves of *Lythrum salicaria*, Whiting Bay, Aug. 1913, D. A. Boyd (K). See Boyd (1916).
- **S. ficariae* Desm.
Arran: On *Ranunculus ficaria* leaves, Whiting Bay, June 1919, D. A. Boyd (K).
- **S. hyperici* Desm.
Arran: On *Hypericum tetrapterum*, Kilmory and Kilbride (Boyd 1913).
- **S. leontodontis* A. L. Sm. & Ramsb.
Arran: On leaves of *Leontodon autumnale*, Machrie Bay, Aug. 1913 (Boyd 1916).
- **S. lycopi* Pass.
Arran: *Lycopus europaeus*, Glen Easdale near Whiting Bay, Aug. 1913, D. A. Boyd (K). See Boyd (1913).
- **S. myricae* Trail
Arran: On *Myrica gale* leaves, Machrie Bay, Aug. 1913, D. A. Boyd (K). See Boyd (1913).
- **S. podagrariae* Lasch
Arran: On *Aegopodium podagraria*, Kilbride (Boyd 1913).
- S. polygonorum* Desm.
Kintyre: On *Polygonum persicaria* leaves, Kilkerran, Sept. 1980 (K). Recorded on Mull as *Septoria polygonorum* Desm. var. *persicaria* Trail.
- **S. quevillensis* Sacc.
Arran: On *Filipendula ulmaria*, Kilbride (Boyd 1913).
- S. scabiosicola* Desm.
Arran: On *Succisa pratensis*, Kilmory (Boyd 1913).
- **S. smithiana* Trotter
Arran: On leaves of *Bromus mollis*, Machrie Bay, Aug. 1913 (Boyd 1916 as *Septoria bromicola* A. L. Sm. & Ramsb.).
- S. tormentillae* Desm. & Roberge
Arran: On *Potentilla erecta*, Kilbride (Boyd 1913).
- S. virgaureae* Desm.
Arran: On *Solidago virgaurea*, Machrie Bay, 1913, D. A. Boyd (K). See Boyd (1913).
- **Sesquicillium cf. microsporum* (Japp) Veenbaas-Rijks & W. Gams
Arran: On *Dasyscyphus* sp. on *Lonicera* sp. stem, Kingscross Point, Sept. 1980 (IMI).
[*Sirothyriella* state of *Morenoina rhododendri* J. P. Ellis
see *Morenoina rhododendri* J. P. Ellis]
- S. sp.*
Arran: On *Agrostis* sp. stem, Brodick Castle, Sept. 1980 (IMI).
- S. sp.*
Arran: On *Phragmites australis* stem, Kildonan Point, Sept. 1980 (IMI).
- S. sp.*
Arran: On living leaves of *Rhododendron ponticum*, Brodick Castle, June 1982 (K).
- Sphaerellopsis filum* (Biv.-Bern.:Fr.) B. Sutton state of *Eudarlucacaris* (Fr.) Eriksson
Arran: Parasitic on *Puccinia oblonga*, Kilbride (Boyd 1913 as *Darlucacaris filum* (Biv.-Bern.:Fr.) Castagne); on *P. reconditia*, Kildonan, Sept. 1981 (K). Gigha: On *P. coronata*, Sept. 1980 (K).
- **Sphaeridium candidum* Fuckel
Arran: On *Pinus sylvestris* needle, Clauchan Glen, Sept. 1980 (IMI). Recorded from Rhum (Minter 1980).
- **Sporidesmiella hyalosperma* (Corda) P. M. Kirk
Arran: On *Rubus fruticosus* agg. stem, on roadside, Lamlash, Sept. 1980 (IMI); on *Juncus* sp. stem, Lochranza and rotten wood and bark, Merkland Point, Sept. 1980 (K). Kintyre: On *Sambucus nigra* wood, Tayinloan, May 1981 (K).
- **S. parva* (M. B. Ellis) P. M. Kirk
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1982b).
- **Sporidesmium altum* (Preuss) M. B. Ellis
Arran: On *Sambucus nigra* wood, Dippin, Sept. 1981 (K).
- **S. eupatoriicola* M. B. Ellis
Arran: On herbaceous stem, Kildonan Point, Sept. 1980 (IMI).
- **S. flexum* Matsushima
Gigha: On conifer (*Cupressaceae*) twig, Achamore, May 1981 (IMI). Recently reported from the British Isles on *Thuja plicata* twigs (Abdullah 1980).
- **S. goidanichii* (Rambelli) S. Hughes
Arran: On *Laurus nobilis* leaves and *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *Elaeagnus macrophylla* leaves, *Nothofagus dombeyi* leaves and *Rhododendron sinogrande* × *macabeanum* leaves, Achamore, May 1981 (IMI). Recorded on Mull as *Endophragma alternata* Tubaki & Saito. See Kirk (1982b).
- **S. hormiscioides* Corda
Arran: On *Eucalyptus coccifera* capsule, Brodick Castle, Sept. 1980 (K). See p. 589.
- **Sporoschisma juvenile* Boud.
Arran: On rotten wood, Clauchan Glen, Sept. 1980 (IMI).

- **Stachybotrys socia* (Sacc.) Sacc. state of *Melanopsamma pomiformis* (Pers.:Fr.) Sacc.
Gigha: On *Phormium tenax* leaves, Achamore, May 1981 (K).
- **Stagonospora aquatica* Sacc.
Gigha: On *Scirpus maritimus*, Leim, May 1981 (K).
- **S. arenaria* Sacc.
Arran: On *Elymus arenarius*, Brodick golf course, Sept. 1981 (K).
- **S. caricis* (Oudem.) Sacc.
Arran: On *Phragmites australis* stem, Kildonan Point, Sept. 1980 (IMI).
- S. subseriata* (Desm.) Sacc.
Kintyre: On *Molinia* sp. leaves, Glen Lussa, Sept. 1980 (K).
- S. sp.*
Arran: On *Phragmites australis* stem, Kildonan Point, Sept. 1980 (IMI).
- Stegosporiopsis* sp.
Arran: On *Betula* sp., Holy Isle, June 1982 (K).
- Stilbella* sp.
Arran: On *Rubus fruticosus* agg. stem, Lamlash, Sept. 1980 (IMI).
- Strasseria geniculata* (Berk. & Broome) Höhnel
Arran: On *Ilex pernyi* leaves, *Eucalyptus* cf. *mitchelliana* leaves and *E. sp.* leaves, Brodick Castle and *Pinus sylvestris* needle, Clauchan Glen, Sept. 1980 (IMI).
- **Subulispora britannica* B. Sutton
Arran: On *Laurus nobilis* leaves and *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).
- **S. minima* P. M. Kirk
Gigha: On *Quercus ilex* leaves, Achamore, May 1981 (IMI).
- **Taeniolina scripta* (P. Karsten) P. M. Kirk
Arran: On *Rhododendron ponticum* twig, Merkland Point and *Corylus avellana* wood, Kingscross Point, Sept. 1980 (IMI).
- Tetracladium setigerum* (Grove) Ingold
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI).
- **Tetraposporium ravenelli* (Cooke) S. Hughes
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). See Kirk (1983b).
- **Thysanophora penicillioides* (Roum.) Kendrick
Arran: On *Eucalyptus* sp. leaves and conifer needle, Brodick Castle, Sept. 1980 (IMI).
- **T. taxi* (Schneider) Stolk & Hennebert
Arran: On *Taxus baccata* needles, Brodick Castle, Sept. 1980 (IMI).
- Torula herbarum* (Pers.) Link
Arran: On *Urtica dioica* stem, Brodick Castle and Merkland Point, *Pteridium aquilinum* stem, Clauchan Glen and herbaceous stem, Pirnmill, Sept. 1980 (IMI); on *U. dioica* stem, Clauchan Glen, Sept. 1980 (K). Gigha: On *Iris pseudacorus*, Leim, May 1981 (K).
- **Trichocladium opacum* (Corda) S. Hughes
Arran: On *Urtica dioica* stem, Lochranza, Sept. 1980 (K).
- **Trichoconis lichenicola* D. Hawksw.
Arran: On *Pinus sylvestris* needle, Clauchan Glen, Sept. 1980 (IMI). See p. 591.
- **Trichoderma hamatum* (Bonorden) Bainier
Arran: On rotten wood, Merkland Point, Sept. 1980 (IMI).
- **Tricladium castaneicola* B. Sutton
Arran: On conifer needle, Brodick Castle, Sept. 1980 (IMI). Gigha: On *Laurus nobilis* leaves and *Elaeagnus macrophylla* leaves, Achamore, May 1981 (IMI).
- T. sp.*
Arran: On *Ilex pernyi* leaves, Brodick Castle, Sept. 1980 (IMI).
- Trimmatostroma betulinum* (Corda) S. Hughes
Arran: On dead branches of *Betula* sp., Kilbride (Boyd 1913 as *Coniothecium betulinum* Corda).
- **T. salicis* Corda
Arran: On *Salix* sp., Holy Isle, June 1982 (K). Recorded from Harris and Lewis.
- T. sp.*
Gigha: On conifer (*Cupressaceae*) twig, Achamore, May 1981 (IMI).
- Tripodosporium elegans* Corda
Arran: On *Eucalyptus coccifera* capsule, Brodick Castle, Sept. 1980 (IMI); on herbaceous stem, Lamlash road near Brodick, Sept. 1980 (K).
- **Veronaea botryosa* Cif. & Montem.
Arran: On *Corylus avellana* wood, Kingscross Point and *Rhododendron ponticum* wood, Merkland Point, Sept. 1980 (IMI). Recorded from Skye. See p. 591.
- **Wiesneriomyces javanicus* Koorders
Arran: On *Laurus nobilis* leaves, Brodick Castle, Sept. 1980 (IMI). Gigha: On *L. nobilis* leaves, Achamore, May 1981 (IMI). See Kirk (1982b).

ZYGOMYCETES**MUCORALES***Absidia cylindrospora* Hagem

Arran: Soil from peat bog (Campbell 1938).

Mucor sp.

Arran: Soil from peat bog (Campbell 1938).

Pilobolus kleinii van Tieghem

Arran: On sheep dung, Lochranza and Ballarie, Sept. 1980 (K).

**Piptocephalis lepidula* (Marchal) R. Benjamin

Arran: On *Epilobium angustifolium* stem, Lamlash road near Brodick, Sept. 1980 (K).

**Spinellus fusiger* (Link) van Tieghem

Arran: On *Collybia peronata*, Kingscross Point, Sept. 1980 (IMI). Recorded from Eigg and Skye on *Mycena* sp. and from Rhum. Common on these hosts and presumably overlooked on Mull.

CHYTRIDIALES

Synchytrium aureum Schröter

Arran: On *Thymus drucei*, Glen Rosa, June 1982 (K).

S. mercurialis (Lib.) Fuckel

Arran: Forming galls on *Mercurialis perennis* stems, Kilbride (Boyd, 1913).

**S. taraxaci* de Bary

Kintyre: On *Taraxacum* sp., Tarbert, Sept. 1980 (K).

PERONOSPORALES

Albugo candida (Pers.) Kuntze

Arran: On *Cardamine hirsuta*, Brodick Castle, Sept. 1981 (K). Kintyre: On *Capsella bursa-pastoris*, Campbeltown, Sept. 1980 (K).

Bremia centaureae Sydow

Kintyre: On *Centaurea nigra*, Glen Breackerie, Sept. 1980 (K).

**Peronospora alsinearum* Casp.

Kintyre: On *Stellaria media*, Killean, Sept. 1980 (K). Recorded from Islay.

P. alta Fuckel

Arran: On *Plantago major*, Kilmory (Boyd 1913); on *P. major*, Brodick, Sept. 1981 (K).

**P. calothea* de Bary

Arran: On *Galium aparine*, Kilmory (Boyd 1913).

**P. conglomerata* Fuckel

Kintyre: On *Geranium pusillum*, Killean, Sept. 1980 (K). Previously reported from Great Britain on *G. molle* by Fraymouth (1956). The common downy mildew on *Geranium* is *Plasmopara pusilla* (Unger) Schröter.

**P. cristata* Tranzsch.

Kintyre: On *Meconopsis cambrica*, Tarbert, Sept. 1980 (K).

P. ficariae Tul.

Arran: On *Ranunculus ficaria*, Corriegills, June 1982 (K). Gigha: On *R. ficaria*, road to Achamore, May 1981 (K).

**P. grisea* (Unger) Unger

Gigha: On *Veronica beccabunga*, Mill Loch, May 1981 (K). Kintyre: On *V. beccabunga*, Southend, Sept. 1980 (K). Recorded from Lewis. Probably overlooked on Mull.

**P. oerTELIANA* Kühn

Arran: On *Primula vulgaris*, Brodick (Boyd 1912 as *P. candida* Fuckel); Kilbride (Boyd 1913 as *P. candida*). Recorded from Rhum.

P. ranunculi Gäum.

Arran: On *Ranunculus repens*, Glen Rosa, June 1982 (K).

P. sordida Berk. & Broome

Arran: On *Scrophularia nodosa*, Brodick to Lamlash road, June 1982 (K).

**P. trifoliorum* de Bary

Arran: On *Trifolium hybridum*, *T. medium* and *T. repens*, Kilbride (Boyd, 1913). Recorded from Eigg. This species is restricted to *T. incarnatum* and *T. medium*. The report from other hosts suggests the presence of *P. trifolii-hybride* Gäum. on *T. hybridum* and *P. trifolii-repentis* H. Sydow on *T. repens*.

P. sp.

Gigha: On *Veronica filiformis*, Achamore, May 1981 (K).

**Phytophthora infestans* (Mont.) de Bary

Arran: On *Solanum tuberosum* (Boyd, 1913). Kintyre: Campbeltown, Sept. 1980 (K). Recorded from Coll, Colonsay, Harris, Raassay & Rhum. An obvious omission from the Mull list.

**P.* cf. *cyperi* (Ideta) Ito

Gigha: On *Iris pseudacorus*, Sept. 1980 (K). Recorded from Raassay, Skye and Tiree, and apparently widespread in the western Highlands. The species has not been grown successfully in culture and, as collections lack oogonia, specific identification is uncertain.

Plasmopara nivea (Unger) Schröter

Arran: On *Aegopodium podagraria* and other umbellifers, Kilmory and Kilbride (Boyd 1913).

Gigha: On *Conopodium* sp., Achamore, May 1981 (K). Recorded from Mull on *Angelica silvestris* and *Oenanthe crocata*.

**Plasmopara pygmaea* (Unger) Schröter

Gigha: On *Anemone nemorosa*, Achamore, May 1981 (K). Surely overlooked on Mull where the host is frequent.

MYXOMYCETES

Amaurochaeta fuliginosa (Sow.) T. Macbride

Arran: On newly felled conifer stump, Brodick (Ing 1970).

Arcyria cinerea (Bull.) Pers.

Arran: On stumps, Brodick (Ing 1970).

A. incarnata (Pers.) Pers.

Arran: On sticks, Brodick (Ing 1970).

A. nutans (Bull.) Grev.

Arran: On *Fagus sylvatica* logs, Brodick (Ing 1970); on rotten wood, Clauchan Glen, Sept. 1980 (K).

Ceratiomyxa fruticulosa (Müller) T. Macbride

Arran: On rotten sticks, Brodick (Ing 1970); on rotten wood, Clauchan Glen, Sept. 1980 (K).

**Comatricha hyperapta* (Meylan) Nann.-Brem.

Arran: On conifer stump, Brodick (Ing 1970).

C. nigra (Pers.) Schröter

Arran: On twigs, Brodick (Ing 1970).

C. typhoides (Bull.) Rostaf.

Arran: On wet rotten wood, Brodick (Ing 1970).

Cribraria argillacea (Pers.) Pers.

Arran: On conifer stump, Brodick (Ing 1970).

C. aurantiaca Schrader

Arran: On conifer wood, Brodick (Ing 1970).

C. cancellata (Batsch) Nann.-Brem.

Arran: On conifer stump, Brodick (Ing 1970); on rotten wood, Clauchan Glen, Sept. 1980 (K).

**C. cancellata* (Batsch) Nann.-Brem. var. *fusca* (Lister) Nann.-Brem.

Arran: On conifer stump, Brodick (Ing 1970).

Didymium clavus (Alb. & Schwein.) Rabenh.

Kintyre: On *Ulex europaeus*, Achinloan, Sept. 1980 (K).

D. difforme (Pers.) Gray

Arran: (Paterson 1876 as *Diderma nitens* Klotsch.)

Enerthenema papillatum (Pers.) Rostak

Arran: On sticks, Brodick (Ing 1970).

Fuligo septica (L.) Wiggers

Arran: Clauchan Glen, Sept. 1980.

F. septica (L.) Wiggers var. *flava* (Pers.) Morgan

Arran: On logs and stumps, Brodick (Ing 1970).

Lycogala epidendrum (L.) Fr.

Arran: On stumps and logs, Brodick (Ing 1970).

Trichia affinis de Bary

Arran: On mossy stump, Brodick (Ing 1970).

T. botrytis (J. F. Gmelin) Pers.

Arran: On conifer twigs, Brodick (Ing 1970); on dead wood, Merkland Point, Sept. 1980 (K).

T. decipiens (Pers.) T. Macbride

Arran: On dead wood, Brodick (Ing 1970).

Tubifera ferruginosa (Batsch) J. F. Gmelin

Arran: On coniferous logs, Brodick (Ing 1970).

Physarum nutans Pers.

Arran: On dead wood, Brodick (Ing 1970).

P. viride (Bull.) Pers.

Arran: On conifer twigs, Brodick (Ing 1970).

Reticularia lycoperdon Bull.

Kintyre: Tayinloan, May 1981 (K).

Stemonitis fusca Roth

Arran: On stumps, Brodick (Ing 1970); on rotten wood and decorticated wood of *Acer pseudo-platanus*, Brodick Castle and Clauchan Glen, Sept. 1980 (K).

ASCOMYCETES

B. M. SPOONER

EUASCOMYCETES

SPHAERIALES

Coniochaeta saccardoi (Marchal) Cain in Univ. Toronto Stud. biol. Ser. 38: 65 (1934).

Hypocopra saccardoi Marchal in Bull. Soc. r. Bot. Belg. 24: 59 (1885).

Perithecia 300–400 μm diam., scattered, solitary, superficial or basally immersed, subglobose to pyriform, black, setose in the upper part and/or around the ostiole. *Setae* straight or frequently curved near the base, dark brown, thick-walled, tapered, apex usually pointed, 20–35 \times 3–6 μm , arising from superficial cells. *Asci* not observed. *Ascospores* 12–17.5 \times 5.5–8.5 \times 4–5.5 μm , dark brown, lacking a mucilaginous sheath, elliptical in face view, flattened and narrowly elliptic in side view, germ slit usually rather obscure, straight, running along the edge of the spore. Fig. 2A.

STRATHCLYDE,* Glasgow, Milngavie, on heather stems, 6 Sept. 1980, Spooner (K); Arran, Merkland Point, on *Pteridium aquilinum* stems, 8 Sept. 1980, Spooner (K); Merkland Point, on rotten wood, 8 Sept. 1980, Kirk 853a (IMI 252652a).

This species, described from rabbit dung in Belgium, has been reported by Cain (1934) on the same substratum from Saskatchewan, and by Kobayasi *et al.* (1969) from Alaska, also on dung. It has not previously been reported from Britain, nor, as far as I am aware, from substrata other than dung. It may be noted, however, that *C. ligniaria* (Grev.) Masee is thought to occur both on dung and on rotten wood.

Unfortunately, the three available British collections are rather scanty and overmature, so that none have yielded asci. The ascospore size and shape differs slightly between the three. The collection from Glasgow has slightly shorter, narrower spores, 12–15 \times 5.5–7 \times 4–4.5 μm , than the other two, though it is not yet clear if the difference is significant.

There is as yet no monograph of *Coniochaeta* and identification of species, many of which are poorly known, presents difficulties. The present collections agree well with the description of *C. saccardoi*, particularly with regard to spore shape and size, the indistinct germ slit, lack of a gelatinous sheath, and the form of the setae, and seems best referred there at present. A number of other taxa, however, must be taken into consideration.

A recent synopsis of the genus by Mahoney & LaFavre (1981) summarises the spore characters of the known species, dividing them into two groups based on spore shape. The majority of species have spores which are broadly elliptic to circular in face view but others, including the present species, have spores narrowly elliptic to fusoid in face view. Eleven in the latter category

**Strathclyde* is the new county comprising most or all of the former shires of Argyll, Ayr, Bute, Dumbarton, Lanark and Renfrew.

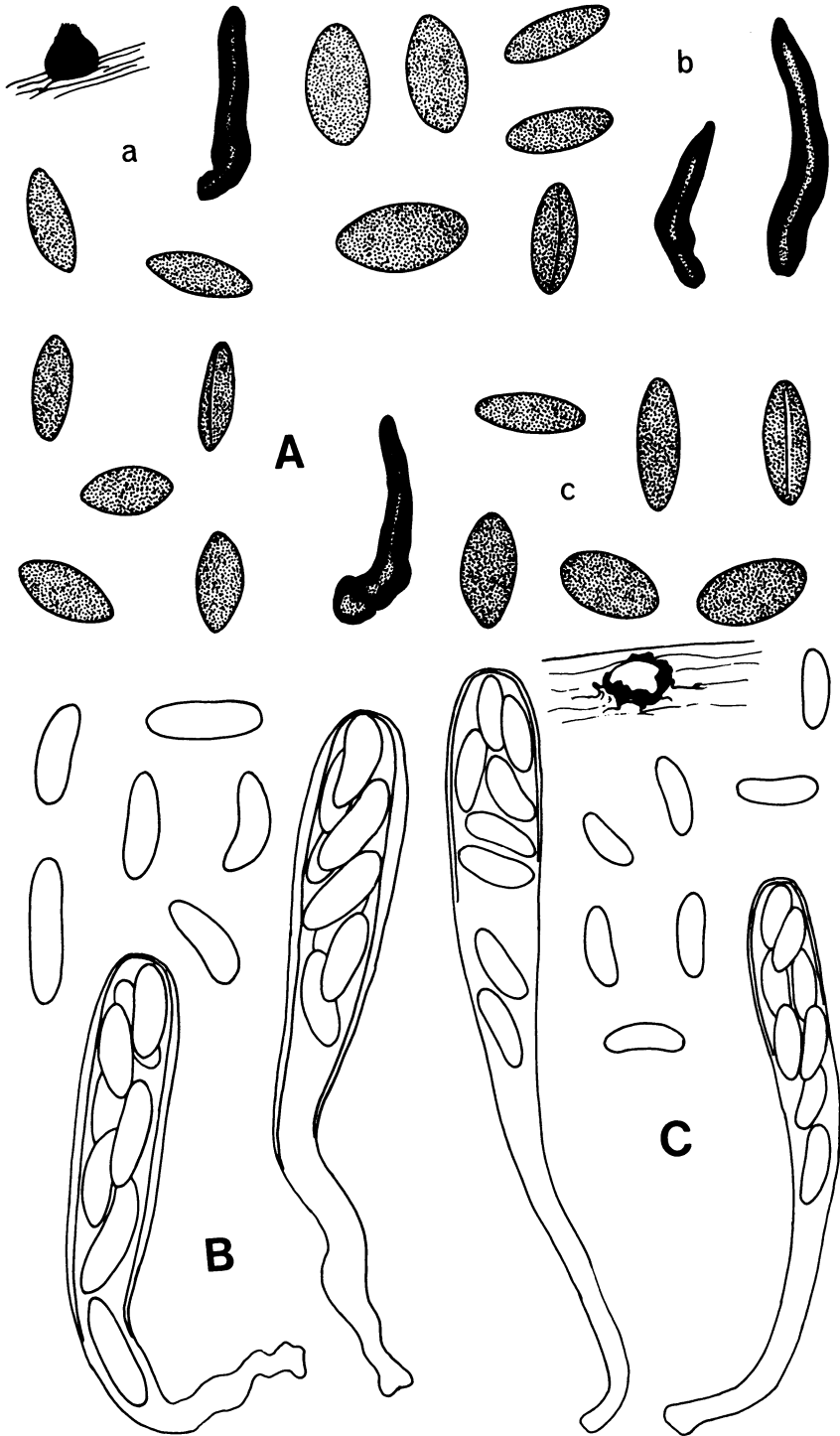


FIG. 2. **A** *Coniochaeta saccardoi* (a *B. M. Spooner* 6 Sept. 1980; b *B. M. Spooner* 8 Sept. 1980; c IMI 252652a). Ascocarp $\times 15$; ascospores and setae $\times 1000$. **B** *Pseudophacidium microspermum*. Asci and ascospores $\times 1000$. **C** *Pseudophacidium ledi* (Petraik's Myc. Gen. 1933). Ascocarp $\times 10$; asci and ascospores $\times 1000$.

were listed by Mahoney & LaFavre but, apart from *C. saccardoi*, only two, *C. elaeidicola* (Henn.) C. & M. Moreau and *Coniochaeta* sp. cf. *Rosellinia xylariispora* Cooke & Ell. teste Munk, have spores within the range of the present collections. In addition to these, *C. angustispora* D. Hawksw. & Yip (1981), having tiny ascomata 85–135 μm diam. and narrowly fusoid, non-flattened spores 12.5–14.5 \times 3–4 μm , and *C. perangusta* Udagawa & Y. Sugiyama (1982) belong to the second group.

Coniochaeta elaeidicola, described in *Rosellinia* by Hennings (1895), occurs on *Elaeis guineensis* Jacq. in tropical Africa and there seems little in its diagnosis to separate it from *C. saccardoi*. The anamorph was described by Moreau & Moreau (1949).

Coniochaeta perangusta was isolated from soil in Nepal and has narrow, slightly flattened spores 12–14 \times 4–4.5 \times 3.5–4 μm . It was suggested by Udagawa & Sugiyama that this may be the same as the unidentified taxon on stems of a *Calluna* compared by Munk (1957) to *Rosellinia xylariispora*. The spores are narrower and less flattened than in the present collections, particularly those from Arran. That from Glasgow, however, as mentioned above, has slightly smaller, narrower spores, and was also on heather. Munk knew of no other pyrenomycete on this host, and it is certainly tempting to link the Glasgow collection with the taxon he was discussing. It is possible that it may prove distinct, both from *C. saccardoi* and probably from *C. perangusta*, but further more abundant collections are required to elucidate its status.

Gnomonia rubi (Rehm) Winter in Rabenh., Kryptfl. Deutsch., Oest. & Schw. 1(2): 586 (1887).

Gnomonia tetraspora Winter var. *rubi* Rehm in Hedwigia 20: 53 (1881).

STRATHCLYDE, Arran, Brodick Castle, on *Rubus fruticosus* agg. stem, 8 Sept. 1980, Spooner (K); Lamash road near Brodick, on *Rubus fruticosus* agg. stem, 9 Sept. 1980, Spooner (K); Merkland Point, on *Rubus fruticosus* agg. stem, 9 Sept. 1980, Kirk 851a (IMI 252650a).

The asci of this species are usually referred to as four-spored. The three collections from Arran, on dead stems of *Rubus fruticosus* agg., however, clearly show the presence of four large and two to four smaller spores in each ascus. Indeed, the small spores are released from the ascus, though it is not clear whether they are functional.

The asci in these collections measure 34–43 \times 6–9 μm . Ascospores are fusoidal, constricted at the central septum, and usually contain a single guttule in each cell near the septum. Larger spores have a setose appendage at each pole, though this is not always clearly observable, and measure 12–14 \times 3–4 μm . Smaller spores measure 6–7 \times 2 μm . Perithecia are scattered or gregarious, without a stroma, and have a stout, conical beak 250–300 μm high, 150–170 μm diam. at the base, protruding through the host epidermis.

Gnomonia rubi has been shown to be a weak parasite, which can also attack species of *Rosa*. It was first reported from Britain, as the cause of a die-back of rambler roses, by Dowson (1925), who also cited a collection on dead bramble shoots from Keswick. He clearly illustrated the asci with four larger and one to four smaller spores in each, and commented on the development of much longer perithecial beaks in culture. This latter character was also

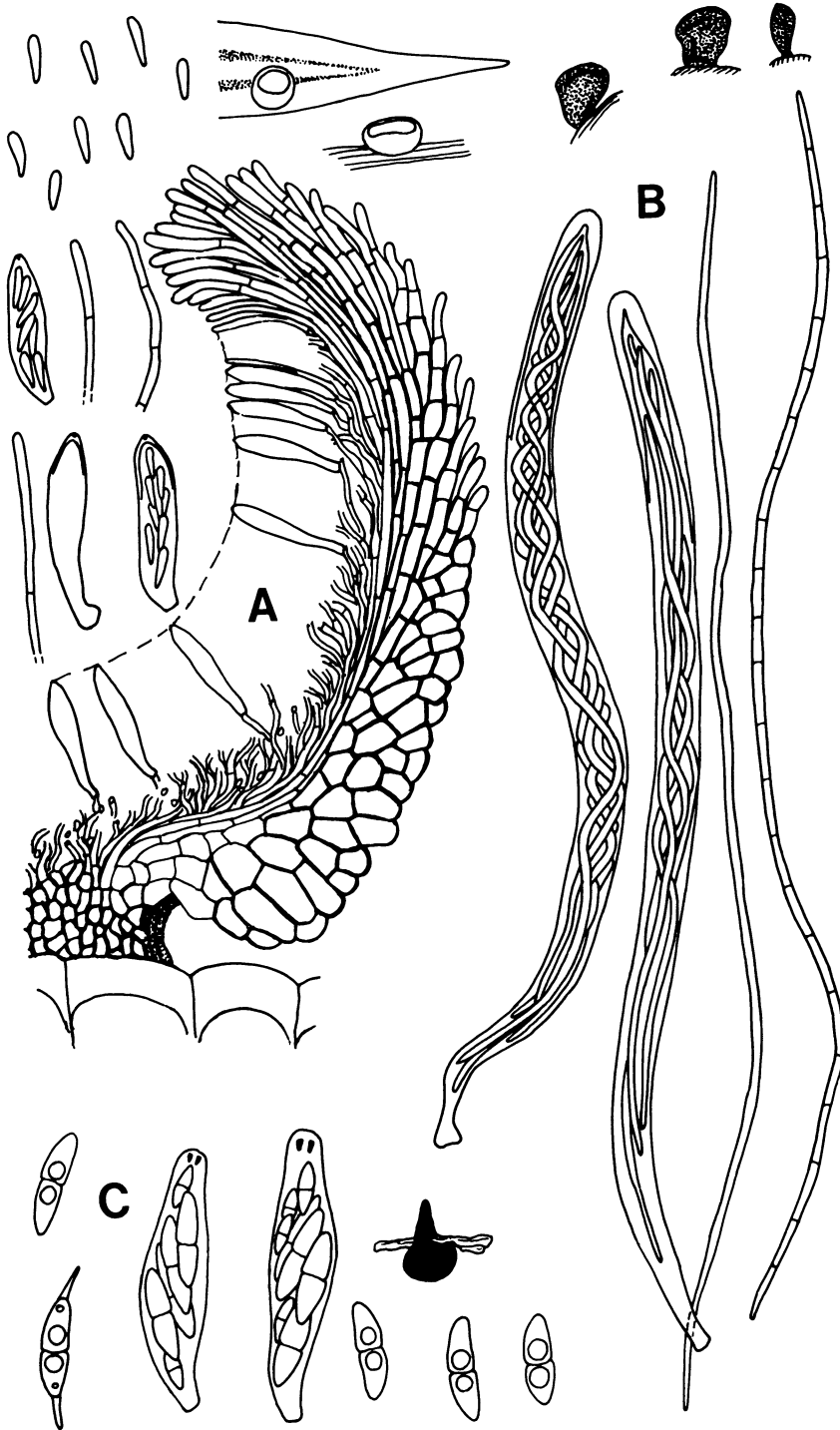


FIG. 3. **A** *Gnomonia rubi*. Ascocarp $\times 18$; asci and ascospores $\times 1000$. **B** *Calycellina juniperina*. Apothecia $\times 25$; vertical section $\times 625$; asci, ascospores and paraphyses $\times 1000$. **C** *Lophium elegans*. Ascocarps $\times 20$; asci and ascospores $\times 625$.

noted by Edgerton (1907), who reported the species as a weak facultative parasite of *Rubus nigrobaccus* L. H. Bailey in New York. He again described the asci as containing four large, and occasionally four small spores. Fig. 3A.

Pseudomassaria lycopodina (*P. Karsten*) von Arx in Müller & von Arx, Beitr. Kryptfl. Schweiz 11, 2: 686 (1962).

Sphaerella lycopodina P. Karsten, Fungi Fenn. Exs. 569 (1866).

Mycosphaerella lycopodina (P. Karsten) Starb., Bihang Kongl. Svenska Vet.-Akad. Handl. 14, Afd. III, 5: 9 (1889).

Pseudapiospora lycopodina (P. Karsten) Holm, Fungi Exs. Suecici 2292 (1954).

? *Sphaeria lycopodii* Berk. & M. A. Curtis in Grevillea 4: 155 (1876) teste Holm & Holm (1981).

Metasphaeria lycopodii (Berk. & M. A. Curtis) Sacc., Syll. Fung. 2: 183 (1883).

Physalospora necans Rehm in Hedwigia 40, Beibl.: 105 (1901).

Pseudapiospora necans (Rehm) Petrak in Annls mycol. 32: 420 (1934).

Pseudomassaria necans (Rehm) von Arx in Ber. Schweiz. bot. Ges. 62: 352 (1952).

Pseudapiospora moravica Petrak in Annls mycol. 29: 356 (1931).

Perithecia 120–200 μm diam., black, subglobose, immersed, minutely papillate, gregarious or scattered. *Asci* not seen. *Ascospores* 16–20 \times 3.5–4 μm , hyaline or yellowish, smooth, narrowly clavate-fusoid, with ends narrowed but rounded, inequilateral or curved, usually becoming 1-septate in lower part, lower cell 4–5.5 μm long. *Paraphyses* not seen. Fig. 4A, p. 553.

STRATHCLYDE, Kintyre, on *Lycopodium clavatum* L., Sept. 1959, A. C. Jermy (K).

Perithecia appear to be restricted, at least in the present collection, to the peduncle, where they occur in swarms, and the peduncular leaves, on which they are less numerous. Unfortunately, I have been unable to find asci in this material, and the above description is, therefore, necessarily brief. Fuller descriptions were supplied by Barr (1964), who has shown the species to be widespread in North America, and by Holm & Holm (1981). According to the latter authors, this is one of the most common of all microfungi on species of *Lycopodium*. It has not, however, been previously reported from the British Isles.

According to Barr (1964), *perithecia* occur on overwintered leaves. That they are also capable of parasitic development, however, is shown by Holm & Holm (1981), who report the presence of *perithecia* on green leaves.

Pseudomassaria lycopodina was described from *Lycopodium complanatum* L. and is now known from several species of *Lycopodium*. The occurrence of the present collection on *L. clavatum* is, nevertheless, of interest. Though reported on this species by Müller & von Arx (1962), it was not reported on this host by Barr (1964), and Holm & Holm (1981) state that, whilst it is common on *L. annotinum* L. and *L. complanatum*, it is not found on *L. clavatum*.

Sydowiella juncina Spooner sp. nov.

Perithecia c. 250 μm diam., immersa, dispersa, haud stromatica, subglobose. Ostiolum centrale, minutum, conicum, immergens. Venter laevis, plerumque pallidus, circa ostiolum fusco-brunneus. *Asci* 75–80 \times 7–11 μm ,

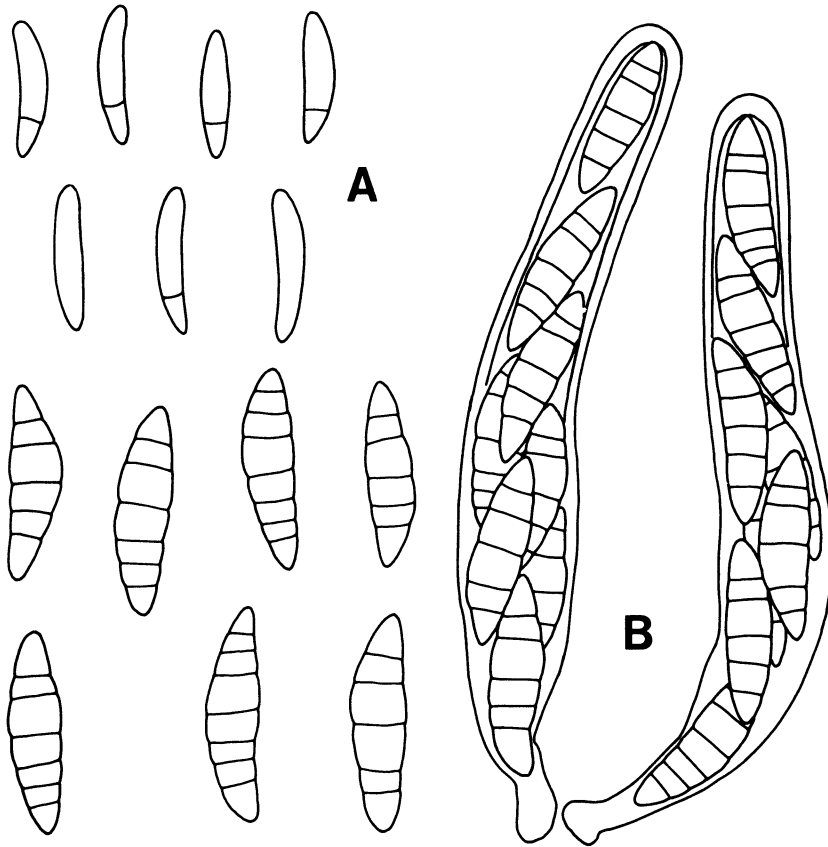


FIG. 4. **A** *Pseudomassaria lycopodina*. Ascospores $\times 1000$. **B** *Dangeardiella fusiforma*. Asci and ascospores $\times 1000$.

8-spori, fusoidei, infra medium apicem rotundatum versus angustati, muro crasso, annulo indistincto, in jodo haud tincti. Ascospori $13.5-16.5 \times 3-3.5 \mu\text{m}$, irregulariter biseriati, hyalini, laeves, cylindrico-fusoidei, recti vel leviter curvati, septo mediano unico, haud constricti, in quoque cellulo guttulis parvis 1-2 visis. Paraphyses copiosae, hyalinae, filiformes, $2-2.5 \mu\text{m}$ diam., guttulis parvis inclusis. Typus: Arran, *Dennis* (holotypus K).

Perithecia c. $250 \mu\text{m}$ diam., immersed, scattered, non-stromatic, subglobose. *Ostiole* central, minute, conical, immergent. *Venter* smooth, pale, becoming dark brown or blackish around the ostiole. *Asci* $75-80 \times 7-11 \mu\text{m}$, 8-spored, fusoid, tapered below to a short stipe, and narrowed from below centre towards a rounded apex, thick-walled, apical apparatus indistinct, not staining in Melzer's reagent. *Ascospores* $13.5-16.5 (-18) \times (2.5-) 3-3.5 \mu\text{m}$, irregularly biseriate, hyaline, smooth, cylindric-fusoid, straight or slightly curved, with 1 median septum, not constricted, each cell containing 1 or 2 guttules. *Paraphyses* abundant, hyaline, filiform, obtuse, slightly narrowed towards the apex, $2-2.5 \mu\text{m}$ diam., containing small scattered guttules. Fig. 5A.

STRATHCLYDE, Arran, Cock of Arran, on culms of *Juncus effusus* L., 11 June 1982, *Dennis* (holotype K).

The asci are thick-walled as though bitunicate. An apical apparatus, visible under oil immersion as two small, scarcely refractive, non-staining bodies is, nevertheless, present and the species is considered to belong in *Diaporthaceae*. The generic disposition is, perhaps, less clear. The species seems out of place in *Gnomonia* Ces. & de Not., as the perithecia are not beaked and the asci lack the prominent refractive apical ring usual in that genus. Several other genera have spores with a single median septum, but most of these have well-developed stromatic tissue. *Sydowiella* Petrak, therefore, seems the most appropriate genus, and indeed, if one follows Müller & von Arx (1962), the species will key here. The type species, *S. fenestrans* (Duby) Petrak, occurs on herbaceous stems and has scattered perithecia, each with a short well-developed beak. The asci, however, have a distinct apical ring-like thickening. Further, according to Barr (1978), stromatic tissue is present, but the stroma is slight and apparently not always developed.

During the unsuccessful attempt to find a name for the above collection, opportunity was taken to examine type material of *Didymella glacialis* Rehm, described from grass but reported on other hosts, including species of *Juncus*. This species has received little attention since it was described, and the following description may be useful.

***Didymella glacialis* Rehm** in *Hedwigia* 21: 121 (1882).

Ascocarps 300–400 μm diam., immersed, scattered singly or in pairs, non-stromatic, black, smooth, subglobose, with short protruding ostiole. *Asci* 76–93 \times 8.5–10 μm , 8-spored, cylindric-clavate, tapered below and expanded to a small foot, apex rounded or slightly flattened, rather thin-walled. *Ascospores* 14–16 \times 4–4.5 μm , smooth, hyaline, fusoid, ends acutely rounded, centrally 1-septate, constricted at the septum, containing two guttules in each cell; spore arrangement biseriate above, uniseriate below. *Pseudoparaphyses* abundant, hyaline, 1.5–2.5 μm diam., freely anastomosing above. Fig. 5B.

GERMANY, Tyrol, near Toschach-Gletscher, 6200 ft [1860 m], on dead grass leaves, Aug. 1878, *Rehm* (holotype S).

The asci are relatively thin-walled but certainly bitunicate. The species has abundant pseudoparaphyses and 1-septate, hyaline spores and is considered correctly placed in *Didymella* Sacc., as typified by *D. exigua* (Niessl) Sacc. The type material is scanty, with ascocarps confined to one small part of the leaf and scattered amongst those of other fungi, some of which are far more conspicuous.

The ascospores were originally described as 12 \times 3 μm , somewhat smaller than those found, and the asci, similarly, are larger than the 50 \times 9 μm cited by Rehm. The general description, however, matches well, and it is certain that the other fungi on this collection are not those from which the diagnosis was compiled. Barr (1961) reported *D. glacialis* on *Carex* sp., and correctly cited the ascospores as 13.5–16.5 \times 3–4 μm .

A number of similar species of *Didymella* have been described from grasses. Most of these, such as *D. proximella* (P. Karsten) Rehm, have considerably larger spores. *Didymella graminicola* Punith., on *Lolium* sp., has spores 15–18 \times

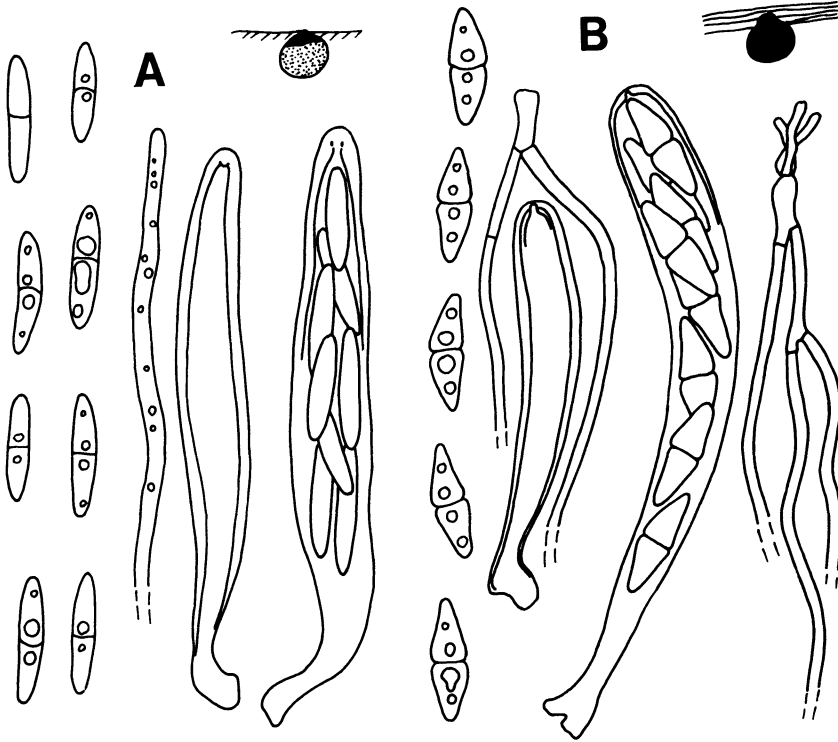


FIG. 5. **A** *Sydowiella juncina* (Holotype). Ascocarp $\times 25$; asci, ascospores and paraphysis $\times 1000$. **B** *Didymella glacialis* (Holotype). Ascocarp $\times 20$; asci, ascospores and paraphyses $\times 1000$.

3–4 μm , but shorter, broader asci 40–50 \times 10–12 μm . *Didymella hebridensis* Dennis is similar but also has larger spores, 17–20 \times 4–6 μm . *Didymella subalpina* Rehm is described as having spores 12–14 \times 5 μm , perhaps broader than those of *D. glacialis*, and smaller ascocarps only 200 μm diam.

Didymella glacialis was reported by Dennis (1964) from Rhum on leaves of *Poa chaixii* Vill. That collection, however, has tiny ascocarps less than 200 μm diam., asci with an apical apparatus strongly blue in Melzer's reagent, and some spores developing 2 or rarely 3 septa. It is referable to *Monographella nivalis* (Schaffnit) E. Müller.

A variety of this species, *D. glacialis* var. *juncicola* Jaap (1914), was described from Switzerland on culms of *Juncus jacquinii* L., in association with *Clathrospora elyanae* Rabenh. Material was distributed in Jaap, Fungi Selecti Exsiccati 514. Unfortunately, the fungus could not be found either on the Kew example of this number or on that borrowed from Stockholm (S), though the *Clathrospora* is abundant and tiny ascocarps of a *Mycosphaerella* also occur. However, undistributed isotype material (Jaap 304), preserved in S, annotated by Jaap and bearing a figure of an ascospore, has yielded ascocarps of this taxon; a few are also present on a further collection, Jaap 306.

Ascocarps are immersed, solitary or in small groups, blackish, 250–300 μm diam.; asci are unitunicate, 8-spored, cylindric, 65–70 \times c. 5 μm , without a visible apical apparatus. Ascospores are uniseriate, hyaline, narrowly ellipsoid, smooth, biguttulate, non-septate, 9–10.5 \times 2.5–3 μm , the paraphyses hyaline, septate, obtuse, exceeding the asci, 2.5–3 μm diam. The

fungus is clearly quite different from *Didymella glacialis*, and is a species of *Phomatospora*, identical with *P. dinemasporium* Webster (1955). This was described from grasses, and shown to be the perfect state of *Dinemasporium strigosum* (Pers.:Fr.) Sacc. (= *D. graminum* (Lib.) Lév.), which is known to occur on many substrata, including species of *Juncus*. According to Webster, no paraphyses were observed in the type material, though structures figured by him (Webster 1955, fig. 5B) without reference could represent paraphyses.

SWITZERLAND, Furkapasshöhe, c. 2430 m, on *Juncus jacquinii*, 3 Aug. 1905, Jaap 304 (Isotype, S), Fungi Selecti Exsiccati 514 (Isotypes, K & S); Riffelalp bei Zermatt, on *Juncus jacquinii*, 27 July 1905, Jaap 306 (S).

PHACIDIALES

Pseudophacidium microspermum Rehm in Rabenh., Kryptfl. Deutsch., Oest. & Schw. 1(3): 97 (1896).

Myxophacidiella microsperma (Rehm) Höhnelt in Sber. Akad. Wiss. Wien, Math.-nat. Kl. 1, 126: 301 (1917).

Ascocarps 1–2 × 0.8–1 mm, immersed, developing and maturing beneath the bark, scarcely erumpent, scattered, elliptical in outline, black. *Disc* at first with a black, convex covering layer, which splits irregularly, pallid when exposed. *Asci* 82–95 × 11–14 μm , 8-spored, clavate, long-tapered at the base, apex broadly rounded, pore not blue in Melzer's reagent, lateral wall 1–1.5 μm thick, thinner at the apex. *Ascospores* 12–16 (–19) × 3.5–4.5 (–5.5) μm , hyaline, cylindrical-ellipsoid, usually inequilateral and often slightly curved, ends rounded, non-septate. *Paraphyses* lacking. *Basal* and *lateral stroma* dark brown, composed of small, rather thick-walled cells, 7–12 μm diam., basal layer 25–50 μm thick. Fig. 2B, p. 549.

STRATHCLYDE, Gigha, Tarbert, on twig of *Salix aurita* L., 12 May 1981, Dennis (K).

Pseudophacidium microspermum has not previously been reported from the British Isles, and is apparently restricted to twigs and small branches of *Salix* spp. The name is synonymised by von Arx & Müller (1954) with *Pseudophacidium ledi* (Alb. & Schwein.:Fr.) P. Karsten, which usually occurs on ericaceous hosts, though reported by Holm & Holm (1977) from a species of *Juniperus*. This synonymy was not adopted by Egger (1968), and seems to be unacceptable. I have examined material of *P. ledi* from the type host (U.S.S.R., Latvia, Riga, Adaži, on *Ledum palustre* L., Apr. 1942, *J. Smarods*, Petrak's Myc. Gen. No. 1933), and illustrate it for comparison (Fig 2C). The ascocarps are circular and strongly erumpent, becoming superficial, the asci have thinner lateral walls and a more truncate apex and the ascospores, though similar in shape to those of *P. microspermum*, are smaller, measuring 9–12 × 3–4 μm .

There is further evidence for the segregation of these taxa, when their respective anamorphs are considered. That of *P. ledi* is generally considered to be *Myxofusicoccum ericeti* (Sacc.) Petrak, with conidia 10–14 × 5–6.5 μm according to Petrak (1921). Petrak took this to be the anamorph of

Pseudophacidium callunae (P. Karsten) P. Karsten, usually regarded as a synonym of *P. ledi*.

The anamorph of *P. microspermum* has apparently not been experimentally demonstrated. However, associated with the ascomata on the present collection are abundant black conidiomata with hyaline conidia $4\text{--}5.5 \times 2\text{--}2.5 \mu\text{m}$, exuding in masses, when rehydrated, which often dry dark-coloured. These appear to be referable to *Discula microsperma* (Berk. & Broome) Sacc. (= *Discella microsperma* Berk. & Broome) which, according to von Höhnelt (1917), is synonymous with *Myxofusicoccum melanotrichum* (Castagne) Höhnelt (= *Naemaspora melanotricha* Castagne, 1851; = *Myxosporium melanotricha* (Castagne) Sacc., 1892). This is the presumed anamorph of *P. microspermum*, and seems certainly distinct from *M. ericeti*.

Should this connection be experimentally confirmed, the species will, of course, be proven distinct from *P. ledi*.

The epithet of *M. melanotricha* apparently refers to the dark colour of the exuded spore mass when dried, a feature also described for *Discula microsperma* by Grove (1937). *Myxofusicoccum microsporium* (Died.) Jaap (= *M. salicis* Died. forma *microspora* Died., 1912) is probably a further synonym.

That *Discula microsperma* is the anamorph of *P. microspermum* was apparently first suggested by Fuckel (1870). He described the perfect state under *Discella* and attempted to transfer that genus to the Ascomycetes as *Discella* (Berk. & Broome) Fuckel. The name *Discella microsperma* forma *ascophora* Fuckel, cited as a synonym of *P. microspermum* by Rehm (1896), von Arx & Müller (1954) and others is, therefore, incorrect.

HELOTIALES

Bisporella scolochloae (de Not.) Spooner comb. nov.

Helotium scolochloae de Not. in Comment. Soc. crittogam. Ital. 1: 379 (1864).

Belonidium scolochloae (de Not.) Sacc., Syll. Fung. 8: 497 (1889).

Calycella scolochloae (de Not.) Dennis in Kew Bull. 19: 117 (1964).

STRATHCLYDE, Arran, Kildonan Point, on culms of *Phragmites* sp., 9 Sept. 1980, Spooner (K). ESSEX, Pleshey, on decaying grass stems, 6 Aug. 1978, M. C. Clark (K).

The species, taken in the sense of Grelet (1950), was described and illustrated by Dennis (1964), who cited two British collections. Apart from the Arran collection, one further British collection, cited above, is preserved in K.

The sessile, bright yellow apothecia occur on culms of large grasses, and are seated directly on the ascocarps or stromatic tissue of *Apiospora* species or their associated *Arthrimum* anamorphs. Such a fungicolous habit is probably frequent in, and perhaps characteristic of, this genus, and was discussed by Korf & Carpenter (1974).

The colour and structure of the present species is typical of *Bisporella* Sacc., to which genus the transfer is here proposed. The species is characterised by the 3-septate ascospores $11\text{--}14 \times 2.5\text{--}3 \mu\text{m}$, and by the substratum.

Bryoscyphus Spooner gen. nov.

Apothecia bryicola, solitaria vel gregaria usque caespitosa, plerumque

brevi-stipitata. Discus planus vel concavus, plus minus brunneus, laevis. Receptaculum cupulatum, concolor vel magis fuscum, plerumque minute tomentellum. Stipes typice brevis, robustus, centralis. Asci clavato-fusoidei, deorsum et apicem truncato-rotundatum versus attenuati, poro in iodo plerumque caeruleo. Ascospori hyalini, laeves, fusoidei, ovoideo-fusoidei vel rhomboidei, 0-1 (-pluri)-septati. Paraphyses filiformes, obtusi, septati, hyalini vel pigmentum granulare includentes. Excipulum ectale argute distinctum, e cellulis subglobosis vel angularibus sistens, muris tenuibus interdum dextrinoideis, marginem versus minoribus seriatim dispositis pilos septatos typice efformantibus. Species typica: **Bryoscyphus conocephali** (= *Helotium marchantiae* (Berk.) Fr. var. *conocephali* Boyd).

Apothecia bryicolous, solitary or gregarious to caespitose, usually short-stipitate. *Disc* plane or concave, some shade of brown, smooth. *Receptacle* cupulate, concolorous or darker, often drying orange- or reddish-brown, minutely downy, margin typically white-fimbriate. *Stipe* central, typically short, stout. *Asci* clavate-fusoid, tapered at the base and towards the truncate-rounded apex, pore usually outlined blue in Melzer's reagent. *Ascospores* hyaline, smooth, fusoid, ovate-fusoid or slightly rhomboidal, 0-1 (-several)-septate, uniseriate or partially biseriate. *Paraphyses* simple, filiform, obtuse, septate, hyaline or containing granular pigment. *Medullary excipulum* composed of slender, hyaline, interwoven hyphae. *Ectal excipulum* sharply delimited, composed of subglobose to angular cells, with thin, sometimes dextrinoid walls, smaller towards the margin and there arranged in upward-curving rows typically forming septate, hair-like processes.

HABITAT. On Bryophyta, apparently parasitic.

The genus is probably closely related to *Hymenoscyphus* Gray, and perhaps also to *Phaeohelotium* Kanouse, though these genera both contain species with a saprophytic habit. From the former it differs further in excipular structure, in the clavate-fusoid asci with rather truncate apices, and the fusoid, frequently rhomboidal ascospores. From the latter it differs particularly in habitat, colour, and form of asci and ascospores.

Bryoscyphus conocephali (Boyd) Spooner comb. & stat. nov.

Helotium marchantiae (Berk.) Fr. var. *conocephali* Boyd in Smith, Trans. Br. mycol. Soc. 3: 113 (1909).

Apothecia erumpent through the areolae, scattered to clustered or caespitose, sessile, orange- or red-brown when dry, paler when rehydrated, 0.8-1.5 mm diam. *Disc* plano-concave, smooth. *Receptacle* cupulate, smooth below, often slightly downy in upper part, the margin downy or whitish-fimbriate, particularly in young apothecia. *Asci* (85-) 112-130 × 9-11 μm, 8-spored, cylindrical-fusoid, tapered below to a short stalk, apex narrowed, truncate-rounded, the pore basally outlined blue in Melzer's reagent. *Ascospores* (13-) 16-21 (-23) × 4.5-6 (-7) μm, hyaline, fusoid to clavate-fusoid or narrowly rhomboidal, usually inequilateral, non-septate or occasionally with one slightly submedian septum, irregularly biseriate. *Paraphyses* simple, filiform, obtuse, equal to the asci, 2.5-3 μm diam. *Medullary excipulum* composed of interwoven, thin-walled hyaline hyphae, 2-2.5 μm diam. *Ectal excipulum* clearly differentiated, up to 40 μm thick, composed of isodiametric,

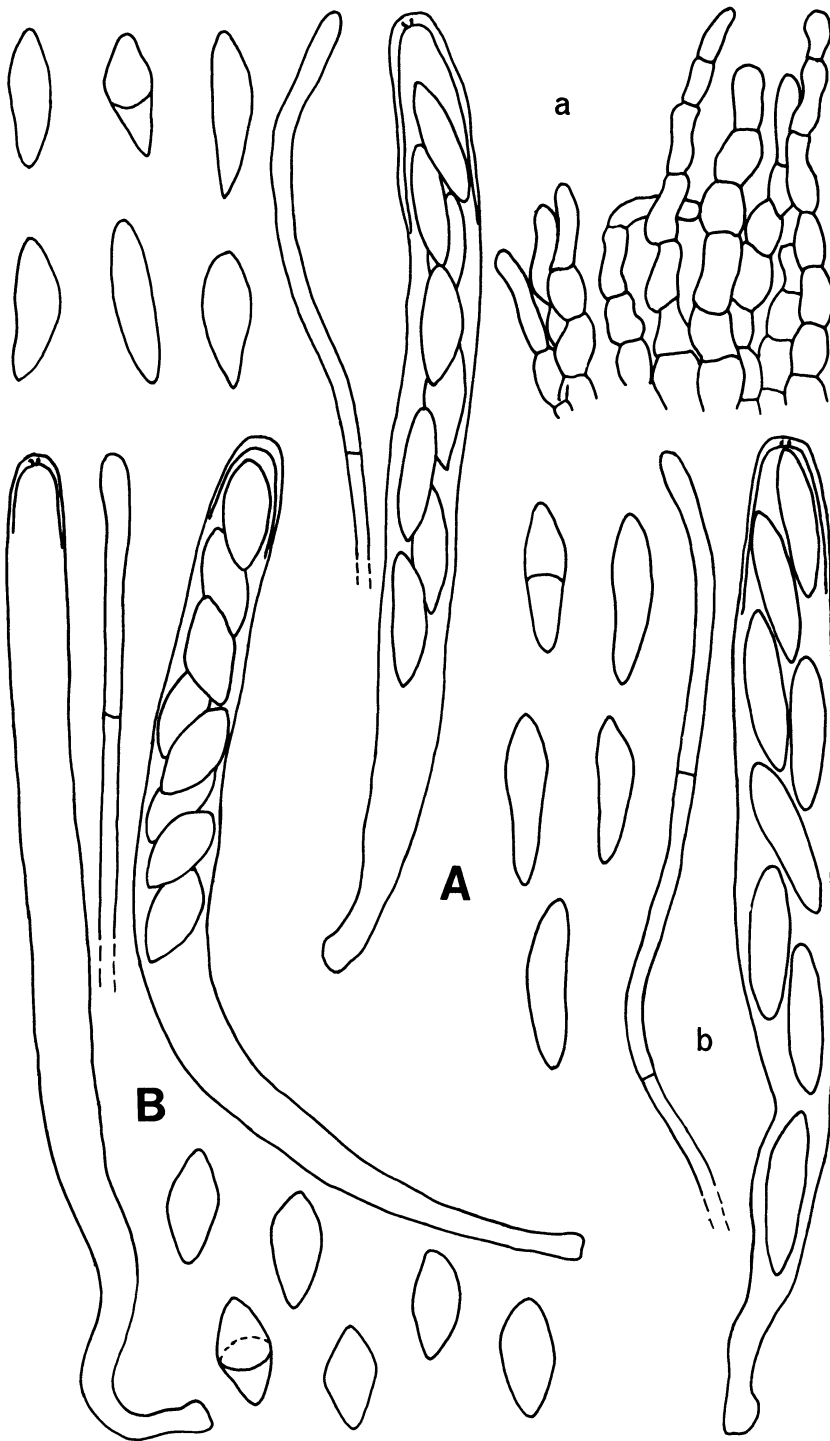


FIG. 6. **A** *Bryoscyphus conocephali* (a Syntype; b E. A. Ellis 4 April 1943). Asci, ascospores and paraphyses $\times 1000$; marginal hairs $\times 625$. **B** *Bryoscyphus marchantiae*. Asci, ascospores and paraphysis $\times 1000$.

subglobose thin-walled cells, 10–15 μm diam. in the lower part, becoming smaller and prismatic towards the margin, 8–12 (–16) \times 5–9 μm , arranged in upward-curving rows, and running out in the upper receptacle and margin as free, multiseptate, hyaline, hair-like processes 30–70 \times 4–9 μm . Fig 6A.

STRATHCLYDE, Saltcoats, on *Conocephalum conicum* (L.) Dum., May 1908, Boyd (presumed syntype, K). NORFOLK, Wheatfen Broad, on *Conocephalum conicum*, 16 Apr. 1942 & 4 Apr. 1943, E. A. Ellis (K).

No holotype was cited for this taxon. The material examined, collected by Boyd in 1908, is presumably part of that upon which his concept of the taxon was based, and is accordingly treated here as a syntype.

This taxon has, since its description, been treated by most authors as synonymous with *Helotium marchantiae*. However, having examined type or authentic material of both taxa I can substantiate Boyd's suggestion that it is distinct, differing in its larger, relatively narrower spores, shorter asci, more clustered apothecia and excipulum composed of smaller, non-dextrinoid cells. Further, the downy, sometimes fimbriate margin appears not to be a character of *H. marchantiae*. Both taxa are certainly congeneric, but sufficiently distinct to be regarded as separate species.

Bryoscyphus marchantiae (Berk.) Spooner comb. nov.

Peziza marchantiae Berk. in Smith, Engl. Fl. 5(2): 204 (1836).

Helotium marchantiae (Berk.) Fr., Summa Veg. Scand.: 356 (1846).

Helotium epiphyllum Fr. var. *marchantiae* (Berk.) P. Karsten, Myc. Fenn. 1: 123 (1871).

Pachydisca marchantiae (Berk.) Boud., Hist. Class. Discom. d'Europe: 94 (1907).

Hymenoscyphus marchantiae (Berk.) Dennis in Persoonia 3: 77 (1964).

Apothecia c. 1.5 mm diam., scattered, shortly stipitate. *Disc* concave, smooth, brown, margin irregular. *Receptacle* cupulate, dull yellowish-brown, smooth, narrowed below to a short, central stipe. *Asci* 140–160 \times 6–10 μm , 8-spored, narrowly cylindric-clavate, long-tapered below, apex narrowed, rounded to truncate, the pore clearly outlined blue in Melzer's reagent. *Ascospores* 12–15.5 \times (5–) 6–7 μm , ovate-ellipsoid to rhomboidal, hyaline, non-septate or occasionally with one sub-median septum, uniseriate. *Paraphyses* simple, obtuse, hyaline or containing brown oily globules, equal to the asci, slightly expanded towards the apex, to c. 3.5 μm diam. *Medullary excipulum* composed of narrow, tightly interwoven hyaline hyphae. *Ectal excipulum* composed of hyaline or slightly pigmented, subglobose or angular, thin-walled cells, mostly 15–20 μm diam. towards the base, staining red-brown in Melzer's reagent. Towards the margin the cells become smaller, forming short-celled hyphae lying at a very low angle to the surface, apparently not terminating in free, hair-like structures. Fig. 6B.

CAMBRIDGESHIRE, Whittlesea Mere, on fading thallus of *Reboulia hemisphaerica* (L.) Raddi, 28 May 1827, Berkeley (holotype K).

The type collection is now in poor condition and extremely scanty, so that characters of the hymenium and excipulum have been very difficult to interpret. Ascospores are present, however, and these are clearly shorter and

relatively broader than those of *B. conocephali*. Asci, though poorly preserved, are longer and more tapered towards the base than in that species, and the margin of the disc is evidently irregular and somewhat crenate but not fimbriate or downy.

The present species seems far less common in Britain, and perhaps elsewhere, than *B. conocephali*, and only the type material has been available for study. It may, however, have been overlooked, as the host has in most texts been incorrectly given as a species of *Marchantia*. The type collection was, in fact, on *Reboulia hemisphaerica* (= *Marchantia hemisphaerica* L.) and not on *Marchantia polymorpha* L., the only British species now assigned to that genus. Whether *Bryoscyphus marchantiae* also occurs on *M. polymorpha* is uncertain. It has been reported from this host, though a German collection, as reported recently by Benkert (1981), has stipitate apothecia with shorter asci (92–122 × 8–9 µm) and narrower spores (10–14 (–16) × 4–4.5 µm) than the holotype. This is also unlike *B. conocephali*, and may represent a distinct species.

Two further species are here assigned to *Bryoscyphus*.

Bryoscyphus dicrani (*Ade & Höhnelt*) *Spoooner* comb. nov.

Helotium dicrani Ade & Höhnelt in Sber. Akad. Wiss. Wien, Math.-nat. Kl. 1, 127: 595 (1918).

Apothecia solitary, scattered or clustered, short-stipitate. *Disc* 1–1.5 mm diam., plane or plano-convex, concave when dry, pale brown. *Receptacle* cupulate, smooth, brownish, slightly darker than the disc, narrowed below into a paler, slightly tapered, stout, stipe-like base. *Asci* 160–180 × 11.5–13 µm, 8-spored, cylindrical-fusoid, long-tapered below, narrowed towards the rounded apex, pore apparently not blue in Melzer's reagent. *Ascospores* 16–24 × 6.5–10 µm, hyaline, broadly fusoid or irregularly rhomboidal, ends narrowed and often pointed, usually more tapered distally, becoming 1–2 (–several)-septate, obliquely uniseriate or irregularly arranged. *Paraphyses* cylindrical, obtuse, remotely septate, equal to the asci, slightly expanded towards the apex, 3.5–6 µm diam., containing golden-yellow granular pigment in the upper part. *Medullary excipulum* composed of thin-walled, hyaline, septate, interwoven hyphae 2–3.5 µm diam., becoming parallel towards the margin and merging with the ectal layer. *Ectal excipulum* composed, in the lower receptacle and stipe, of isodiametric, angular or subglobose, thin-walled, hyaline or pale brown cells 15–25 µm diam., smaller at the surface and occasionally forming cylindrical, obtuse, hair-like structures 6–9 µm diam. In the upper receptacle and towards the margin the cells are smaller and more prismatic, 8–15 × 4–8 µm, arranged in upward curving rows, usually without free tips at the surface. Ectal cells, except at the margin, strongly dextrinoid. Fig 7A.

WEST GERMANY, Karlstal, on *Ceratodon purpureus* (Hedw.) Brid. (Dicranales), 19 Feb. 1973, *H. Itzerott* (K).

I have not seen type material of *Bryoscyphus dicrani*, which was on living shoots of *Paraleucobryum longifolium* (Hedw.) Loeske (= *Dicranum longifolium* Hedw., Dicranales) from Germany, and the description here is based entirely on the collection cited above. The original description, however, is useful and

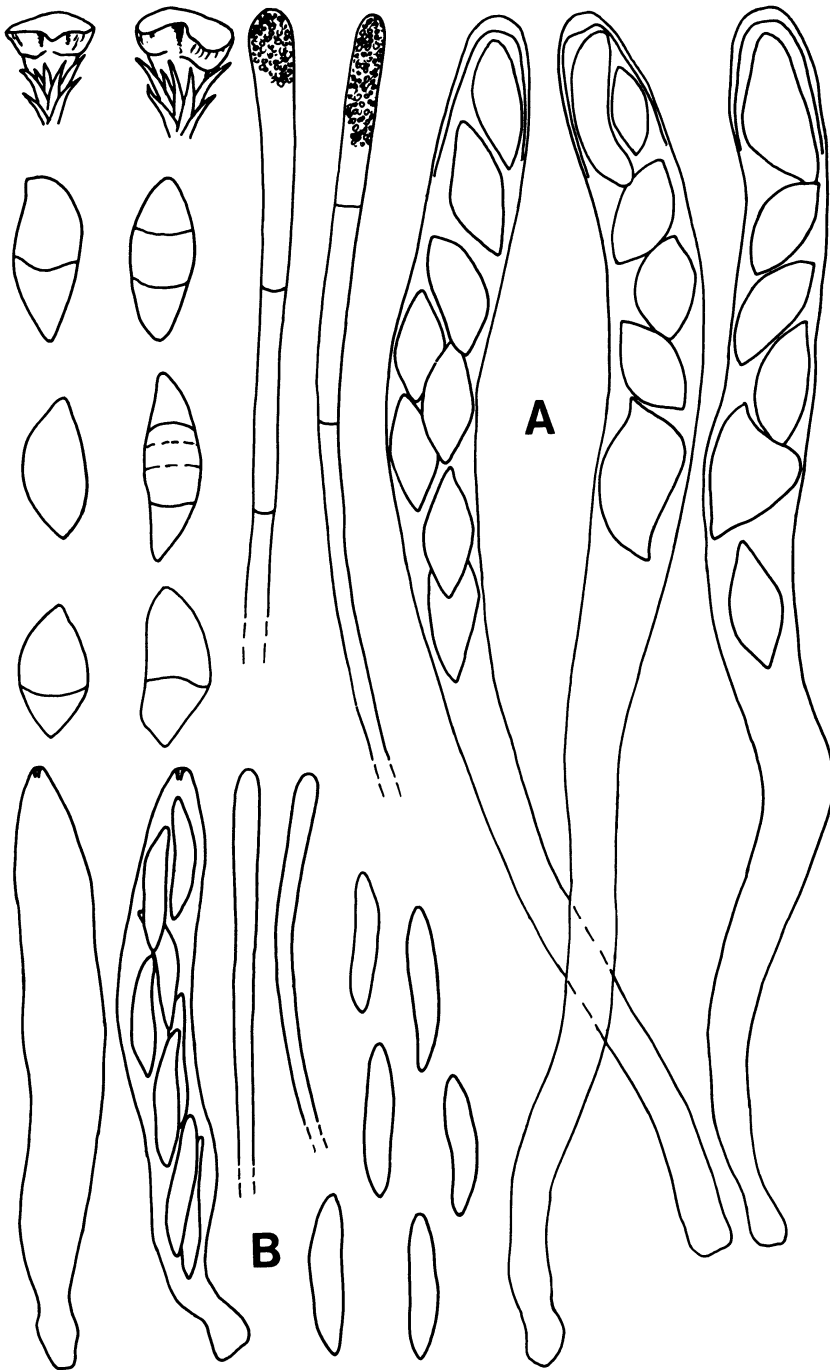


FIG. 7. **A** *Bryoscyphus dicrani* (Itzerott, 19 Feb 1973). Apothecia $\times 8$; asci, two with abnormal spore development, ascospores and paraphyses $\times 1000$. **B** *Bryoscyphus turbinatus* (Rehm Ascomyceten 1279). Asci, ascospores and paraphyses $\times 1000$.

indicates a short-celled excipular structure. The asci are described as having an iodine-negative pore and the spores, though slightly narrower, $17-22 \times 5.5-6 \mu\text{m}$, as finally becoming 1-septate. It seems justifiable, therefore, to apply this name to the present collection.

Despite the absence of an amyloid pore to the ascus, the present species conforms well with the concept of *Bryoscyphus*. The habit, form and structure of the apothecia is typical, as is the shape of asci and ascospores. Many spores have a single, usually submedian septum, but some develop a second septum and a few finally become multiseptate. The spore characters are, in fact, strongly reminiscent of *Sclerotiniaceae*. There is, however, no sign of stromatic development in this or any of the species referred here to *Bryoscyphus* and the genus is consequently placed in *Leotiaceae*.

Helotium fulvum Boud (1897), on small mosses in France, is reported to have similar asci and ascospores, though the description gives no indication of excipular structure. It differs from the present species particularly in having a much longer stipe.

A fungus parasitic on *Dicranella heteromella* (Hedw.) Schimper was reported by Henderson (1972) as '*Helotium*' *dicrani*' (sic). This was illustrated, though not fully described, and is clearly a different species from that considered here. It has a much longer stipe, c. 2 mm long as measured from the illustration, and an excipulum composed of parallel hypae with thickened, glassy walls. It cannot be referred to *Bryoscyphus*, but its correct position is unclear. The structure is similar to that of *Crocicreas* Fr., but species of that genus are saprophytic.

***Bryoscyphus turbinatus* (Fuckel) Spooner comb. nov.**

Leucoloma turbinata Fuckel, Symb. Mycol.: 318 (1870).

Humaria turbinata (Fuckel) Sacc., Syll. Fung. 8: 127 (1889).

Plicaria turbinata (Fuckel) Rehm in Rabenh., Kryptfl. Deutsch., Oest. & Schw. 1(3): 1009 (1894).

Helotium turbinatum (Fuckel) Boud., Hist. Class. Discom. d'Europe: 113 (1907).

Helotium bryogenum Peck, Rep. N.Y. St. Mus. nat. Hist. 30: 61 (1878) teste White (1942).

Belonium bryogenum (Peck) Rehm in Hedwigia 38: 244 (1898).

Calycina bryogena (Peck) Kuntze, Rev. Gen. Pl. 3: 448 (1898).

Apothecia scattered, sessile or short-stipitate. *Disc* concave, c. 0.5 mm diam., pale brown. *Receptacle* cupulate, minutely downy, brownish, darker in upper part, narrowed below, usually into a short, stout stipe. *Asci* $95-102 \times 11-12 \mu\text{m}$, 8-spored, cylindric-clavate, narrowed below to a short stipe, apex conical, pore clearly outlined blue in Melzer's reagent. *Ascospores* $16-22 \times 3.5-4 \mu\text{m}$, hyaline, smooth, non-septate, narrowly cylindric-fusoid, ends usually narrowed, rounded or pointed. *Paraphyses* filiform, obtuse, hyaline, remotely septate, equal to the asci, $2-2.5 \mu\text{m}$ diam. *Subhymenium* not clearly differentiated. *Medullary excipulum* containing pockets of crystalline matter, and composed of interwoven, hyaline, thin-walled, septate hyphae $2.5-3 \mu\text{m}$ diam., running parallel in the flanks and merging with the ectal layer at the margin. *Ectal excipulum* composed of small, thin-walled, isodiametric, angular, pale brown cells $5-8 \mu\text{m}$ diam., not staining in Melzer's reagent. A thin superficial layer of narrow, hyaline, adpressed or interwoven hyphae $1.5-$

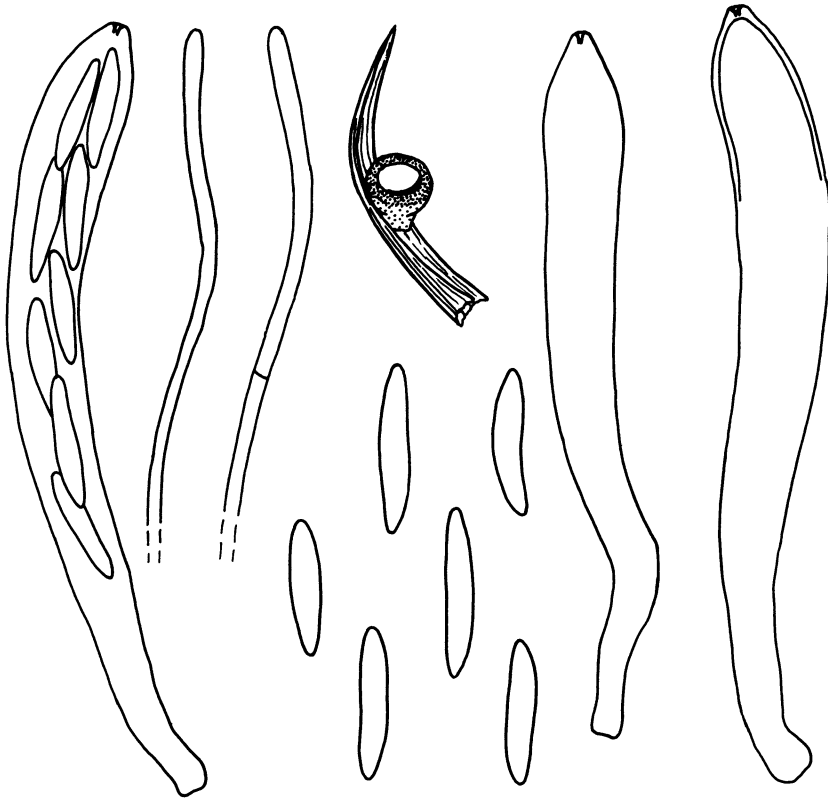


FIG. 8. *Bryoscyphus turbinatus* (Holotype). Apothecium $\times 18$; asci, ascospores and paraphyses $\times 1000$.

2 μm diam. is present throughout, though less developed near the margin. Towards the margin the ectal cells are more irregular and elongated, lying at a high angle to the surface, but curving round and forming parallel hyphae at a low angle to the surface at the margin. Fig. 7B & 8.

GERMANY, Heidelberg, on *Dicranum scoparium* Hedw., autumn, Fockel's Fungi Rhenani 1177 as *Peziza muscorum* Fr. (isotype; K & K ex BM); Saxony, Dahren bei Bautzen, on *Hypnum cupressiforme* Hedw., Feurich, Rehm Ascomyceten 1279 as *Belonium bryogenum* (K).

The original Kew example of the isotype exsiccatum, as noted by Dennis (1956), lacks apothecia. A single apothecium was, however, recovered from the example previously preserved at BM, and the above description is based solely on this. That distributed in Rehm Ascomyceten 1279 is extremely scanty but bears one or two similar, though virtually sessile apothecia with identical ascospores and apparently identical structure. However, the asci are shorter at $78\text{--}84 \times 9\text{--}10 \mu\text{m}$, clavate-fusoid, and tapered towards the apex from slightly above centre with the pore strongly outlined in Melzer's reagent. Further collections are required to determine whether these differences are host-correlated, and whether they have taxonomic significance. The collections are here treated as conspecific. *Bryoscyphus turbinatus* was reported by Fockel from *Polytrichum juniperinum* and *Hypnum* sp., and, accord-

ing to White (1942), occurs on various mosses. It should be noted, however, that the extant isotype material is not, in fact, on a *Polytrichum*, but on *Dicranum scoparium*, a previously unrecorded host. The Rehm exsiccatum is on *Hypnum cupressiforme*, and its occurrence on species of *Polytrichum*, therefore, requires confirmation.

The ascospores of *B. turbinatus* are considerably longer than the $12 \times 4 \mu\text{m}$ cited in the original description, and agree perfectly with the measurements given by White (1942). I have not seen the type of *Helotium bryogenum* Peck, which was examined by White and placed by him in synonymy with *H. turbinatum*.

Helotium polytrichicola Crouan & Crouan occurred on *Polytrichum* sp., but was described as having a cellular excipulum and biguttulate spores. It seems likely to prove an operculate species, referable to *Octospora* Hedw. or *Inermisia* Rifai.

Pezizella cellulosa Velen. (1934), with similarly shaped though smaller spores only 8–12 μm long, and large-celled excipulum, was described from dead moss in Czechoslovakia. It is surely not conspecific with *B. turbinatus*, though may prove congenetic.

Many bryicolous species have been described in *Helotium*, *Hymenoscyphus* or related genera. Whilst it is clear that not all of these belong in *Bryoscyphus*, it is likely that some will prove to do so. From the description, *Hymenoscyphus rhytidadelphus* Svrček seems likely to belong here, and the position of *Hymenoscyphus atlanticus* Candoussau and *Ciboria horakii* Svrček, both with long-stipitate apothecia and cellular basal tissue, requires elucidation.

Further investigation of a number of sphagnicolous species would also be relevant. Amongst these are *Hymenoscyphus sphagnisedus* Svrček, *H. vasaensis* (P. Karsten) Dennis and *H. schimperi* (Nawaschin) Eckblad. The latter has recently been discussed by Redhead & Spicer (1981) who have shown it to be restricted to *Sphagnum squarrosum* Crome, and have transferred it to *Discinella* Boud., arguing that the excipular structure is not consistent with placement in *Hymenoscyphus*. However, the type species of *Discinella*, *D. boudieri* (Quélet) Boud., has a structure quite unlike that of *H. schimperi*, consisting of an ectal layer of narrow, filamentous hyphae as clearly described by Dennis (1956) and Bon (1970). The suggestion by Redhead & Spicer that species of *Discinella* may prove to be parasitic on mosses is, nevertheless, interesting, and was also suggested by Benkert (1981).

Hymenoscyphus vasaensis is closely related to *H. schimperi*, differing in having slightly longer, long-stipitate asci and narrower ascospores, and probably in host specificity. Two collections tentatively referred here by Dennis (1962) apparently differ from *H. schimperi* in having smaller spores, from *H. vasaensis* in having shorter asci and paraphyses lacking brown pigment, and from both in lacking an amyloid reaction to the ascus apex. It may be noted that these collections, with the exception of the latter character, agree remarkably well with the description of *H. sphagnisedus*.

The reported structure and form of all three species is strongly suggestive of *Bryoscyphus* but, as I have not examined relevant material, it would be premature to transfer them to that genus here.

***Calycellina juniperina* (K. & L. Holm) Spooner comb. nov.**

Allophylaria juniperina K. & L. Holm, Symb. bot. upsal. 21(3): 7 (1977).

Apothecia 0.2–0.3 mm diam., scattered, superficial, sessile or virtually so, translucent, greyish. *Disc* concave, smooth. *Receptacle* cupulate, centrally attached, the margin and upper flanks minutely downy. *Asci* 20–27 × 4.5–5 µm, 8-spored, clavate-fusoid, narrowed below, sessile or with a very short, stalk-like base, apex narrowly conical, the small pore distinctly blue in Melzer's reagent. *Ascospores* 5–6.5 × 1.2–1.7 µm, hyaline, narrowly clavate, broadly rounded above, tapered towards the acutely rounded distal end, straight, often slightly inequilateral, non-septate, eguttulate, biseriate or irregularly arranged. *Paraphyses* filiform obtuse, hyaline, 1–2-septate, 1–1.2 µm diam., equal to the asci. *Subhymenium* 10–15 µm thick, composed of small hyaline cells and interwoven, septate hyphae 1–1.5 µm diam. *Medullary excipulum* a narrow zone composed of parallel, hyaline, septate hyphae, 1.5–2 µm diam., with slightly thickened, agglutinated walls, merging towards the margin with the ectal tissue. *Ectal excipulum* c. 30 µm thick in the lower part of the receptacle, narrowing towards the margin, composed of subangular, hyaline cells mostly 9–15 × 4–8 µm with somewhat thickened walls and elongated at right angles to the surface below. Towards the margin the cells become more regularly prismatic and smaller, 7–10 × 3–4 µm, arranged in rows at a lessening angle to the surface, and running out in the upper part of the receptacle and margin as hyaline, thin-walled, obtuse 0–1-septate hair-like structures 10–15 × 2–2.5 µm. Basally, on the surface of the very short stipe-like base, is a narrow layer, 1 or 2 cells thick, of narrowly prismatic brown-walled cells 4–5 × 1.5–2 µm, forming a brown basal ring to the apothecium as viewed from below. Fig. 3B, p. 551.

STRATHCLYDE, Gigha, north of Tarbert, on needles of *Juniperus communis* L., May 1981, Dennis (IMI 260120 & K).

The species was described and illustrated by Holm & Holm (1977), who, with some hesitation, referred it to *Allophylaria* (P. Karsten) P. Karsten on account of 'the glassy excipular structure'. That genus, however, typified by *A. sublicoides* (P. Karsten) P. Karsten, is characterised by an ectal excipulum of parallel hyphae with greatly thickened, glassy walls and, further, by the comparatively very large asci and ascospores. The current species, as noted by its authors, has, in contrast, particularly small asci and ascospores and, moreover, lacks the ectal structure typical of *Allophylaria*.

In the present collection the apothecia are scattered and not abundant, though there can be no doubt as to their identity. The ectal excipulum is cellular towards the base, becoming hyphal near the margin, the cells having somewhat thickened but not stongly glassy walls. The species is, therefore, out of place in *Allophylaria* and, further, the excipular structure is not that of *Crociareas*, nor any other genus with gelatinised tissues. Rather, the small iodine-positive asci, small ascospores, cellular excipulum and brown basal ring seem characteristic of *Calycellina* Höhnelt, as illustrated by Nannfeldt (1932). I do not consider the thickened walls of the excipular cells as of generic significance. The presence of a brown basal ring, though not unique to, is also characteristic of *Calycellina*, many species of which occur on leaves.

***Cistella lagenipilus* Spooner sp. nov.**

Apothecia 150–200 µm diam., gregaria, superficialia, sessilia, albida. *Discus* concavus, laevis. *Receptaculum* cupulatum, minute pilosulum. *Asci*

23–26 × 4.5–5 μm, 8-spore, clavato-fusoidei, sessiles, apice conico, poro minuto in jodo caeruleo. Ascosporei 5.5–7.5 × c. 1.5 μm, hyalini, cylindrico-ellipsoidei, non-septati. Paraphyses filiformes, ramosi, sursum leviter attenuati, obtusi, 1–1.5 μm diam., ascos haud superantes. Excipulum ectale e cellulis parvis hyalinis prismaticis vel angulatis, 7–10 × 4–6 μm. Pili hyalini, obclavati vel lageniformes, obtusi, 18–25 × 3–5.5 μm, muris tenuibus superne grosse granulatis inferne laevibus. Pili marginales non-dextrinoidei, laterales prope apicem praecipue dextrinoidei, muro apicali leviter incrassato laevi. Typus: Arran, *Dennis* (holotypus K).

Apothecia minute, 150–200 μm diam., gregarious, superficial, sessile, whitish throughout. *Disc* concave, smooth, with incurved margin when dry. *Receptacle* shallow cupulate, minutely downy throughout. *Asci* (20–) 23–26 × 4.5–5 μm, 8-spored, clavate-fusoid, sessile, apex narrowed, conical, the minute pore blued in Melzer's reagent. *Ascospores* 5.5–7.5 × c. 1.5 μm, hyaline, cylindric-ellipsoid, straight or slightly curved, non-septate, with two small polar guttules. *Paraphyses* filiform, branched, slightly tapered to a rounded apex, 1–1.5 μm diam., not exceeding the asci. *Ectal excipulum* composed of small, hyaline, prismatic to sub-angular cells 7–10 × 4–6 μm, with thin or slightly thickened walls, giving rise to hairs at the surface. *Hairs* hyaline, lageniform or obclavate to narrowly obpyriform, apex rounded, thin-walled, upper part coarsely granulate, smooth below, 18–25 × 3–5.5 μm. Marginal hairs non-dextrinoid, those on the flanks mostly strongly dextrinoid towards the apex, the wall apically slightly thickened and often smooth, the reaction weaker towards the hair base. Fig. 9A.

STRATHCLYDE, Arran, Holy Isle, 25', on dead leaf tip of *Carex binervis* Sm., 8 June 1982, *Dennis* (holotype K).

This minute discomycete is characterised by branching paraphyses, the shape of the hairs, and the dextrinoid reaction of those on the flanks of the receptacle. The shape of the hairs is rather atypical of *Cistella*, in which the hairs are usually clavate, i.e. broadest near the apex. They are, however, granulate only in the upper part, and, therefore, it would seem that no more appropriate genus is available. The small size of the apothecia, non-lanceolate paraphyses and iodine positive asci are also consistent with *Cistella*.

The marginal hairs in the present species show no dextrinoid reaction in Melzer's reagent, and are uniformly granulate in the upper part. Those on the flanks are mostly strongly dextrinoid at the apex, which appears to have a slightly thickened wall and is usually smooth. The dextrinoid reaction lessens towards the hair base. Granulation is always present though never on the lower part of the hair. Dextrinoid hairs occur in several genera of *Hyaloscyphaceae*, in particular those related to *Hyalopeziza*, which have hairs with thickened, glassy walls, but is not a usual feature of species of *Cistella*.

A number of similar fungi occurring on species of *Carex* and other monocotyledonous genera may be compared. Amongst these, *Cistella caricis* (Raitv.) Raitv. has much larger spores, and *C. graminicola* (Raitv.) Raitv. (= *C. granuloseella* (P. Karsten) Nannf.) has lanceolate paraphyses. *Cistella fugiens* (Bucknall) Raitv. is very similar, but occurs on *Juncus* sp., has smaller asci, and typical clavate hairs. *Hyaloscypha microscopica* Velen., on species of *Carex* and *Eriophorum*, may be closely related, but is described as having smaller, 4-spored asci.

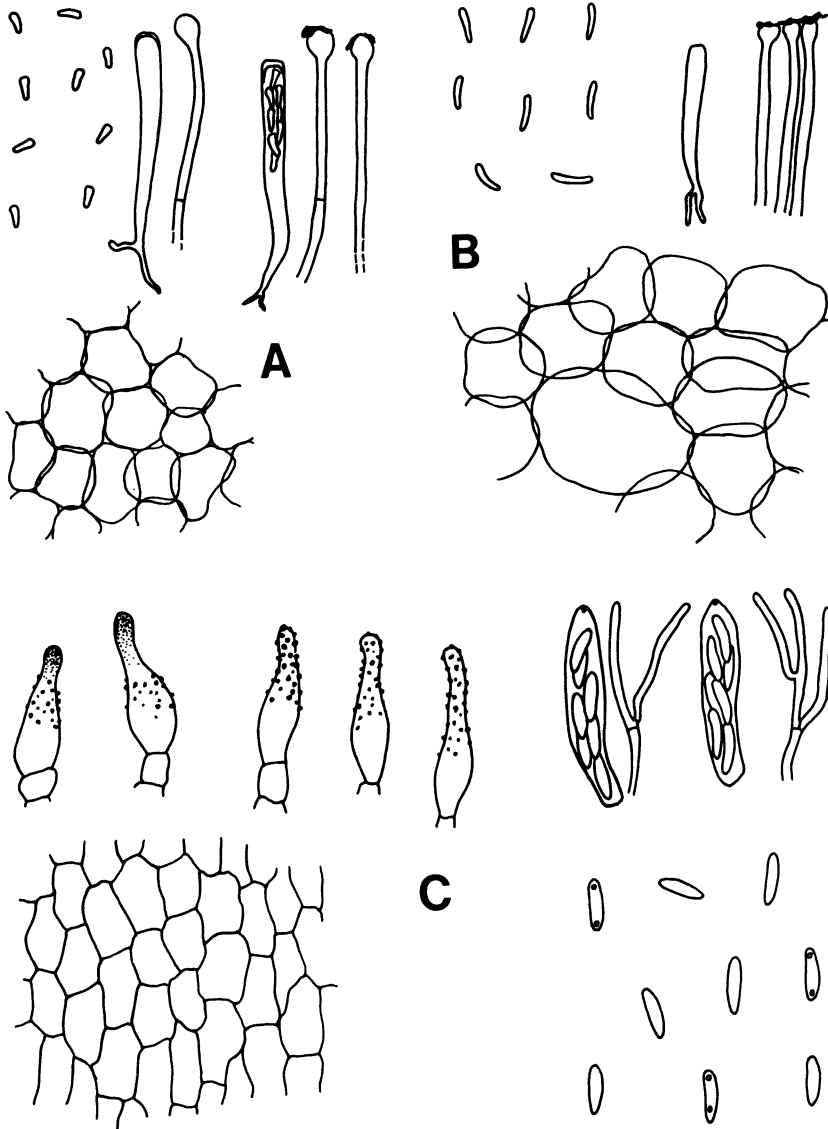


FIG. 9. **A** *Cistella lagenipilus* (Holotype). Asci, ascospores, paraphyses, hairs and excipular cells $\times 1000$. **B** *Orbilia cf. acuum*. Asci, ascospores, paraphyses, and excipular cells $\times 1000$. **C** *Orbilia epipora* (Lundell & Nannfeldt Fungi Exsiccati Suecici 1780). Ascus, ascospores, paraphyses and excipular cells $\times 1000$.

Laetinaevia marina (Boyd) Spooner comb. nov.

Orbilia marina Boyd in Smith, Trans. Br. mycol. Soc. 3: 113 (1909).

Apothecia 250–450 μm diam., gregarious, usually occurring in swarms, erumpent, sessile. *Disc* at first concave or plane, with indistinct low margin and surrounded by irregular torn lobes of host tissue, becoming convex, pale

orange when rehydrated, deeper coloured when dry. *Asci* 50–65 × 6–7 μm , 8-spored, cylindric-clavate, narrowed below to a short stipe, apex narrowed, rounded, the pore rather shallow, outlined blue in Melzer's reagent. *Ascospores* 9–11 (–13) × 2.5–3.5 μm , hyaline, narrowly ellipsoid, often slightly clavate, inequilateral, with 2 small polar guttules, occasionally developing a single median septum, irregularly biseriata or uniseriate below. *Paraphyses* hyaline, slender, remotely septate, often branched, 1–1.5 μm diam., the apices clavate, 2.5–4 μm diam., exceeding the asci and immersed in a hyaline gelatinous matrix forming an epithecium 5–8 μm thick. *Hymenium* 55–70 μm deep. *Basal layer* 20–25 μm thick, subhyaline or very pale brown, composed of small, subangular cells 4–7 × 2–3.5 μm , with slightly thickened, refractive walls. *Ectal excipulum* at the sides of the hymenium basally narrow, 10–12 μm thick, formed of parallel, septate hyphae c. 2 μm diam., flared at the margin to 25–30 μm wide and there composed of broader, thick-walled, agglutinated cells, marginal cells clavate, 8–12 × 4–7 μm . Fig. 10.

STRATHCLYDE, Arran, Brodick, Invercloy, on decaying fronds of *Ascophyllum nodosum* (L.) Le Jol, Apr. 1908, *Boyd* (lectotype K); Ardkinglas, Loch Fyne, on decaying fronds of *Fucus vesiculosus* L., Sept 1907, *Boyd* (K); Stevenson, on decaying fronds of *Ascophyllum nodosum*, Apr. 1908, *Boyd* (K); Ardrossan, on dead and stranded fronds of *Fucus vesiculosus*, 2 Aug. 1912, *Boyd* (K); Adrossan, on stranded fronds of *Fucus* sp., May 1917, *Boyd* (K); unlocalised, on *Fucus vesiculosus*, 1911. GWYNEDD, Anglesea, on undetermined seaweed, 1919, herb. *W. B. Grove* (K).

As noted by Eriksson (1973), the name *Orbilina marina* was first published by Boyd (in Elliott *et al.* 1901) as a nomen nudum. The name was later validly published by Boyd (in Smith 1909), who based the description on a collection from West Kilbride stated to have been sent to Phillips about twenty years previously. Boyd cited the manuscript name *Calloria marina* Phill. but, having changed the genus, should be regarded as sole author of *O. marina*.

Unfortunately, there is now no trace of the material from which Phillips drew up his manuscript description, and it is desirable, therefore, to designate a lectotype. Of the collections cited above there are three, collected prior to 1909 and included in the protologue, from which a lectotype may be selected. The material from Arran, being the most abundant and bearing apothecia in most stages of development is, therefore, designated here as lectotype of *O. marina*.

The tiny orange apothecia of this species bear some resemblance to those of an *Orbilina*, and the paraphyses are similarly clavate at the apex. The excipular structure, however, is quite unlike that of *Orbilina* and, moreover, the apothecia are erumpent, have asci with an iodine positive apical pore and produce some spores with a single, median septum. The species clearly cannot be accommodated in *Orbiliaceae*, though an acceptable generic position is less clear.

The colour, structure and erumpent habit of the apothecia, and ascospore characters suggest a relationship with *Naevioideae* Nannf. The clavate marginal cells and iodine-positive ascus pore are characteristic of several species of *Laetinaevia* Nannf., to which genus it is here tentatively referred. The type

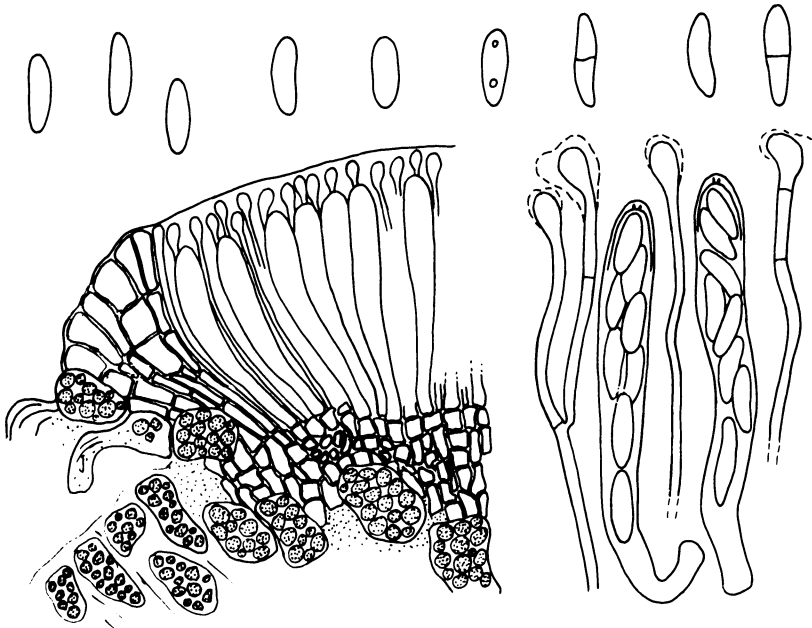


FIG. 10. *Laetinaevia marina* (Lectotype). Vertical section $\times 625$; asci, ascospores and paraphyses $\times 1000$.

species of *Laetinaevia*, *L. lapponica* (Nannf.) Nannf. (= *L. adonis* (Fuckel) Nannf. ex Hein, teste Hein, 1976) occurs on herbaceous stems and has 0–1-septate ascospores but broader, more clavate asci which lack a blue pore in iodine. Other species having the ascus pore blue in iodine are, however, accepted as congeneric by Hein (1976). *Calloria* Fr. is also similar and has narrower asci, but is restricted by Hein to species having asci which lack a blue pore in iodine. *Gloeopeziza* Zukal was also considered as a possible genus for the present species, but apothecia of the type species, *G. rehmi* Zukal, are superficial and associated with bryophytes.

Laetinaevia marina was reported by Boyd from Largs (Strathclyde) and Etterick Bay, Isle of Bute, in addition to the localities cited above, and occurs on fronds of species of *Ascophyllum*, *Fucus* and *Halidrys* washed up and decaying on the shore above the high tide line. Though evidently widespread in the West of Scotland, this species, apart from the single collection from Anglesea, appears to be unknown elsewhere in the British Isles. It has probably been overlooked. Until recently it was known only from the British Isles, but was reported by Eriksson (1973) as widely distributed in Scandinavia on *Ascophyllum nodosum*, *Fucus serratus* L. and *Fucus* sp. According to Eriksson, who discussed and illustrated the species but accepted the position in *Orbilina*, it can be frequently collected and is probably common on these hosts.

For further illustrations of this species see Kohlmeyer & Kohlmeyer (1979).

Lanzia vacini (Velen.) Spooner comb. nov.

Helotium vacini Velen., Nov. Mycol.: 185 (1939).

Stroma substratal, subepidermal, completely surrounding the vascular tis-

sue, visible as a thin black line in section. *Apothecia* scattered, shortly stipitate, erumpent. *Disc* 0.8–2 mm diam., plano-convex, smooth, ochraceous to orange when fresh, slightly darker when dry but pallid when rehydrated. *Receptacle* patelliform, concolorous but with distinct, brown, anastomosing, radial striae, most conspicuous at the margin. *Stipe* central, shorter than the disc diam., tapered, slightly expanded at the base, concolorous above, becoming dark brown to blackish at the base. *Asci* 90–100 × 10–12 μm , 8-spored, cylindric-clavate, tapered below to a short stalk, apex conical, pore outlined blue in Melzer's reagent. *Ascospores* (18–) 20–25 × (3.5–) 4–4.5 (–5.5) μm , hyaline, clavate, proximal end rounded and hooked, distally tapered to a point, straight or slightly curved, smooth, non-ciliate, non-septate, containing two large guttules. *Paraphyses* hyaline, simple, filiform, obtuse, sparsely septate, 1.5–2 μm diam., slightly expanding towards the apex to 3–4 μm diam., equal to or slightly exceeding the asci. *Subhymenium* not clearly differentiated, composed of vertically orientated, hyaline, interwoven hyphae scarcely distinct from those of the medulla. *Medullary excipulum* composed of hyaline, thin-walled, septate hyphae 3.5–5 μm diam., vertically arranged in the stipe, becoming interwoven at the centre of the receptacle, but running parallel in the flanks, merging with the ectal layer towards the margin. At the stipe base narrow, interwoven, very closely compacted hyphae occur. *Ectal excipulum* composed of hyaline, prismatic cells 15–45 × 7–12 μm , shorter and more cuboidal on the stipe, with thin or slightly thickened walls, arranged in chains at a very low angle to the surface, forming a layer up to 60 μm thick at the base of the receptacle, narrowing towards the margin. At the surface of the receptacle, particularly towards the margin, the hyphae become narrow, 3–4 μm diam., having brown walls with pigment deposited as irregular granules, and adpressed, obtuse ends, forming a layer 2–3 cells deep at the margin. At the stipe base, the outermost cells become smaller, 5–8 μm diam., dark brown and thick-walled, forming a layer 15–20 μm thick. Fig. 11.

SUFFOLK, Brandon Park, on leaves of *Acer pseudoplatanus* L., 7 Sept. 1974, B. Coppins (K). GLOUCESTERSHIRE, Chepstow, Parsons Allotment, on fallen leaf of *Acer pseudoplatanus*, 5 Sept. 1977, Spooner (K). STRATHCLYDE, Arran, Kingscross Point, on skeletonised leaves of *Acer pseudoplatanus*, 9 Sept. 1980, Spooner (K).

This attractive species is readily recognised by the orange disc, brown striate receptacle, short stipe and habitat. Though I have not seen type material, the description of *Helotium vacini*, on veins of rotting leaves of *Acer* sp., agrees so closely that I feel justified in taking up this name for the collections cited above.

The apothecia are erumpent through the epidermis of leaf veins and, though the stipe base is blackish, there is no clear stromatic development visible on the substratum surface. Sections clearly reveal, however, the presence of a thin black stroma surrounding the leaf vein beneath the epidermis. This stroma, and the structure of the apothecia, justifies the transfer of this name to *Lanzia* Sacc.

A foliicolous habit is common in *Lanzia*, particularly amongst tropical species, and the dark brown, irregular, granular pigment on the outermost hyphae of the receptacle also seems characteristic of the genus. However, the spore form exhibited by the present species is more familiar in *Hymenoscyphus*

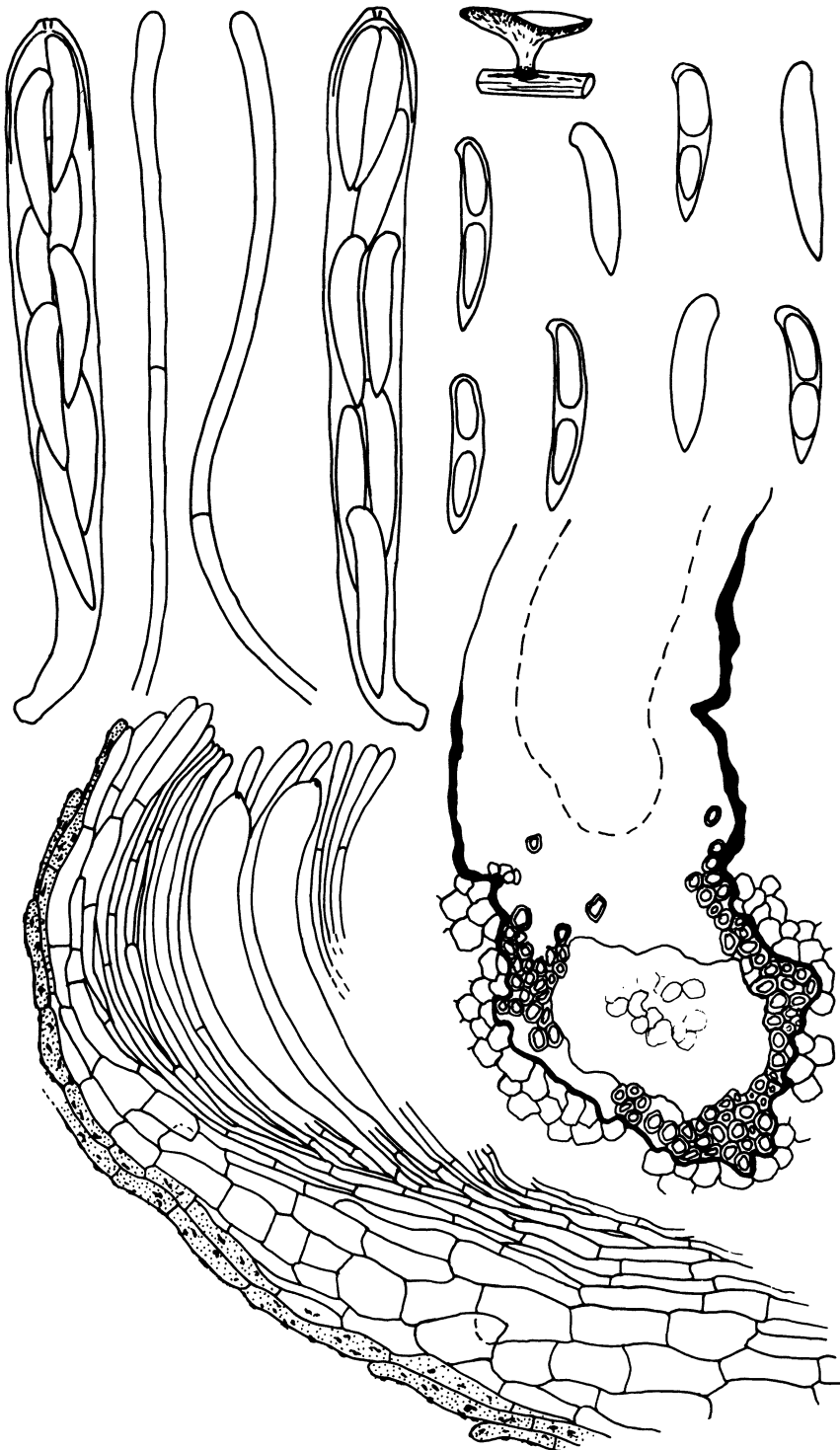


FIG. 11. *Lanzia vacini* (B. C. Coppins, 7 Sept. 1974). Apothecium $\times 8$; vertical section of stipe base showing stroma $\times 140$; vertical section at margin $\times 625$; asci, ascospores and paraphyses $\times 1000$.

Gray, and as far as I am aware is found in no other species of *Lanzia*. Structurally, *Hymenoscyphus* and *Lanzia* prove remarkably similar, and in *H. scutula* (Pers.:Fr.) Phill. the receptacle is frequently striate due to a covering of narrow, though unpigmented, hyphae. Indeed, the present species had been regarded as a variety of *H. scutula* until the stroma was detected. The type species of *Hymenoscyphus*, *H. fructigenus* (Bull.) Gray, has spores of a similar shape, and the genera differ significantly only in the presence or absence of dark stromatic tissue.

A possible close relationship between *Hymenoscyphus* and at least the present species of *Lanzia* is, therefore, suggested. If this were the case the significance of stromatic development and, indeed, the integrity of the family *Sclerotiniaceae*, at least as currently interpreted, may, once again, be open to question.

***Orbilina* cf. *acuum* Velen., Mon. Discom. Bohem.: 94 (1934).**

Apothecia gregarious, superficial, sessile or subsessile. *Disc* 0.3–0.6 mm diam., translucent, pale orange-buff, plano-concave, margin smooth, sometimes incurved when dry. *Receptacle* concolorous, smooth, discoid, broadly attached. *Asci* 26–33 × 2.5–3 µm, 8-spored, cylindric-clavate, narrowly tapered below and sometimes forked at the base, apex broadly rounded or truncate, slightly thickened, pore not blue in Melzer's reagent. *Ascospores* 2.5–3 × 0.8–1 µm, hyaline, cylindric-clavate, straight or slightly curved, slightly broader above, smooth, ends truncate-rounded. *Paraphyses* hyaline, cylindric or sometimes slightly tapered upwards, abruptly enlarged at the apex, apex not or only slightly encrusted, 1–1.5 µm diam., apex 2.5–3.5 µm diam., slightly exceeding the asci. *Ectal excipulum* composed of hyaline or slightly pigmented, subangular, thin-walled cells 6–11 × 4–9 µm. Fig. 9B, p. 568.

STRATHCLYDE, Arran, Merkland Point, near old quay, on decorticated wood, 8 Sept. 1980, Kirk (K).

The identification is tentative as I have not seen the type of *Orbilina acuum*, described from needles of a species of *Pinus*. According to Svrček (1954), who has revised Velenovský's types, it occurs also on wood. He considered it a distinct species, with straight spores 3–4 × 0.8–1 µm, and clavate paraphyses with somewhat encrusted apices. Few other species of *Orbilina* have spores of this size and shape. Amongst these, *O. minutispora* Velen. has lanceolate paraphyses and occurs on herbaceous stems. *Orbilina epipora* (Nyl.) P. Karsten, occurring on rotten wood, is similar, but has larger apothecia 0.5–1 mm diam. and longer, narrower, often slightly curved spores 3.5–5 × 0.6–0.8 µm. The asci are smaller, 22–26 × 2.5 µm, and the paraphyses are more strongly encrusted apically. It is illustrated here for comparison (Fig. 9C).

Orbilina gaillardii Sacc. was also considered as a possible name for the present collection. The type of this species, from Venezuela, is very like the collection from Arran, but has slightly broader spores and asci, and more conspicuously capitate paraphyses which are apparently completely devoid of apical encrustation.

Phaeoscypha *Spooner* gen. nov.

Apothecia gregaria, superficialia, sessilia vel subsessilia, pilosa, socio *Chalara* sp. Excipulum textura prismatica praeditum, brunneum. Pili brunnei, septati, attenuati, saepe curvati. Asci clavati, poro iodo caeruleo-circumscripto. Ascospores ellipsoideae, laeves, pallide brunneae, 1-septatae. Paraphyses filiformes, hyalinae, septatae. Species typica: **Phaeoscypha cladii** (= *Hyaloscypha cladii* Nag Raj & Kendrick).

Apothecia gregarious, superficial, sessile or subsessile, associated with *Chalara* sp. *Receptacle* cupulate, some shade of brown, bearing pale brown hairs. *Asci* typically 8-spored, clavate, apical pore outlined blue in Melzer's reagent. *Ascospores* ellipsoid, smooth, 1-septate, becoming pale brown. *Paraphyses* filiform, hyaline, remotely septate. *Ectal excipulum* composed of prismatic cells with thin, brown walls. *Hairs* arising from superficial cells, brown-walled, septate, tapered towards the apex, typically curved.

HABITAT. Saprophytic, the monotype species on dead stems of *Cladium mariscus* (L.) Pohl.

The genus differs from *Hyaloscypha* Boud. by the brown-walled, septate hairs, brown excipular cells, comparatively large, 1-septate, eventually pale brown ascospores, and association with a *Chalara* anamorph (see p. 580). The genus *Dematioscypha* Svrček (1977) was segregated from *Hyaloscypha* on the basis of brown-walled excipular tissue and associated *Haplographium* anamorph. Apart from the form of the anamorph, it differs from *Phaeoscypha* in having non-septate hairs, hyaline, non-septate ascospores and asci with apical pore not staining in iodine.

Phaeoscypha cladii (Nag Raj & Kendrick) *Spooner* comb. nov.

Hyaloscypha cladii Nag Raj & Kendrick, A monograph of *Chalara* and allied genera: 183 (1975).

NORFOLK, Wheatfen Broad, on dead leaves of *Cladium mariscus*, 14 Jan. 1947, E. A. Ellis (holotype of *Chalara cladii* M. B. Ellis IMI 10171). DORSET, Wareham, Sugar Hill, on dead leaves of *Cladium mariscus*, 26 May 1961, K. A. Pirozynski (holotype IMI 89626f; isotype K).

The species was described and illustrated by Nag Raj & Kendrick (1975), and the specimens examined generally agree well with their description. They did not, however, note the eventual pigmentation of the ascospores which, in the material examined, become pale brown and measure 15–19 × 5–5.5 μm. The asci are also slightly larger, 50–70 × 11–15 μm, and have the apical pore strongly outlined blue in Melzer's reagent, a character not noted in the original description. The ectal excipulum is composed of rows of pale brown, prismatic cells, darker towards the base, mostly measuring 8–12 × 5–9 μm, but narrowing towards the margin. The hairs measure 45–90 × 3–4.5 μm, arise from superficial cells and taper to an acute or obtuse apex which is frequently curved, sometimes strongly so. They have 1–5 septa with the basal septum being most distinct and those above progressively less so. The walls are brown or grey-brown, becoming paler towards the apex, and are often slightly thickened near the base.

It should be noted that apothecia of this species are present in the type

collection of *Chalara cladii* and were presumably those seen by Ellis (1961), who referred to the frequent association of the latter with a species of *Belonium*.

LOCULOASCOMYCETES

PLEOSPORALES

Capronia pleiospora (Mouton) Sacc., Syll. Fung. 9: 899 (1891).

Melanomma pleiospora Mouton in Bull. Soc. r. Bot. Belg. 25: 154 (1886).

STRATHCLYDE, Rossthdu, on dead stem of *Rubus fruticosus* agg., 7 Sept. 1980, Spooner (K); Arran, Merkland Point, on *Rhododendron ponticum* L. wood, 8 Sept. 1980, Kirk (K). INVERNESS-SHIRE, Lochaber, Arisaig gardens, on *Rosa* sp., 24 May 1981, Dennis (K). SKYE, Point of Sleat, on dead *Calluna* sp., 16 Sept. 1981, Dennis (K).

This has not been formally reported from the British Isles, though was included in a foray list by Moodie (1981) as *C. pleiopus*. It is described and illustrated by Munk (1957), who referred the genus to the new family *Herpotrichiellaceae*. The family was accepted and referred to Dothideales by Barr (1972), and is characterised by minute, scattered, setose ascocarps, bitunicate asci, pale olive-grey or grey-brown septate ascospores and lack of pseudoparaphyses. Ascocarps occur on rotten, woody substrata and are generally inconspicuous. The genus *Capronia* is characterised by polysporous asci and muriform ascospores.

Four recent collections of *C. pleiospora*, which occurs typically on *Quercus* sp., are preserved at Kew. The ascospores are grey-brown, ellipso-fusoid, with 3–5 transverse septa and 1 or 2 longitudinal septa often running obliquely in the terminal cells, and measure 11–16 × 5–7 μm. Asci are 16-spored, 60–80 × 15–23 μm. Setae occur mostly near the ostiole, are thick-walled, dark brown, narrowly subulate and measure 25–60 × 3–5 μm. These collections agree very closely with the original description, and with the species as interpreted by Munk.

It is possible that *C. pleiospora* may prove synonymous with the type of the genus, *C. sexdecemspora* (Cooke) Sacc. Unfortunately, no material of that species appears to have been preserved, and it is typified by an unpublished illustration by Cooke. This shows a fungus very similar to *C. pleiospora* with perhaps slightly narrower spores. No spore size is indicated. According to Saccardo (1981) the spores are larger than in *C. pleiospora*, 18–20 × 5 μm.

Dangeardiella fusiforma Obrist in Phytopath. Z. 35: 381 (1959).

Ascocarps immersed, becoming erumpent, black, simple or compound with 2 or 3 locules, indistinctly papillate, elongated parallel to the long-axis of the host, 0.3–0.7 mm long, 0.2–0.4 mm broad. *Asci* bitunicate, 90–115 × 15–17 μm, 8-spored, obclavate, broadest below the centre, abruptly narrowed at the base into a short stipe, tapered above to a broadly rounded apex. *Ascospores* 23–30 × 6–8 μm, hyaline, fusoid, straight or slightly curved, broadest above the centre, 5–7-septate, slightly constricted at the septa, 3rd or 4th cell from top largest. Spores filling the ascus, uniseriate above, irregularly arranged in 2–3 series below. *Pseudoparaphyses* numerous, filiform, flexuous, septate, branched, hyaline, c. 1 μm diam. Fig. 4B, p. 553.

STRATHCLYDE, Gigha, hill east of Tarbert, on petiole of *Dryopteris dilatata* (Hoffm.) A. Gray, 12 May 1981, *Dennis* (K).

Dangeardiella fusiforma has hitherto been known only from the type locality in Switzerland, and from Norway and Sweden. It occurs typically on *Dryopteris filix-mas* (L.) Schott and was reported by Holm & Holm (1978) on this host from Norway, but also on *D. dilatata*, *D. carthusiana* (Vill.) H. P. Fuchs (= *D. spinulosa* Watt.) and *Athyrium felix-femina* (L.) Roth from Sweden.

Ascocarps occur on the veins of the lamina and on the petiole. They are erumpent and may be simple or, at least on the petiole, become compound with at least three locules. According to Holm & Holm, several ascocarps may fuse to form large fruit-bodies. The asci in the present material are shorter and broader than described by Obrist (1959), but agree with measurements given by Holm & Holm. Ascospores, also, are smaller than cited by Obrist, but spore size is variable in this species according to Holm & Holm, who reported a range of $25\text{--}50 \times 6\text{--}10 \mu\text{m}$, with most spores $25\text{--}30 \times 7.5\text{--}9 \mu\text{m}$.

HYSTERIALES

Lophium elegans Zogg in Bericht. Ber. schweiz. bot. Ges. 64: 141 (1954).

Ascocarps $450\text{--}600 \mu\text{m}$ high, $300\text{--}350 \mu\text{m}$ wide, scattered, superficial or erumpent through cracks in bark, irregularly mytiliform, black, carbonaceous, slightly narrowed at the base. Asci $170\text{--}210 \times 8\text{--}10 \mu\text{m}$, 8-spored, cylindrical, bitunicate, tapered towards the base and expanded into a small foot $4\text{--}5 \mu\text{m}$ diam., slightly narrowed above to a broadly rounded apex. Ascospores $240\text{--}270 \times 1.5\text{--}2 \mu\text{m}$, hyaline, filiform, tapered towards the ends, becoming multiseptate, initially lying parallel, becoming spirally arranged within the ascus at maturity. Paraphysoids numerous, hyaline, filiform, much branched, $1\text{--}1.5 \mu\text{m}$ diam. Fig 3C, p. 551.

INVERNESS-SHIRE, near Drumnadrochit, Borlum Forest, on *Juniperus communis*, 9 May 1980, *Dennis* (K). STRATHCLYDE, Arran, Goat Fell, on dwarf *Juniperus* sp., 25 Sept. 1981, *Dennis* (K).

The species has not previously been reported from the British Isles. Ascocarps are scattered and occur on twigs and shoots but apparently never on needles, a fact noted also by Holm & Holm (1977) for *Lophium mytilinum* (Pers.) Fr. That species occurs on a variety of coniferous hosts, whereas *L. elegans* appears to be restricted to *Juniperus* spp. The latter is known from alpine localities in France, Italy and Switzerland, but was not collected by Holm & Holm (1977) in the Nordic countries.

Lophium elegans is evidently very closely related to *L. mytilinum*, and is distinguished particularly by the spiral coiling of the ascospores in the ascus. This character appears to be exhibited at maturity only, as young asci in the two British collections have the spores lying parallel. Both collections are somewhat immature, though in each a few mature asci with spirally coiled spores have been observed. Discharged spores measure $30\text{--}70 \mu\text{m}$ longer than the asci and can, therefore, only be accommodated in the ascus by a coiling arrangement.

According to Zogg (1962), the ascocarps of *L. mytilinum* are longer and thicker than those of *L. elegans*, and the spores remain shorter than the asci. There is little difference in ascus size, however, between the two species.

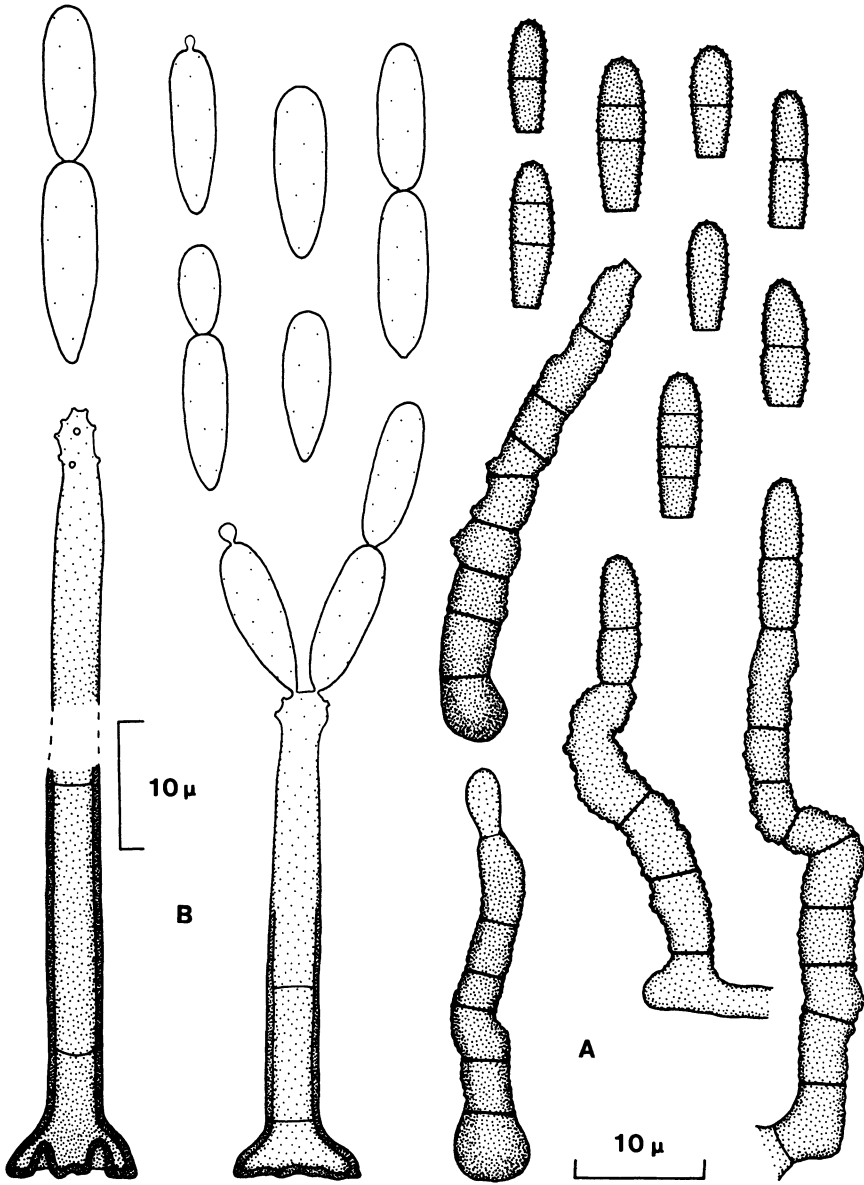


FIG. 12. **A** *Belemnospora verruculosa* (Holotype). **B** *Pterygosporopsis rhododendri* (Holotype).

DEUTEROMYCETES

P. M. KIRK

Belemnospora verruculosa P. M. Kirk sp. nov.

Coloniae minute pilosae vel velutinae, effusae, brunneae usque atrobrun-

neae. Mycelium in substrato plerumque immersum, ex hyphis ramosis, septatis, laevibus, pallide brunneis usque brunneis, et usque 3 μm diam. compositum. Conidiophora macronemata, mononemata, erecta vel recumbenta, recta vel flexuosa, simplicia, septata, brunnea usque atrobrunnea, verruculosa, 25–45 μm interdum etiam celsioria, 3.5–4.5 μm diam., per 1–6 proliferationes percurrentes elongantia. Cellulae conidiogenae monoblasticae, in conidiophora incorporatae, terminales, percurrentes, cylindricae. Conidia acrogena, solitaria, sicca, minute echinulata ad verruculosa, brunnea, cylindrica, ad apici rotundata, ad basem truncata et non incrassata, (0–) 1–2 (–3)–septata, (8–) 9–11 (–12) \times (2.5–) 3–4 μm . Typus: Arran, Kirk 873a (holotypus IMI 252672a).

Colonies minutely hairy or velvety, effuse, brown to dark brown. *Mycelium* mostly immersed in the substratum, composed of branched, septate, smooth, pale brown to brown hyphae up to 3 μm diam. *Conidiophores* macronematous, mononematous, erect or recumbent, straight or flexuous, simple, septate, brown to dark brown, verruculose, 25–45 μm or more high, 3.5–4.5 μm diam., with 1–6 or more percurrent proliferations. *Conidiogenous cells* monoblastic, integrated, terminal, percurrent, cylindrical. *Conidia* acrogenous, solitary, dry, minutely echinulate to verruculose, brown, cylindrical, rounded at the apex, truncate at the unthickened base, (0–) 1–2 (–3)–septate, (8–) 9–11 (–12) \times (2.5–) 3–4 μm . Fig. 12A.

SURREY, Esher Common, on dead twig of *Rhododendron ponticum*, 9 Aug. 1980, Kirk 719a (IMI 250716a). STRATHCLYDE, Arran, Kildonan Point, on dead stem of *Phragmites australis*, 9 Sept. 1980, Kirk 873a (holotype IMI 252672a).

The verruculose, 1–2-septate conidia distinguish *Belemnospora verruculosa* from *B. epiphylla* P. M. Kirk and *B. pinicola* P. M. Kirk (Kirk 1981b).

***Cephalotrichum microsporum* (Sacc.) P. M. Kirk comb. nov.**

Stysanus microsporus Sacc. in *Michelia* 1: 274 (1878).

Doratomyces microsporus (Sacc.) Morton & G. Sm. in *Mycol. Pap.* 86: 77 (1963).

In following Hughes (1958) and Carmichael *et al.* (1980), who correctly use the generic name *Cephalotrichum* Link (1809), including *Doratomyces* Corda (in Sturm 1829) as a synonym, the above combination becomes necessary.

***Ceratosporella novae-zelandiae* S. Hughes in N.Z. Jl Bot. 9: 352 (1971).**

ABERDEENSHIRE, on bark of *Picea excelsa* Link, 1967, C. Holloway (IMI 128732). STRATHCLYDE, Brodick Castle, on rotten wood (? *Pinus* sp.), 8 Sept. 1980, Kirk 826a (IMI 252274a).

Ellis (1976) reported a collection on bark of *Picea excelsa* from Scotland, which he tentatively referred to this species. He noted that it differed from the holotype (which he illustrated), on decaying wood of *Coprosoma australis* Robinson from New Zealand, by the slightly smaller dimensions of all parts. The present collection, which is similar to that on *Picea excelsa*, has conidiophores up to 180 μm high and 4–7 μm diam. bearing conidia 16–24 μm long with arms 4–5 μm wide and 1–3-septate. Based on the evidence avail-

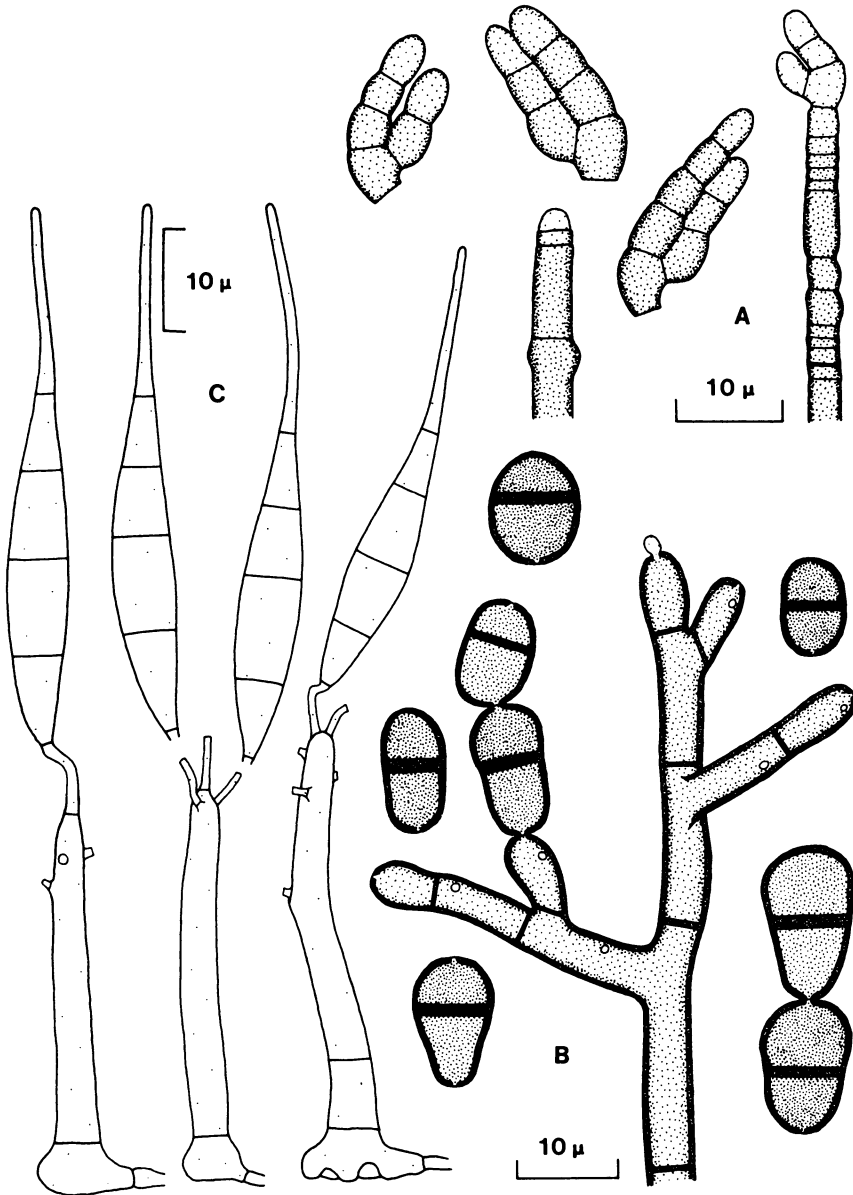


FIG. 13. **A** *Ceratospora novae-zelandiae* (P. M. Kirk 826a). **B** *Diplococcium lawrencei* (P. M. Kirk 856a). **C** *Trichocomis lichenicola* (P. M. Kirk 881a).

able, the differences noted here and by Ellis are not thought to be of significance, at least at species rank, and the Arran collection is, therefore, referred to *C. novae-zelandiae*. Fig. 13A.

Chaetochalara B. Sutton & Piroz. in Trans. Br. mycol. Soc. 48: 350 (1965).

Kendrick (1980) considered that there was little justification in retaining

Chaetochalara, which differs from *Chalara* (Corda) Rabenh. only in a single character, and proposed that it should be reduced to a synonym of the latter. Since *Chalara* is already somewhat heterogeneous and undoubtedly polyphyletic such a proposal would appear justified.

The holotypes of *Chaetochalara cladii* B. Sutton & Piroz. (1965) and *Chalara cladii* M. B. Ellis (1961) are here considered to represent the same fungus. Both collections bear the same teleomorph, *Phaeoscypha cladii* (see p. 574), and are also characterised by the presence of dark brown setae, although these are widely scattered and less numerous in the case of the holotype of *Chalara cladii*. Cultures of *Chalara cladii* derived from the holotype show that in age the conidia, like the ascospores of the teleomorph, develop a brown to dark brown pigmentation.

The following combinations are proposed.

Chalara africana (B. Sutton & Piroz.) P. M. Kirk comb. nov.

Chaetochalara africana B. Sutton & Piroz. in Trans. Br. mycol. Soc. 48: 352 (1965).

Chalara aspera (Piroz. & Hodges) P. M. Kirk comb. nov.

Chaetochalara aspera Piroz. & Hodges in Can. J. Bot. 51: 157 (1973).

Chalara bulbosa (B. Sutton & Piroz.) P. M. Kirk comb. nov.

Chaetochalara bulbosa B. Sutton & Piroz. in Trans. Br. mycol. Soc. 48: 351 (1965).

Chalara laevis (B. Sutton & Hodges) P. M. Kirk comb. nov.

Chaetochalara laevis B. Sutton & Hodges in Nova Hedwigia 27: 343 (1976).

Chalara ramosa (Nag Raj & Kendrick) P. M. Kirk comb. nov.

Chaetochalara ramosa Nag Raj & Kendrick, A monograph of *Chalara* and allied genera: 154 (1975).

Chalara cladii M. B. Ellis in Mycol. Pap. 79: 21 (1961).

Chaetochalara cladii B. Sutton & Piroz. in Trans. Br. mycol. Soc. 48: 352 (1965).

Teleomorph: *Phaeoscypha cladii* (Nag Raj & Kendrick) Spooner.

STRATHCLYDE, Arran, Ballarie, on dead stems of *Juncus effusus* L., 9 Sept. 1980, Kirk 888 (IMI 254658).

Previously reported from *Cladium mariscus* (Ellis 1961; Sutton & Pirozynski 1965) and *Juncus* sp. (Ellis 1976), *Chalara cladii* is also known from a single collection on *Cortaderia* sp. (herb. IMI, unpubl.). Unfortunately, the teleomorph is absent from the Arran collection. Fig. 14A.

Chalara aurea (Corda) S. Hughes in Can. J. Bot. 36: 747 (1958).

STRATHCLYDE, Arran, Brodick Castle, on conifer needle, 8 Sept. 1980, Kirk 828a (IMI 252276a).

The collection cited above is only tentatively referred to *Chalara aurea*. Nag Raj & Kendrick (1975), after examining a slide prepared from the holotype, in addition to eight other collections, cited the conidia as 8–19 (av.13) × 2–2.5 μm . In the present collection the conidia are somewhat shorter at 6–9

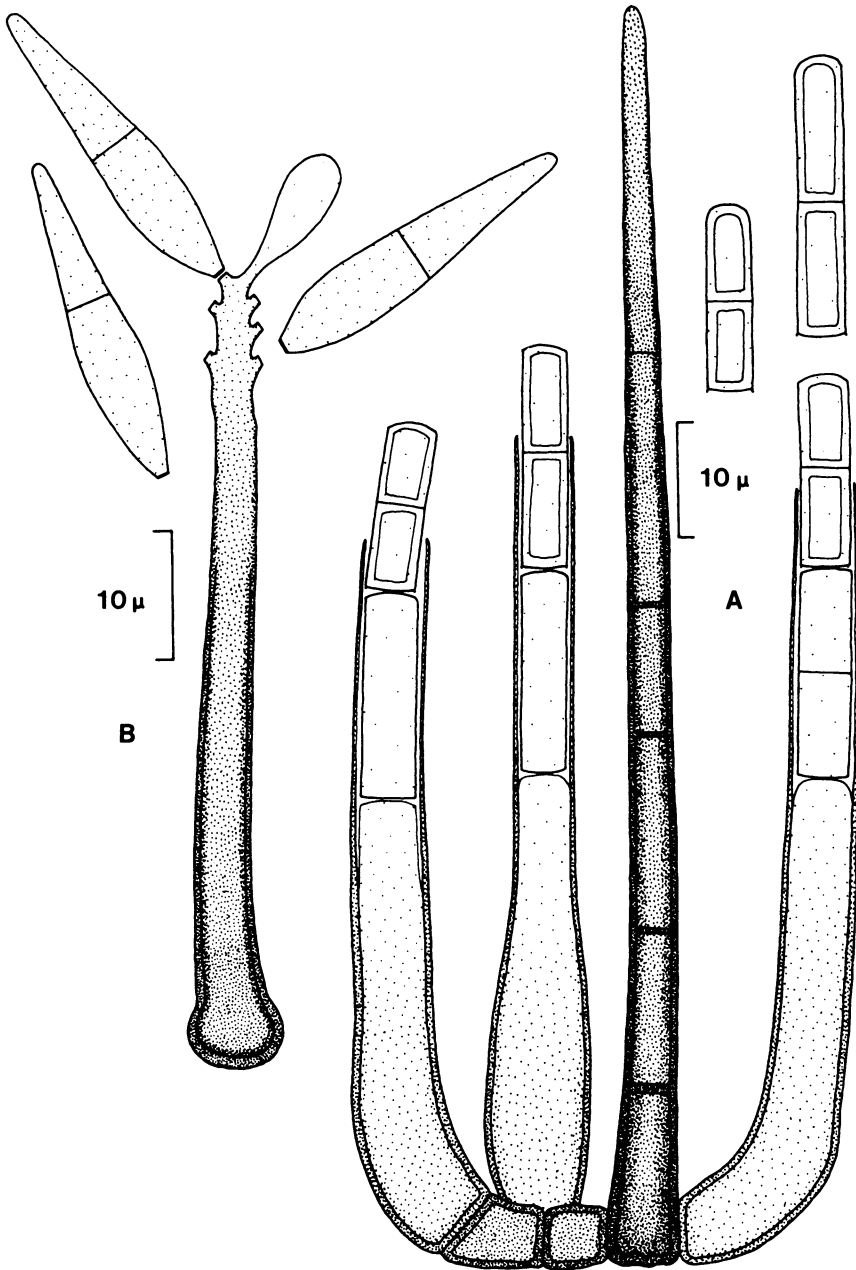


FIG. 14. **A** *Chalara cladii* (P. M. Kirk 888). **B** *Dactylaria junci* (P. M. Kirk 889).

(-13) × 1.5-2.5 μm although in other respects there is close agreement with the description given by Nag Raj & Kendrick. Fig. 15A.

Chalara crassipes (Preuss) Sacc. in Syll. Fung. 4: 335 (1886).

Colonies hairy, blackish-brown to black. *Phialophores* 30-50 μm high, 3-

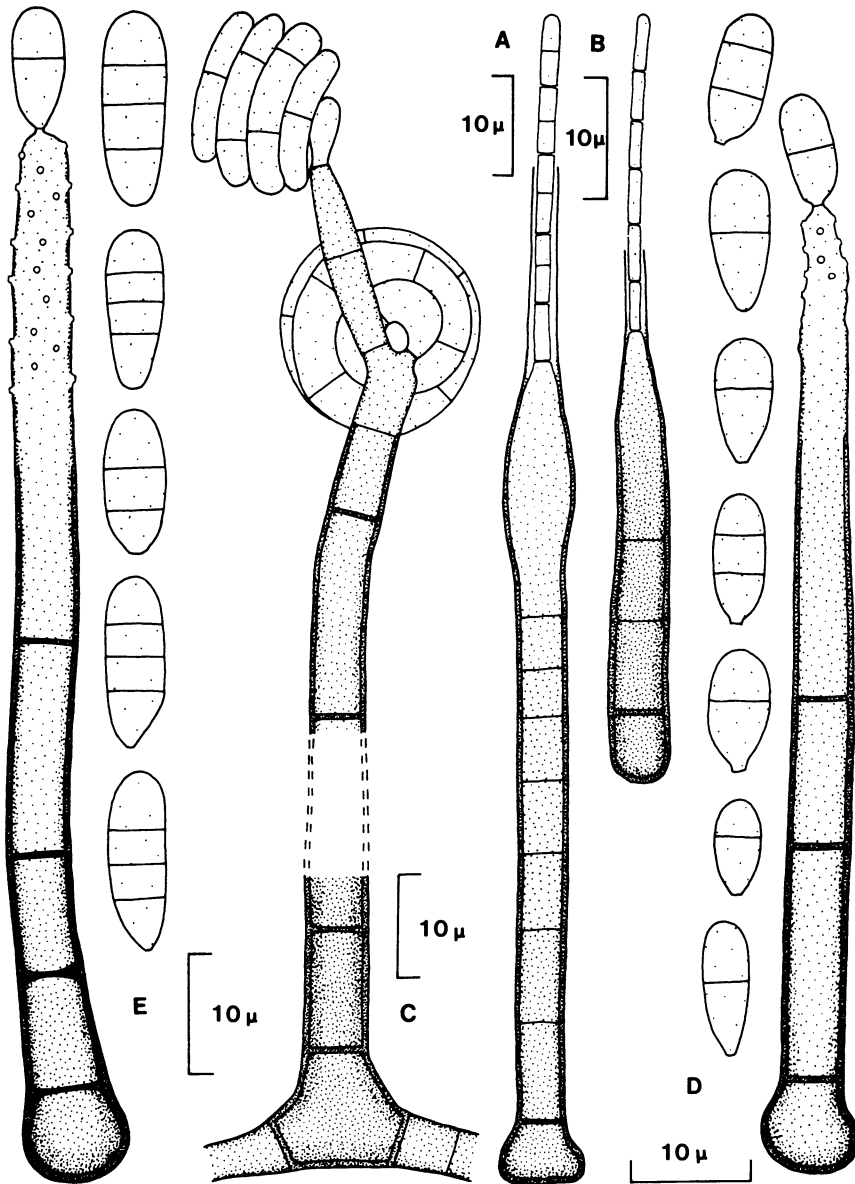


FIG. 15. **A** *Chalara aurea* (P. M. Kirk 828a). **B** *Chalara crassipes* (P. M. Kirk 824a). **C** *Helicoon fuscosporum* (P. M. Kirk 785a). **D** *Veronaea botryosa* (P. M. Kirk 869a). **E** *Veronaea botryosa* (P. M. Kirk 837e).

4.5 μm diam. at the base, 2–3-septate, pale brown to brown, terminating in a single lageniform *phialide* 20–35 μm high comprising a cylindrical to ellipsoid *venter* 7–9 \times 3–4 μm and a cylindrical *collarete* 11–13 \times 1.5–2 μm . *Conidia* cylindrical, hyaline, smooth, non-septate, 3–4.5 \times 1.5–2 μm . Fig. 15B.

STRATHCLYDE, Arran, Brodick Castle, on fallen cone of *Pinus* sp. and conifer needle, 8 Sept. 1980, Kirk 824a & 827 (IMI 252272a & 252275).

The above collections agree in all essential characters with the description of the lectotype, on conifer wood from Germany, provided by Nag Raj & Kendrick (1975). It would appear that they constitute the first records of *C. crassipes* since its original description.

***Dactylaria junci* M. B. Ellis** in More Dematiaceous Hyphomycetes: 172 (1976).

STRATHCLYDE, Arran, Ballarie, on dead stems of *Juncus effusus*, 9 Sept. 1980, *Kirk* 889 (IMI 254659).

Ellis (1976) introduced *Dactylaria junci* for *Pyricularia juncicola* MacGarvie (1968), non *Dactylaria juncicola* (MacGarvie) Bhatt & Kendrick (1968) based on *Diplorhinostrichum juncicola* MacGarvie (1965), which was described from *Juncus effusus* collected in Ireland. In addition to the collection cited above, it is also known from a single collection from Suffolk (herb. IMI, unpubl.). Fig. 14B, p. 581.

***Dictyosporium foliicola* P. M. Kirk** sp. nov.

Coloniae effusae, inconspicuae. Mycelium plerumque superficiale sed in substrato immersum, ex hyphis pallide brunneis, laevibus, ramosis, septatis, 1.5–2 μm diam., immersis compositum ex quibus exoritur reticulum hypharum superficialium brunnearum, laevium, ramosarum, septatarum, 1.5–3.5 μm diam. Conidiophora micronemata, ex mycelio superficiali terminalia et lateralia orientia. Conidia acrogena, chiroidea, curvata, laevia, sicca, septata, pallide brunnea ad brunnea, 34–56 μm longa, 20–38 μm lata maxima in parte, 3.5–4.5 μm crassa. Typus: Arran, *Kirk* 785d (holotypus IMI 252161d).

Colonies effuse, inconspicuous. *Mycelium* mostly superficial but partly immersed in the substratum, composed of pale brown, smooth, branched, septate, immersed hyphae 1.5–2 μm diam. giving rise to a network of pale brown, smooth, branched, septate, superficial hyphae 1.5–3.5 μm diam. *Conidiophores* micronematous, arising terminally and laterally from the superficial mycelium. *Conidiogenous cells* monoblastic, determinate. *Conidia* acrogenous, chiroid, curved, smooth, dry, septate, pale brown to brown, 34–56 μm long, 20–38 μm wide in the broadest part, 3.5–4.5 μm thick. Fig. 16A.

STRATHCLYDE, Arran, Brodick Castle, on dead leaves of *Ilex pernyi* Franch., 8 Sept. 1980, *Kirk* 785d & 793d (IMI 252161d holotype & 252169d). HIGHLAND, Wester Ross, Inverewe Gardens, on dead leaves of *Podocarpus totara* G. Benn. ex D. Don, 31 May 1982, *Kirk* 1245a (IMI 259560a).

Species of *Dictyosporium* usually occupy lignicolous or caulicolous habitats (Damon 1952; Ellis 1971), and are rarely reported from other substrata. Kirk (1981c), however, recorded *Dictyosporium toruloides* (Corda) Guéguen, a frequently encountered lignicolous species, from *Laurus nobilis* leaf litter. Two further foliicolous species are known, *D. campaniforme* Matsushima (1975) on leaves of *Quercus myrsinifolia* Blume, from Japan, and *D. micronesicum* Matsushima (1981) on leaves of *Calophyllum inophyllum* L., from the Island of Ponape, Micronesia. Despite the substratum, these species can be considered correctly placed in *Dictyosporium*. The present species, however, on leaves of

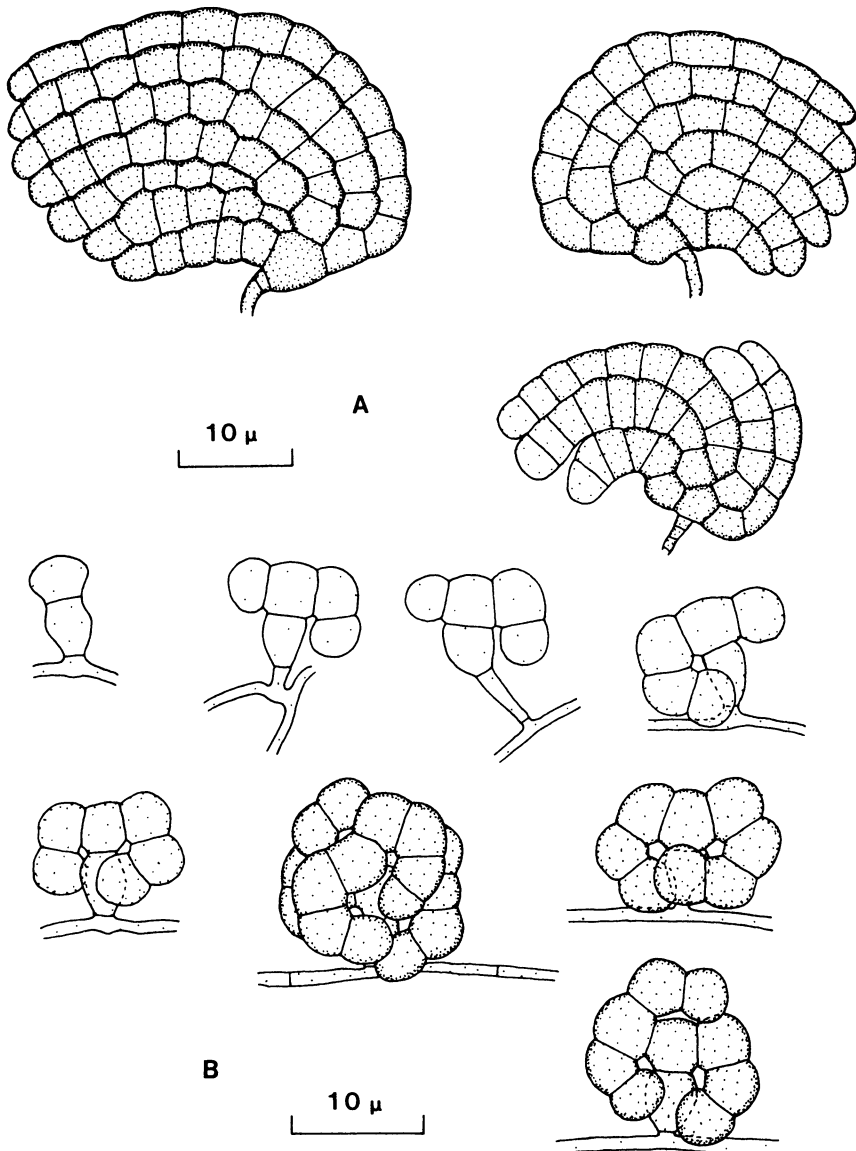


FIG. 16. **A** *Dictyosporium foliicola* (Holotype). **B** *Helicoma irregularis* (Holotype).

Ilex pernyi and *Podocarpus totara*, appears to occupy an isolated position in the genus and shows some affinities with species of *Xenosporium* (Ellis 1976). It would, however, be misplaced here since it apparently lacks 'secondary conidia' which are characteristic of that genus.

Diplococcium lawrencei B. Sutton in Mycol. Pap. 132: 49 (1973).

STRATHCLYDE, Arran, Merkland Point, on *Corylus avellana* wood, 8 Sept. 1980, Kirk 856a (IMI 252655a); Kingscross Point, on *Corylus avellana* wood, 9 Sept. 1980, Kirk 869h (IMI 252668h).

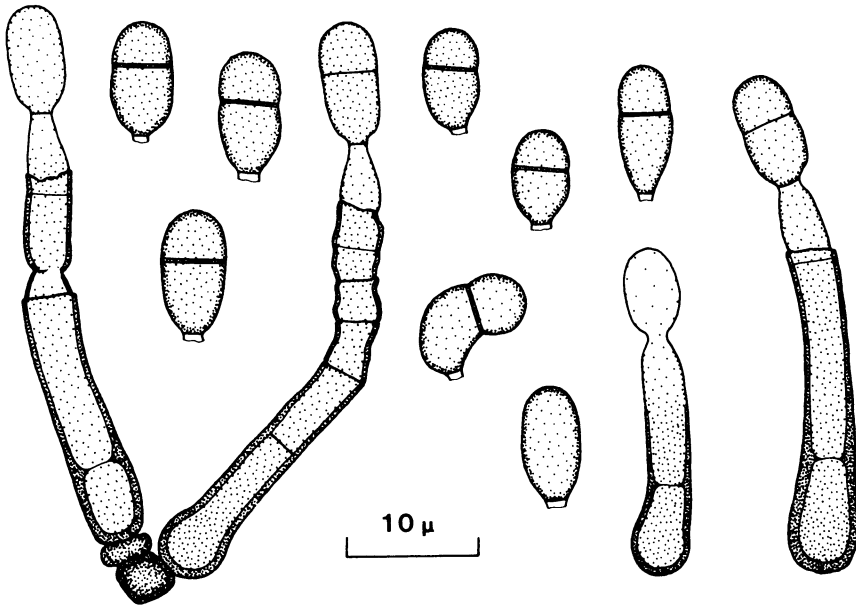


FIG. 17 *Endophragmiella arranensis* (Holotype).

Sutton (1973) described this distinctive species from a single Canadian collection on wood of *Alnus* sp. Holubová-Jechová (1982) gave a description and illustration of a collection from Czechoslovakia. Mel'nik (1982) reported the species from the USSR and it is also known from Poland and the USA (Holubová-Jechová 1982). All collections have been on dead or rotting wood of broad-leaved trees.

It is here reported from the British Isles for the first time. Fig 13B, p. 579.

***Endophragmiella arranensis* P. M. Kirk sp. nov.**

Coloniae minute pilosae, brunneae, saepae inconspicuae. Mycelium in substrato plerumque immersum, ex hyphis pallide brunneis, laevibus, ramosis, septatis, 1.5–2.5 μm latis compositum. Conidiophora macronemata, mononemata, solitaria vel 2–3 gregatim, erecta, simplicia, recta vel leviter flexuosa, septata, laevia, brunnea, ad apicem pallidiora, primo 12–20 μm alta, deinde 45 μm vel nonnumquam etiam celsiora, 2.5–3 (–4) μm lata, saepe ad fundamentum nonnihil incrassata, per usque 7 proliferationes elongantia. Cellulae conidiogenae monoblasticae, terminales, in conidiophora incorporatae, cylindricae usque ampulliformae, percurrentes. Conidia late ellipsoidea usque ovoidea vel raro parum obovoidea, (0–) 1-septata, ad septum constricta, constrictione ipsa saepe distincta, laevia, pallide brunnea usque brunnea, licet cellula ima pallidiora rarius est visu, 6.5–9.5 \times 4–5 μm , ad basem distincte fractam ob partem cellulae conidiogenae superiorem fimbriata. Typus: Arran, Kirk 887a (holotypus IMI 253994a).

Colonies minutely hairy, brown, often inconspicuous. *Mycelium* mostly immersed in the substratum, composed of pale brown, smooth, branched, septate hyphae 1.5–2.5 μm diam. *Conidiophores* macronematous, mono-

nematous, solitary or arising in groups of 2–3, erect, simple, straight or slightly flexuous, septate, smooth, brown, paler towards the apex, initially 12–20 μm high, finally up to 45 μm or more high, 2.5–3 (–4) μm wide, often slightly swollen at the base, with up to 7 percurrent proliferations. *Conidiogenous cells* monoblastic, terminal, integrated, cylindrical to ampulliform, percurrent. *Conidia* broadly ellipsoid to ovoid or rarely somewhat obovoid, smooth, pale brown to brown, basal cell rarely slightly paler, (0–) 1-septate, constricted at the septum, sometimes distinctly so, 6.5–9.5 \times 4–5 μm , with a distinct frill at the base derived from the distal end of the conidiogenous cell. Fig. 17.

STRATHCLYDE, Arran, Clauchan Glen, on rotten wood, 9 Sept. 1980, *Kirk* 887a (holotype IMI 253994a).

Amongst those species of *Endophragmiella* with 1-septate conidia, *E. arranensis* appears closest to *E. uniseptata* (M. B. Ellis) S. Hughes (1979), differing from that species in its less robust conidiophores and smaller conidia. The conidia of *E. arranensis* are, on average, the smallest of any species presently referred to *Endophragmiella* (Dunn 1982; Hughes 1979; Kirk 1981a, 1981b, 1982a, 1982b, 1982c).

***Fusichalara clavatispora* P. M. Kirk sp. nov.**

Coloniae effusae, pilosae, inconspicuae, fuscae ad atrae. Mycelium plerumque in substrato immersum, ex hyphis pallide brunneis, laevibus, ramosis, septatis, 2–4 μm diam. compositum. Conidiophora macronemata, mononemata, simplicia, erecta, recta vel leviter flexuosa, laevia, 1 ad 4-septata, pallide brunnea usque brunnea, ad apicem pallidiora, 70–120 \times 3.5–6 μm , in phialidem singulam terminantia. Phialides lageniformes, pallide brunneae usque brunneae, 38–50 μm alta. Venter ellipsoideus, 26–30 \times 7.5–12 μm . Collum cylindricum, 12–20 \times 4–5 μm , transitione ex ventre ad collum gradatim vel abrupta. Phialoconidia singulatim vel in catenas extrusa, elongato-cuneiformia usque clavata, apice rotundata, basi truncata, fimbriam marginalem ferente, (1–) 3-septata, laevia, hyalina, (10.5–) 12–16 (–18.5) μm longa, apice 3.5–4 μm diam., basi 2.5–3 μm diam. Typus: Arran, *Kirk* 884a (holotypus IMI 252673a).

Colonies effuse, hairy, inconspicuous, blackish-brown to black. *Mycelium* mostly immersed in the substratum, composed of pale brown to brown, smooth, branched, septate hyphae 2–4 μm diam. *Conidiophores* macronematous, mononematous, simple, straight or slightly flexuous, smooth, 1–4-septate, pale brown to brown, paler at the apex, 70–120 \times 3.5–6 μm , terminating in a single phialide. *Phialides* lageniform, pale brown to brown, 38–50 μm high. *Venter* ellipsoid, 26–30 \times 7.5–12 μm . *Collarlette* cylindrical, 12–20 \times 4–5 μm , transition from venter to collarlette gradual or abrupt. *Phialoconidia* extruded singly or in short chains, elongate cuneiform to clavate, apex rounded, base truncate, with a distinct marginal frill, (1–) 3-septate, smooth, hyaline, (10.5–) 12–16 (–18.5) μm long, 3.5–4 μm diam. at the apex, 2.5–3 μm diam. at the base. Fig. 18.

STRATHCLYDE, Arran, Clauchan Glen, on dead stem of *Rubus fruticosus* agg., 9 Sept. 1980, *Kirk* 884a (holotype IMI 252673a).

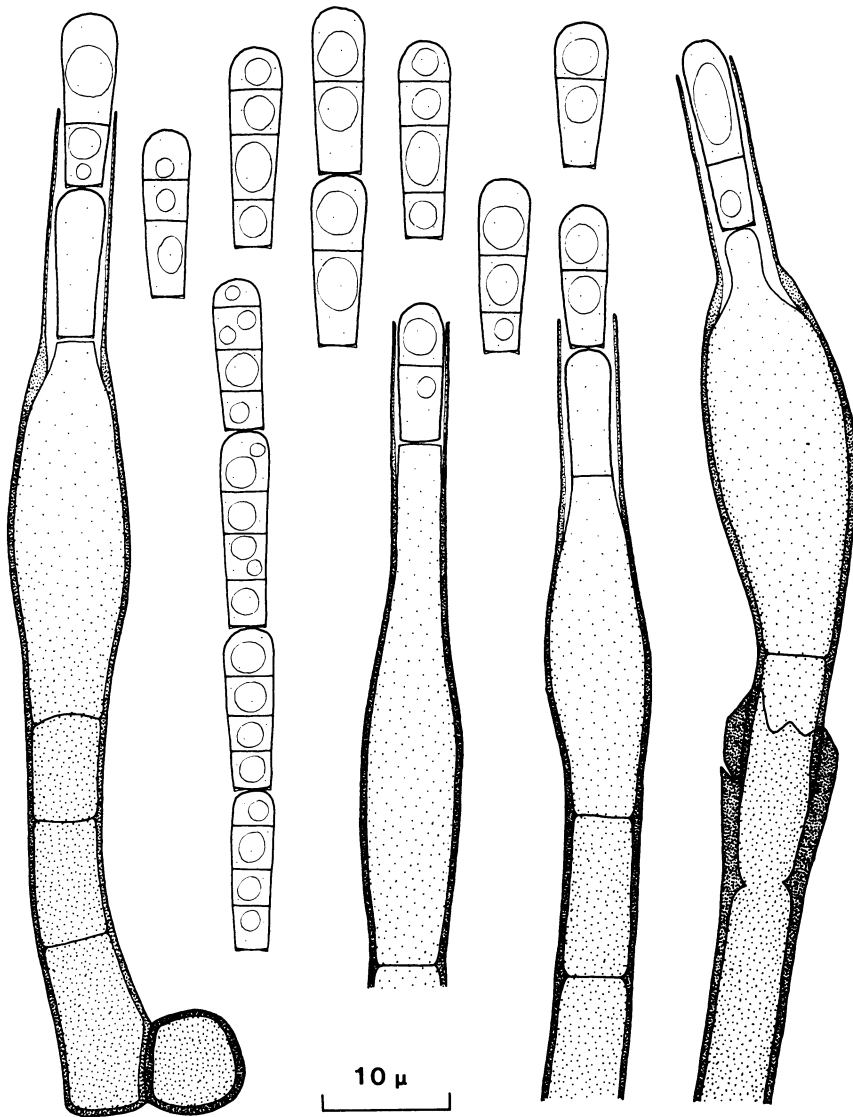


FIG. 18. *Fusichalara clavatispora* (Holotype).

Fusichalara was introduced by Hughes & Nag Raj (1973) for species which are similar to those referred to *Chalara* but differ in two essential characters. The inner wall of the phialide at the point of transition from venter to collarette is thickened, and the primary conidium is morphologically distinct from subsequent conidia. This conidium is cylindrical and straight whilst subsequent conidia are fusoid and straight or somewhat sigmoid.

Although the primary conidia in *Fusichalara clavatispora* are indistinguishable from subsequent conidia, the thickening of the inner wall of the phialide at the point of transition from venter to collarette is present. This latter character is here interpreted as indicating a developmental type which differs

from that found in *Chalara* sensu stricto and is thus of more significance than conidium morphology.

***Helicoma irregulare* P. M. Kirk sp. nov.**

Coloniae effusae, pulveraceae, pallide brunneae usque brunneae, saepe inconspicuae. Mycelium partim in substrato immersum sed plerumque superficiale, ex hyphis laevibus pallide brunneis ramosis parce septatis 1–1.5 μm latis compositum. Conidiophora micronemata vel absentia. Cellulae conidiogenae monoblasticae, determinatae, in mycelio superficiale incorporatae. Conidia irregulariter helicospora, septata, ad septa constricta, pallide brunnea usque brunnea, laevia, 14–20 μm diam., filamenta 3–4 μm crassa. Typus: Gigha, *Dennis* (holotypus IMI 259597b).

Colonies effuse, powdery, pale brown to brown, often inconspicuous. *Mycelium* partly immersed in the substratum but mostly superficial, composed of smooth, pale brown, branched, sparingly septate hyphae 1–1.5 μm diam. *Conidiophores* micronematous or absent. *Conidiogenous cells* monoblastic, determinate, integrated in the superficial mycelium. *Conidia* irregularly helicosporous, septate, constricted at the septa, pale brown to brown, smooth, 14–20 μm diam., the filaments 3–4 μm thick. Fig. 16B, p. 584.

STRATHCLYDE, Gigha, Achamore, on dead leaves of *Pseudowintera colorata* (Raoul) Dandy, 15 May 1981, *Dennis* (IMI 259596b & holotype 259597b).

It is with some hesitation that this species if referred to *Helicoma* as it is probably not closely related to the majority of species presently referred to this genus. However, because of the presence of micronematous conidiophores and solitary conidia no other more appropriate genus is available and the introduction of a new genus is unwarranted. The developing conidia show distinct helicosporous affinities and, although at maturity they are somewhat irregular in form, such a characteristic is not uncommon in other genera of helicospored hyphomycetes (Abdullah, Fisher & Webster 1979; Glen-Bott 1955).

***Helicoon fuscosporum* Linder in Ann. Mo. bot. Gdn 16: 326 (1929).**

Conidiophores macronematous, solitary, erect, straight or slightly flexuous, smooth, septate, dark brown, paler towards the apex, up to 200 μm high, 3.5–4.5 μm diam. at the apex, up to 7 μm diam. at the base. *Conidia* somewhat doliiform to broadly ellipsoid, helicosporous with 4–7 coils per conidium, septate, pale brown, 16–22 μm diam., 14–24 (–26) μm long, filaments 3–5 μm thick. Fig. 15C, p. 582.

STRATHCLYDE, Arran, Brodick Castle, on leaves of *Ilex pernyi*, 8 Sept. 1980, *Kirk* 785a (IMI 252161a).

Linder described *Helicoon fuscosporum* from catkins of *Alnus* sp. collected in Connecticut, U.S.A. Van Beverwijk (1953) recorded this species from leaves and fruit of *Betula* sp., leaves of *Salix* sp. and buds of *Quercus* sp. from the Netherlands, and from leaves of *Betula* sp. from Sweden. It is also known from a single collection from the British Isles (van Beverwijk 1953), isolated from *Fagus* sp. leaves.

Although the conidia in the present collection are somewhat smaller than

those described by Linder (1929) and van Beverwijk (1953) there is little doubt that it should be referred to *H. fuscosporum*.

***Pterygosporopsis rhododendri* P. M. Kirk sp. nov.**

Coloniae effusae, pilosae, interdum inconspicuae, pallide brunneae usque albae, colore obnoxio numeris sporarum. Mycelium partim superficiale sed plerumque in substrato immersum, ex hyphis laevibus pallide brunneis ramosis septatis 2.5–4 μm diam. compositum. Conidiophora macronemata, mononemata, solitaria, erecta, simplicia, recta vel leviter flexuosa, pallide brunnea usque brunnea, ad apicem pallidiora, septata, (30–) 90–220 \times 3–4.5 μm . Cellulae conidiogenae in conidiophora incorporatae, terminales, polyblasticae, holoblastice proliferantes, sympodiales, denticulatae, denticulis cylindricis quarum sunt apices truncati et nil incrassati. Conidia catenata, catenis e 2 conidiis compositis, sicca, clavata usque fusiformia, sine septis, minute echinulata, hyalina usque pallidissime brunnea, schizolytice secedentia, 10.5–16 \times 3.5–4 μm . Typus: Arran, Kirk 840 (holotypus IMI 252288).

Colonies effuse, hairy, sometimes inconspicuous, pale brown to whitish depending on the amount of sporulation. *Mycelium* partly superficial but mostly immersed in the substratum, composed of smooth, pale brown, branched, septate hyphae 2.5–4 μm diam. *Conidiophores* macronematous, mononematous, solitary, erect, simple, straight or slightly flexuous, pale brown to brown, paler towards the apex, septate, (30–) 90–220 \times 3–4.5 μm . *Conidiogenous cells* integrated, terminal, polyblastic, proliferating holoblastically, sympodial, denticulate, denticles cylindrical with unthickened truncate apices. *Conidia* in chains of two, dry, clavate to fusiform, non-septate, minutely echinulate, hyaline to very pale brown, seceding schizolytically, 10.5–16 \times 3.5–4 μm . Fig. 12B, p. 578.

STRATHCLYDE, Arran, Merkland Point, on dead leaves of *Rhododendron ponticum*, 8 Sept. 1980, Kirk 840, 841a, 844, 845a (IMI 252288 holotype, 252289a, 252292, 252293a). HIGHLAND, Wester Ross, Corrieshalloch Gorge, on dead leaves of *R. ponticum*, 4 June 1982, Kirk 1293 (IMI 269376).

Pterygosporopsis was introduced by Kirk (1983b) for a single species, *P. fragilis* P. M. Kirk, from leaves of *Laurus nobilis*. The genus was compared with several other genera of hyphomycetes, including *Anungitea*, *Subramaniomyces* and *Dactylaria*, with which it shares some characteristics. The present species differs from *P. fragilis* in having much taller conidiophores and broader, echinulate, slightly pigmented conidia which appear to be borne only in pairs.

***Sporidesmium hormiscioides* Corda in Icon. Fung. 2: 6 (1838).**

Colonies hairy, black. *Mycelium* mostly immersed in the substratum, composed of smooth, branched, septate, brown to dark brown hyphae 2.5 μm diam. *Conidiophores* macronematous. *Conidiogenous cells* produced directly from the immersed mycelium, ampulliform, solitary or fasciculate, 0 (–1)-septate, determinate, smooth, dark brown to blackish brown, 12–25 \times 6–9 μm . *Conidia* acrogenous, solitary, fusiform to narrowly obclavate, smooth, brown to dark brown, 17–23-euseptate, cell lumina reduced, 165–230 \times 13–16 μm , 5–6 μm diam. at the base, seceding schizolytically. Fig. 19.

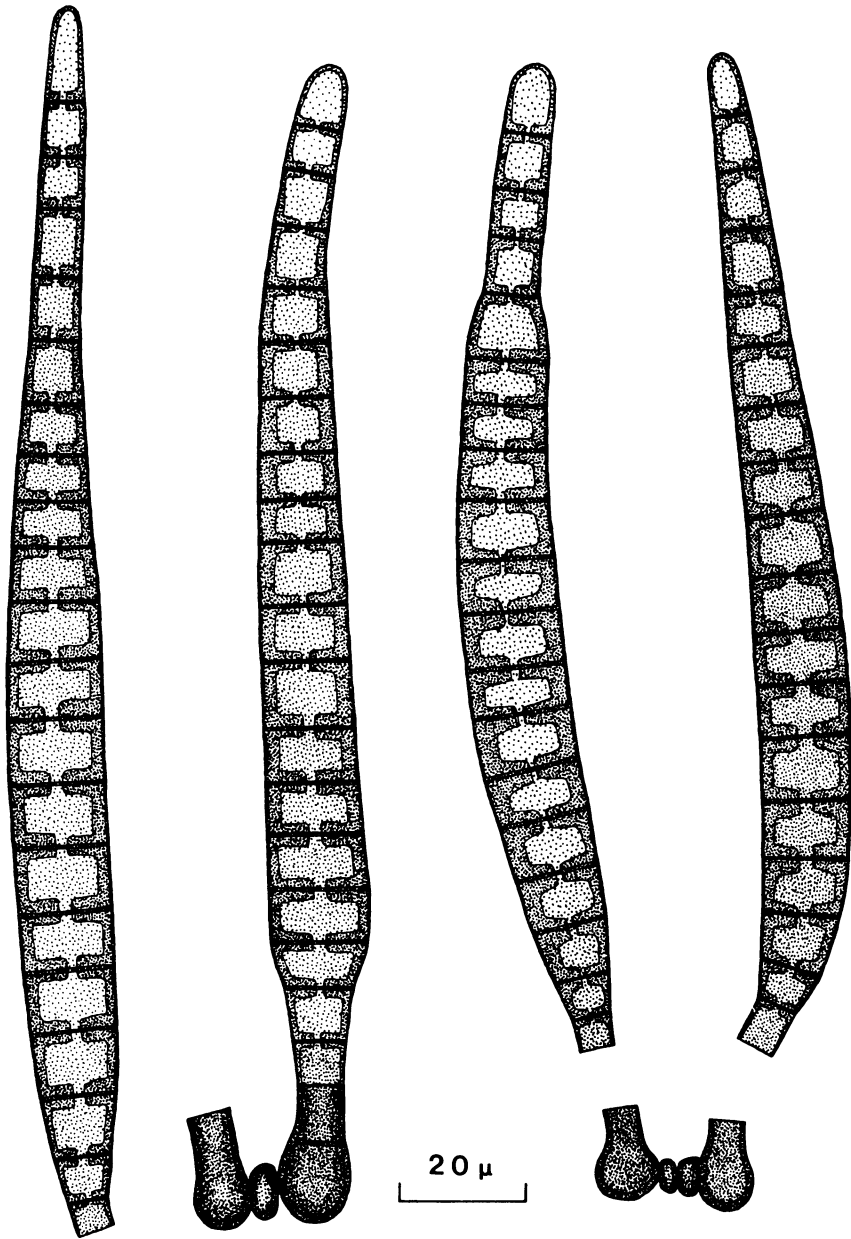


FIG. 19. *Sporidesmium hormiscioides* (P. M. Kirk 807a).

STRATHCLYDE, Arran, Brodick Castle, on *Eucalyptus coccifera* Hook. f. capsule, 8 Sept. 1980, Kirk 807a (IMI 252183a).

Although *Sporidesmium hormiscioides* is known from the British Isles (Ellis 1976; Hughes 1974), the present collection differs somewhat from those described by Hughes. The conidia are not reddish-brown, the cell lumen is distinctly reduced, and the septa are not obscured by very dark bands but

have a conspicuous central pore. Such differences are not, however, considered sufficient to justify the introduction of a new name for this collection.

Trichoconis lichenicola *D. Hawksw.* in Trans. Br. mycol. Soc. 74: 382 (1980).

STRATHCLYDE, Arran, Clauchan Glen, overgrowing a microthyriaceous fungus on needles of *Pinus sylvestris* L., 9 Sept. 1980, *Kirk* 881a (IMI 252680a). ENGLAND: WARWICKSHIRE, Ullehall, near Mochley Wood, overgrowing *Chaetosphaeria myriocarpa* (Fr.) C. Booth on a branch of *Corylus avellana*, 12 Jan. 1973, *M. C. Clark* MC1296 (IMI 172471). BERKSHIRE, Reading, Burghfield Common, on needles of *Pinus sylvestris*, 9 Oct. 1978, *D. W. Minter* (IMI 232800b). IRELAND: COUNTY KERRY, Killarney, Tore Cascade, overgrowing galls of *Decampsiosphaeria rivana* (de Not.) *D. Hawksw.* on *Peltigera scutata* (Dicks.) *Duby* on *Fraxinus* sp. trunk, March 1976, *R. G. Woods* (holotype IMI 238627).

Deighton & Pirozynski (1972) provided a detailed description of *Trichoconis* Clem., a genus of tropical hyperparasitic hyphomycetes usually overgrowing foliicolous ascomycetes, particularly Meliolales. They redescribed the type species, *T. caudata* (Appel & Strunk) Clem. (= *Pyricularia caudata* Appel & Strunk), based on a collection overgrowing *Botryodiplodia theobromae* Pat. on rotten pods of *Theobroma cacao* L. from Sierra Leone. Several other species with a predominantly tropical distribution were described. *Trichoconis hibernica* Deighton & Piroz., however, was described from Ireland based on a collection overgrowing *Appendiculella calostroma* (Desm.) Höhnelt on *Rubus fruticosus* L. stems.

The present species, *Trichoconis lichenicola*, was the second species to be described from outside the tropics. Although referred to as a lichenicolous fungus by Hawksworth (1980), an examination of the collections cited above, shows it to be undoubtedly fungicolous. It probably occurs as a hyperparasite on a variety of other ascomycetous fungi. Fig. 13C, p. 579.

Veronaea botryosa *Cif. & Montem.* in Atti. Ist. bot. Univ. Lab. crittogam. Pavia, Ser. 5, 15: 68 (1957).

STRATHCLYDE, Arran, Merkland Point, on *Rhododendron ponticum* wood, 8 Sept. 1980, *Kirk* 837e (IMI 252285e); Kingscross Point, on *Corylus avellana* wood, 9 Sept. 1980, *Kirk* 869a (IMI 252668a).

The type collection was isolated from 'olive slag' in Italy. In pure culture the conidia were described as 1-septate and $12-15 \times 2-4 \mu\text{m}$. Although differing somewhat from the holotype, the two collections from Arran are referred to *Veronaea botryosa*. In IMI 252668a (Fig. 15D, p. 582) the conidia are (0-) 1-septate and $8-12 \times 3-4.5 \mu\text{m}$ whilst in IMI 252285e (Fig. 15E, p. 582) they are (0-) 1-3-septate and measure $10-16 \times 3.5-5 \mu\text{m}$. These differences are not, however, considered significant as the measurements are not directly comparable, one set being from pure culture (the holotype) and the other from material on the natural substratum (the Arran collections).

This species does not appear to have been previously recorded from the British Isles.

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Added in proof:

Between *Crocicreas* and *Dermea* add:

**Cyathieula stipae* (Fuckel) E. Müller var. *ammophilae* Dennis Gigha: On dead leaves of *Ammophile arenaria*, Eilean Garbh, May 1981 (K). See Dennis (1983).