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NEW OR INTERESTING RECORDS OF BRITISH HYMENOMYCETES, IV

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(With 5 Text-figures)

Accounts are given of fifteen Heterobasidiomycetes, two of which, *Tremella globospora* and *T. polyporina*, are described as new. In addition the following new combinations are proposed: *Endostilum albidum* (Berk.) Reid, *Myxarium subhyalinum* (Pears.) Reid, *M. laccatum* (Bourd. & Galz.) Reid, *Exidiopsis opalea* (Bourd. & Galz.) Reid, *Heterochaete spinulosa* (Berk. & Curt). Reid, *Eichleriella deglubens* (Berk. & Br.) Reid and *Hirneola auricula-judae* var. *lactea* (Quél.) Reid. A number of species new to Britain are recorded for the first time, namely *Exidiopsis effusa* (Sacc.) Möll., *E. opalea*, *Sebacina calospora* (Bourd. & Galz.) Bourd. & Galz., *Basidiodendron cinereum* (Bres.) Luck-Allen, *Heterochaetella dubia* (Bourd. & Galz.) Bourd. & Galz., *H. brachyspora* Luck-Allen, and *Hirneola auricula-judae* var. *lactea*. An account of a possible conidial state of *Myxarium nucleatum* is also given.

The descriptions that follow are based entirely upon the collections cited, which are preserved in Herb. K.

A REASSESSMENT OF *TREMELLA TUBERCULARIA*

Endostilbum albidum (Berk.) comb.nov.

Tubercularia albida Berk., *English Flora* **5**, pt.2, p. 354, 1836.
Tremella tubercularia Berk., *Outlines of British Fungology* p. 288, 1860.
Sirobasidium cerasi Bourd. & Galz., *Bull. trimest. Soc. mycol. Fr.* **25**, 19, 1909.
Endostilbum cerasi (Bourd. & Galz.) Malençon, *Bull. trimest. Soc. mycol. Fr.* **80**, 111, 1964.

In his check list of European hymenomycetous Heterobasidiae, Donk (1966) lists *Tremella tubercularia* Berk. as a genuine species of *Tremella*, citing in synonymy *Tubercularia albida* Berk. However, although the original material of *T. albida* from Cotterstock, Northants, cannot be found with certainty amongst the collections from Kew and the British Museum, there is a specimen in the *Tremella tubercularia* folder labelled by Berkeley '*Tremella clavata*, Norths.' which I hereby designate as the neotype of *Tubercularia albida* Berk. This specimen and others in Berkeley's herbarium variously labelled *Coryne turbinata* Corda, *C. clavata* Fr., *Tremella clavata*, *Tubercularia albida* Berk. and *Tremella tubercularia* Berk., are all conspecific and represent an imperfect fungus better known as *Sirobasidium cerasi* Bourd. & Galz., as noted by Bandoni on one of the Kew sheets. The last named fungus, which was recently made the type of the new genus *Endostilbum* Malençon (1964), has no connexion, so far as I know, with the Tremellales.

It is unnecessary to give a full description of this species here since there are already excellent accounts published by Christiansen (1963) and Malençon (1964). However, it is worth noting that *E. albidum* is not uncommon in Britain and that the small drumstick-like fruit bodies may reach a height of 10 mm with a stalk up to 2 mm wide, although usually less than half this size.

The following British collections are preserved in **K**: Hants: Lyndhurst, coll. G. Massee, Herb. C. Rea. Somerset: unlocalized, Herb. C. E. Broome. Wilts.: on felled oak (*Quercus* sp.), Rudloe, Oct. 1841, Herb. C. E. Broome. Greater London: on *Quercus* sp., Ruislip, coll. D. A. Reid, 20. x. 1957. Herts: on very rotten *Prunus avium*, Ashridge, coll. Reid, without date. Beds.: Kings Wood, Heath and Reach, coll. Reid, 19. x. 1963. Northants: unlocalized, Herb. Berk. (NEOTYPE of *Tuberculariа albida* Berk.). Warwicks: unlocalized, Herb. Berk.; on cone of *Pinus*, Studley Castle, coll. W. B. Grove, 7. xii. 1911; Studley, coll. Grove, 1. ii. 1912; Earlswood, coll. Grove, 29. x. 1913; Driffield Lane, coll. Grove, 11. xi. 1882 and 25. xi. 1882 (both determined as *Graphium nigrum*). Salop.: Oswestry, Herb. Berk. Staffs: Great Barr. coll. E. N. Worsley, Dec. 1909, Herb. Grove. Leics: Twycross, coll. Rev. H. Bloxham, Herb. Berk. (2 colls.). Notts: unlocalized, Herb. Berk. Roxburghs: Mossburnford, coll. J. Jerdon, 4. xii. 1860, Herb. Berk. W. Lothian: unlocalized, coll. Bauchop, Herb. Berk. Perths: Rannoch, coll. Dr Buchanan White, Herb. Berk. Argylls: Appin, coll. Capt. Carmichael. Angus: Glamis, coll. Rev. J. Stevenson, Herb. Berk. (3 colls.). Morays: Forres, coll. Rev. I. Keith, Oct. 1873, Herb. Berk. Unlocalized: Herb. Berk.

The nomenclatural history of the fungus under discussion is somewhat involved. When he first published his account of his new taxon, Berkeley (1836) did so under the name *Tuberculariа albida* Berk. but in 1841 he wrote under *Coryne turbinata* Corda, 'My *Tuberculariа albida*. . . appears to be this species, with the figure of which it accords. At any rate I committed an error in referring the plant to the genus *Tuberculariа*'. Following this, Berkeley (1860) described the fungus under the new name *Tremella tuberculariа* Berk. The reason for this name change was that the fungus could not be transferred to *Tremella* with the epithet 'albida' since this was preoccupied by *Tremella albida* Huds. In any event Berkeley listed *Tuberculariа albida* in synonymy under his *Tremella tuberculariа*.

Since the name *T. tuberculariа* refers to an imperfect fungus which I have proposed should, in future, be known as *Endostilbum albidum*, it follows that the true species of *Tremella* described under this name by Bourdot & Galzin (1928) and Martin (1952) etc., needs a new epithet. In the following paragraphs I give an account of this fungus under the name *T. globospora* as a new species.

Tremella globospora sp.nov. (Fig. 4, *j*, *k*)

Tremella tuberculariа sensu Bourdot & Galzin, Neuhoff, Martin, etc.

Sporophora ex superficiebus inferioribus ramulorum parvorum pendula, incolorata, diaphana, aquosa, 4–5 mm diam sed nonnunquam confluentia et usque 1 cm diam, superficie cerebriformi ornata. Fructificationes peritheciis *Diaporthis* consociatae, et in sicco membranam vernicosam tenuem formantes, in vivo hypharum agglutinarum, 2–3 μm diam, muris tenuibus et fibulis compositae. Hymenium usque 50 μm crassum, basidiis sphaeropedunculosis dense confertis praeditum. Basidia capitulo globoso oblique septato, 10–18 × 9–13 μm, et stipito vel brevissimi vel longissimo usque 23 μm instructa. Sterigmata usque 35 μm longa. Sporae (5–) 6·2–8·2 (–10·2) × 5·75–7·2 (–9·75) μm (in cumulo), hyalinae, subglobosae, leviter dorsiventraliter compressae, muris tenuibus instructae.

Fructifications pendent from the undersides of small twigs as colourless, transparent-watery droplets, 4–5 mm diam, but by confluence reaching 1 cm diam. They are constantly associated with the perithecia of a *Diaporthe* deeply immersed in the substrate, and have the surface ornamented with cerebriform markings or wrinkles. On drying the fruit bodies form an inconspicuous, thin, varnish-like film. In section the perithecia of the *Diaporthe* are often rather indistinct or ghost-like, but the *Tremella* fills and envelopes them and bursts out from the substrate in the form of small pustules. These are formed of rather compact, thin-walled, hyaline, clamp-bearing, agglutinated hyphae, 2–3 μm wide. At the surface there is a layer, up to 50 μm wide of densely crowded sphaeropedunculate basidia, which arise at different levels and which are at different stages of development. There are no dikaryophyses. *Basidia* consist of a gobular head, 10–18 × 9–13 μm, which becomes divided into four segments by irregularly disposed, oblique walls, and an elongated stalk, with a basal clamp-connexion. However, the head is not separated from the stalk by a septum as in the myxarioid type of basidium. Those basidia originating nearest the surface have a very short stalk (occasionally lacking), whereas those originating more deeply have a stalk up to 23 μm in length. The sterigmata are up to 35 μm long. *Basidiospores* (5–) 6·2–8·2 (–10·2) × 5·75–7·2 (–9·75) μm (measured from a print, and excluding the well-developed apiculus), thin-walled, hyaline, subglobose, appearing slightly dorsiventrally compressed.

British collections examined: W. Sussex, West Dean Wood, West Dean, coll. Reid, 21. xii. 1968, on *Rubus fruticosus* agg., in association with *Diaporthe eres* (TYPE); Salop., Hayes Park Wood, Ludlow, coll. E. M. Wakefield, 30. v. 1932, on *Quercus* (B. M. S. foray); E. Yorks., Hull, coll. H. Stenton, without date, on *Crataegus*.

The above fungus is liable to confusion with *Tremella indecorata* Sommerf. which is also associated with various pyrenomycetes according to Torkelsen (1968). However, judged from the literature the latter species seems to have a firmer consistency and to become rather dark with age. Further, according to Torkelsen (1968), who has examined type material, the spores are appreciably larger, measuring 8·75–15 × 8–12·5 μm (9·6–12 × 8·4–10·8 μm on the type collection (Torkelsen, in litt.)) although this is not apparent from the measurements quoted by Bourdot & Galzin (1928) (i.e. 5–8 × 6–7 μm, mostly 6–6·5 μm). It should also be noted that *T. globospora* has an entirely different appearance from the fungus illustrated by Fries (1877–84) Pl. 200 as *T. indecorata*.

It would seem that this new species is identical with that described by Bourdot & Galzin (1928), Neuhoff (1931) and probably Martin (1952) etc., under the name *T. tubercularia* Berk. However, the reasons why this epithet cannot be used for the fungus under consideration have been outlined above. It is just possible that *Sebacina globospora* Welden, described from the United States in association with a pyrenomycete, may be found to be conspecific with *T. globospora* Reid, but Welden's (1935) description is not altogether convincing and he states that his fungus lacked clamp-connexions. Nevertheless, Martin (1952) regarded it as a synonym of *T. tubercularia*.

A NEW SPECIES OF *TREMELLA* REPLACING THE HYMENIUM OF *TYROMYCES LACTEUS* (FR.) MURR.

Tremella polyporina sp.nov. (Fig. 1, *i–k*)

Fructificationes in tubulis *Tyromycetis lactei*, redactissimae, stratii basidii solum compositae. Basidia 10–14 × 8–10·5 μm, globosa, vel subglobosa, longitudinaliter septata desuper ut videtur curciato-septata, quadrispora, probabiliter fibulata; sterigmata brevia, acuta, usque 8 μm longa. Sporae hyalinae, globosae, 4·75 μm diam, apiculo prominenti excluso.

Fructification virtually reduced to a layer of basidia lining the tubes and replacing the hymenium of *Tyromyces lacteus*. There are also a few indistinct supporting hyphae up to 2·5 μm wide with thin or slightly thickened walls. *Basidia* 10–14 × 8–10·5 μm, globose or subglobose, becoming longitudinally and cruciately septate, bearing four, short, pointed sterigmata up to 8 μm in length. It would seem that the basidia, which tend to have a rather broad base, possess a small basal clamp-connexion but it is difficult to be certain. *Spores* thin-walled, hyaline, globose, 4·75 μm diam, excluding the prominent apiculus.

In the tubes of *Tyromyces lacteus* which was growing on either *Ulmus* or *Fraxinus*, Cadzow Park, Glasgow, coll. D. A. Reid, 14. ix. 1959 (B. M. S. Foray) (TYPE).

The occurrence of this *Tremella* as a presumed parasite in the hymenium of *Tyromyces lacteus* is of interest as, so far as I am aware, it is the first record of a tremellaceous fungus parasitizing a polypore, unless it is eventually shown that *Protodaedalea* Imazeki, reported as having *Tulasnella*-like basidia is a polypore in which the hymenium has been replaced by such a fungus. Species of *Tremella* parasitizing other basidiomycetes are well known, e.g. *T. mycophaga* Martin and *T. simplex* Jacks. & Martin both of which parasitize *Aleurodiscus amorphus; T. obscura* (Olive) M. P. Christ, which parasitizes species of *Dacrymyces;* and *T. encephala* Pers. ex Pers. which parasitizes *Stereum sanguinolentum*, forming the distorted *Naematelia encephala* state, etc.

In the *Tyromyces* from Cadzow Park the hymenium has been replaced by *Tremella polyporina* over most of the hymenophore but here and there it is possible to find areas in which the polypore has been able to produce a hymenium with functional basidia bearing small allantoid spores measuring 3·2–4·0 × 0·75–1·0 μm.

Had this parasitized polypore been received from the tropics and had it not been for the few areas of hymenium in which homobasidia were found, one could have concluded that here was another genus of tremellaceous fungi with a poroid hymenophore similar to that of *Aporpium* Bond. & Sing. in Sing.

TWO CONFUSED *EXIDIA*-LIKE FUNGI WITH HYALINE, WHITISH OR OPALESCENT FRUIT BODIES

Of recent years taxonomists have attached considerable importance to the morphology of the basidium when attempting to produce a more natural classification of the Tremellaceae. Thus it has been shown that there are several types of basidium including the myxarioid type which

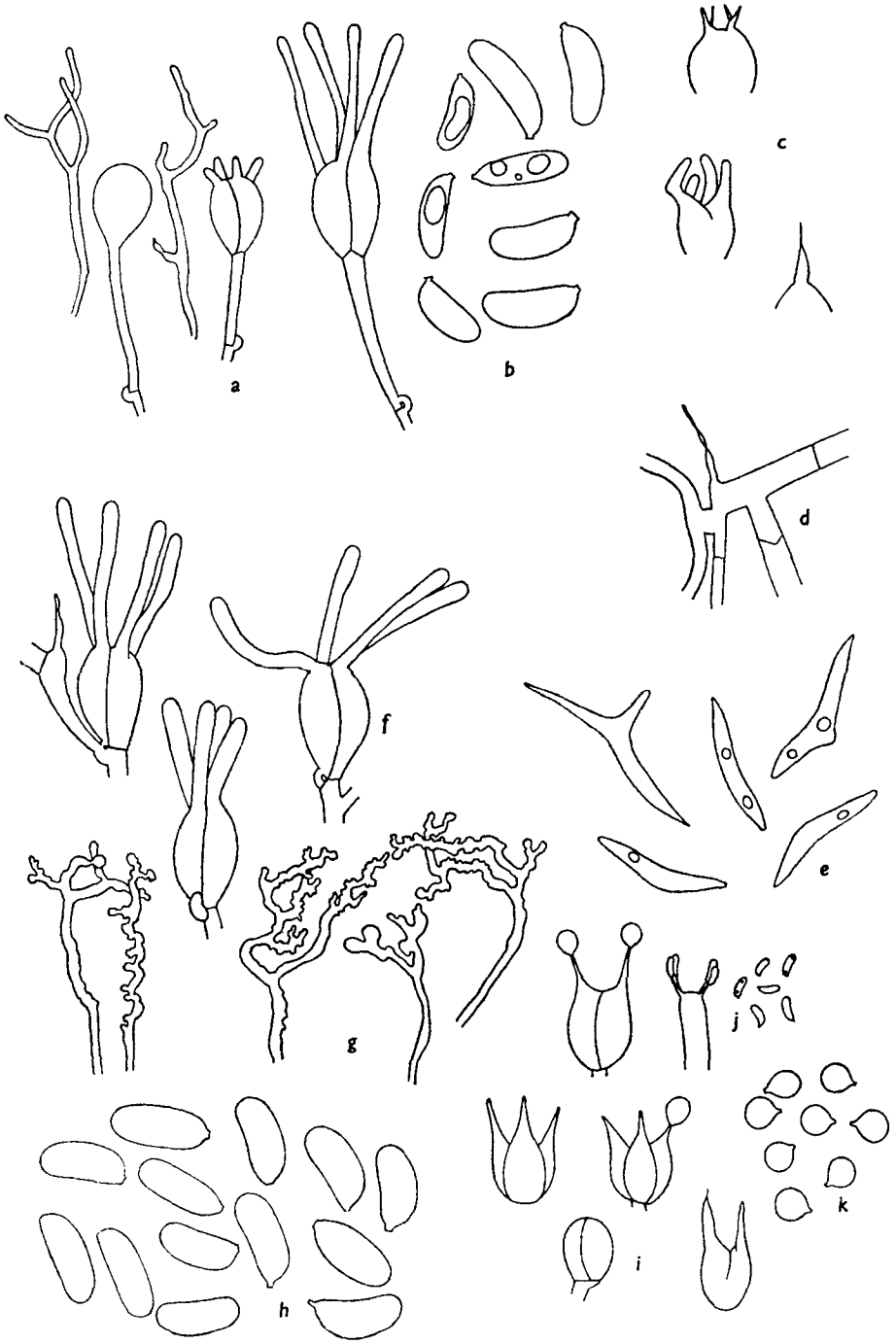

Fig. 1 *a*, *b*, *Myxarium nucleatum: a*, branched dikaryophyses and basidia in various stages of development; *b*, spores (both from Kinloch, Isle of Rhum collection). *c–e*, *Sebacina calospora: c*, basidia; *d*, hyphae; *e*, spores; *f–h*, *Exidia thuretiana: f*, basidia; *g*, dikaryophyses (both from Phillis Wood, Sussex, collection); *h*, spores from print (from West Dean, Sussex material, coll. Jane Dawson). *i–k*, *Tremella polyporina: i*, basidia; *j*, basidia and spores of the *Tyromyces lacteus; k*, spores of the *Tremella*. (All × 866.)

originates as a very long, slender club-shaped body, the apical portion of which assumes a more or less globose form before it becomes divided by cruciately arranged walls and is separated from an enucleate stalk-cell by a septum devoid of a clamp-connexion (Donk, 1966). This should be compared with the ordinary globose or oval type in which no enucleate stalk cell is formed; the stalk-like portion, although often very elongated, is never cut off from the head by a distinct septum, and as a result one of the four segments is usually continuous with the stalk.

This knowledge led Donk (1966) to emend the genus *Exidia* Fr. by the exclusion of all species with the myxaroid basidium. These species were transferred to *Myxarium* Wallr. In Britain there are two widespread species with hyaline or opalescent fructifications. Of these *E. thuretiana* (Lév) Fr. has the ordinary tremellaceous basidium and is retained in *Exidia*, and *Myxarium nucleatum* Wallr. (= *Exidia nucleata* (Schw.) Burt sensu auct. europ.). Accounts of these two fungi are given below.

EXIDIA THURETIANA (Lév.) Fr., *Hymenomycetes Europaei* p. 694, 1874. (Fig. 1, *f–h*).

Tremella thuretiana Lév., *Annls Sci. nat.* 3 sér. **9**, 127, 1848.

Fruit bodies originating as small, hemispherical pustules which soon expand into thick, centrally attached, pulvinate, applanate or slightly convex disks, 1–10 mm diam, but often becoming confluent to form spreading masses up to 6 × 3·5 cm. Compound fructifications are usually strongly plicate at the margin and lines of confluence may be clearly visible; occasionally the upper surface is irregularly convoluted but not normally in so striking a manner as that shown by Neuhoff (1935, Pl. 4, figs. 1–12). The margin is free, separable from the substrate, typically white, ciliate or villose especially on the underside and in some fruit bodies there are also a few fascicles of hyphae protruding from the hymenium towards the margin or even scattered over the surface of young fructifications. Fruit bodies are opaque, opalescent-whitish with a pale, hyaline, blue-grey tint, frequently becoming very slightly yellowish toward the thick central portion. *Texture* liquescent only in decay, otherwise firm-gelatinous, but drying down to a thin, brown, varnish-like film. In the latter state or when the fungus is revived in water it is possible to see that in certain fruit bodies there are quite numerous small whitish crystalline inclusions; occasionally these inclusions may be numerous, large and very conspicuous. *Structure:* fructifications up to 3 mm thick, formed of lax, loosely entwined, thin-walled, hyaline, clamp-bearing, narrow hyphae 2–3 μm wide, in a gelatinous matrix. At the surface there is a distinct hymenial layer up to 117 μm wide, consisting of functional basidia irregularly disposed throughout the entire thickness, and also conspicuously branched dikaryophyses. Although the hymenium reaches such a great thickness it does not thicken in the usual sense, for young basidial initials can be seen arising at any level, sometimes at considerable depth. Functional basidia with strong staining properties and long sterigmata were observed at a depth of 117 μm. Furthermore the branching dikaryophyses were present only at the surface of the hymenium and not in the lower

regions. The sterile cilia toward the margin of the fructification are formed superficially from hyphae similar to those of the flesh but they are parallel, densely compacted and strongly agglutinated. *Dikaryophyses* rather densely crowded at the surface of the fruit body, consisting of a main trunk about 2 μm wide which becomes conspicuously branched near the apex. *Basidia* 15·6–24·0 × 11·3–14 μm, globose or ovate, sessile or with a very short stalk and a basal clamp-connexion, lacking a stalk-cell, cruciately divided and with four elongated, undulating sterigmata which are 2 μm wide and may reach 117 μm in length. *Spores* (from twenty-two spore-prints), (12·75–) 13·5–19·5 × (4·75–) 5–7 (–7·5) μm (see Table 1), thin-walled, hyaline, allantoid, varying to ellipsoid or subcylindric. On germination the spores give rise to a similarly shaped but smaller secondary spore borne on a short sterigma.

Table 1. *Spore size from twenty-two spore-prints of* E. thuretiana

Collection data	Spore-size from print (μm)
Fairmile Bottom, Sussex, 25. ii. 1967	15·0–20·5 × 5·0–6·5
Knor Hill, Sussex, 30. vii. 1967	13·5–19·0 × 5·0–7·0
2nd collection 30. vii. 1967	13·5–19·5 × 5·0–6·5
Goodwood, Sussex 28. ix. 1967	12·75–16·75 × 5·2–7·2 (–7·5)
25. ii. 1968	15·0–20·8 × 4·75–6·5
West Dean Wood, West Dean, Sussex 21. ii. 1968	(12·0–) 14·0–17·0 × 5·0–6·0
West Dean, 26. i. 1969	14·0–19·0 × 5·5–6·5
West Dean, 26. i. 1969	15·0–18·5 × 4·5–6·5
West Dean, 26. i. 1969	13·5–19·5 × 5·0–7·0
West Dean, 26. i. 1969	14·5–19·0 × 5·0–6·5
West Dean, 26. i. 1969	14·5–19·0 × 4·5–6·5
West Dean, 26. i. 1969	12·5–18·0 × 4·5–6·0
West Dean, 26. i. 1969	13·7–18·5 × 5·0–6·0
West Dean, 26. i. 1969	14·0–18·0 × 5·0–6·5
West Dean, 26. i. 1969	14·0–19·0 × 5·5–7·0
West Dean, 26. i. 1969	13·0–18·0 × 4·5–6·0
West Dean, 26. i. 1969	13·0–16·5 × 4·5–6·0
West Dean, 26. i. 1969	14·5–19·0 × 5·0–6·0
West Dean, 26. i. 1969	15·2–17·75 × 4·75–5·2
Phillis Wood, Sussex, 24. ii. 1969	13·0–16 × 5·0–6·5
Benges, Eartham, Sussex 13. ii. 1969	(14·0–) 16·0–18·0 × 5·0–5·75
Edzell, Forfarshire, 14. viii. 1964	13·2–18·2 × 5·75–7·2

Table 2. *Spore size from nine spore-prints of* M. nucleatum

Collection date	Spore-size from print (μm)
West Dean, Sussex, 26. i. 1969	(8·75–) 12·0–13·75 × 3·75–4·75
West Dean, Sussex	(10·0–) 11·2–13·75 × 3·75–4·75
West Dean, Sussex	9·75–12·75 × 3·5–4·2 (–4·75)
West Dean, Sussex	10·0–14·2 × 4·0–4·2
Walberton, Sussex, 20. ii. 1970	9·75–16·0 × 4·0–5·2 (–6·2)
Walberton, Sussex	10·0–14·0 × 5·0–6·2
Walberton, Sussex	9·75–13·75 × 4·0–5·2
Colworth House, Beds. 13. x. 66	9·75–12·2 × 3·75–5·0 (–5·2)
Blenheim Park, Oxn. 23. x. 66	8·75–12·2 × 4·2–5·0 (–5·2)

This fungus is found most frequently on *Fagus* but it has also been collected in Britain on *Corylus*, *Fraxinus*, *Ilex*, *Malus sylvestris*, *Quercus* spp., including *Q. cerris*, *Sorbus aucuparia* and *Tilia* × *europaea*.

Collections examined: W. Sussex: Arundel, B. M. S. Foray, 24. v. 1926; on *Tilia* × *europaea*, Swanbourne Lake, Arundel, coll. Reid, 10. v. 1969; on *Fagus*, Fairmile Bottom, Slindon, coll. Reid, 25. ii. 1967, 19. xi. 1967; on *Fagus* and *Fraxinus*, Goodwood, coll. Reid, 28. ix. 1967, 25. ii. 1968, 21. ix. 1968; on dead, standing *Corylus*, Phillis Wood, Chilgrove, coll. Reid, 24. ii. 1969; West Dean Wood, West Dean, coll. Reid, 21. xii. 1968, 26. i. 1969 (fifteen separate collections); ibid., coll. Jane Dawson, 21. iii. 1969; On *Quercus*, Benges, Eartham, coll. Reid, 13. xii. 1969; on *Fagus*, Knor Hill, Eartham, coll. Reid, 30. vii. 1967 (three separate gatherings); without locality, coll. R. Rayner, Feb. 1969; on *Fagus*, Madehurst, coll. Reid, 23. ii. 1970. Surrey: Weybridge, coll. A. A. Pearson, Feb. 1920; Horseley, coll. Pearson, Mar. 1922, 4. iii. 1922, 11. iii. 1922; on *Fagus*, Ranmore Common, coll. D. A. Reid & C. Booth, 16. xi. 1957. Somerset: Batheaston, coll. C. E. Broome, 29. xi. 1866. Wilts.: Donhead St Mary, coll. T. W. Dunston, 9. i. 1940, 9. iv. 1940. Glos.: on *Fraxinus*, Stinchcombe Hill, nr. Dursley, coll. R. W. G. Dennis, 13. iv. 1954. Bucks.: Great Missenden, coll. Reid, 5. xi. 1962. Warwicks.: Alvecote Pools, coll. M. Austin, 23. x. 1967. Caerns.: Nantgwynant, coll. Reid (B. M. S. Foray), 19. v. 1958. Co. Down: Saintfield Demesne, coll. Reid (B. M. S. Foray), 5. ix. 1964. Cumberland: Keswick Foray, 19. ii. 1922; on living *Ilex aquifolium*, Thirlmere, coll. Reid (B. M. S. Foray), 28. v. 1954; N.E. Yorks.: Mulgrave Woods, Sandsend, coll. E. M. Wakefield, 28. ix. 1953; Hackness, coll. E. Caulton, 16. iv. 1955; on *Malus sylvestris*, Gundale, W. G. Bramley K/60/11, 28. ii. 1960. Selkirks.: on *Fagus*, Selkirk, coll. F. A. Mason, 20. iii. 1928. Lanarks.: Bearsden, Glasgow, coll. Reid, 13. ix. 1962. Forfars.: as *Corticium viscosum*, Glamis, Herb. Berk., Feb. 1874; the Burn, Edzell, coll. Reid, 14. viii. 1964. Kincardes.: Crathes Castle, coll. Reid, 16. viii. 1964. Argylls.: on *Ilex aquifolium*, north shore of the east end of Loch Ba, Isle of Mull, coll. Dennis, 16. iv. 1969. Inverness.: on dead *Sorbus aucuparia*, beside Allt Slugan a Choilich, Isle of Rhum, coll. Dennis, 14. iv. 1961; on *Acer pseudoplatanus* and *Quercus cerris*, Kinloch, Isle of Rhum, coll. Dennis, 10. iv. 1961, 16. iv. 1961, 29. viii. 1962. (In addition to the collections cited above, there are in the Kew Herbarium several collections ex. Herb. Broome from Somerset and also material of other collectors from Worcestershire, Westmorland and Midlothian. However in this old material the basidia are not sufficiently well preserved to enable me to confirm the identity of the gatherings beyond doubt.)

It should be noted that it is sometimes possible to be misled as to the identity of material for very occasionally one finds specimens in which the spores have collapsed, leaving only the smaller secondary spores. In such instances it is usually possible to keep the collection damp for 1–2 days and obtain a spore-print which will be found to consist of the normal large-sized spores. Again, specimens kept for long periods in excessively damp conditions in tins, etc., may show basidia with a short but distinct stalk, although this is never differentiated into a stalk-cell.

Regarding the nomenclature of this fungus, Donk (1966) was of the opinion that the name should be *Exidia albida* and in fact he went so far as to state that 'the current conception of *Tremella albida* Huds. is firmly established. Hudson's protologue strongly suggests that it is correct. The first application of the name based on personal observations (*Engl. Bot.*, Pl. 2117) is also in agreement, as one of the details the plate even shows the sausage-shaped spores characteristic of true species of *Exidia*. Brefeld reintroduced the species in this sense in modern literature and Neuhoff followed him. Interpretations of *T. albida* as a species of *Tremella* cannot be upheld and must be renamed.' Despite Donk's assertion that Hudson's fungus cannot be interpreted as a *Tremella*, I disagree since in my view

Hudson's description would seem to apply better to washed-out *Tremella mesenterica*, to a milky white *Tremella* which is not uncommon in Britain, to *Myxarium nucleatum* or even *Dacrymyces* spp.

Hudson's protologue reads 'sessilis gelatinosa difformis albida' and is followed by the observation 'Frons gelatinosa, difformis, albida subinde glaucescens et flavescens, subrugosa, solida, diaphana'. The protologue is scarcely diagnostic but in the description the use of the term 'frons' suggests a fructification standing away from the substrate while the rest of the sentence indicates that it was irregularly wrinkled or lobed and basically white. However, the key word in the description is 'diaphana' for this is certainly not applicable to the *Exidia* under discussion but could well apply to the *Tremella*. The fact that Pl. 2117 in *English Botany* undoubtedly shows an exidioid fungus is scarcely relevant.

MYXARIUM NUCLEATUM Wallr., *Flora CryptogamicaGermaniae* p. 260, 1833, non *Tremella nucleata* Schw. (Fig. 1, *a*, *b*).

Tremella gemmata Lév., Demidoff, *Voyage dans la Russie Méridionale et la Crimée* **2**, 96, 1842.

Naematelia gemmata (Lév.) Fr., *Hymenomycetes Europeai* p. 697, 1874.

Exidia gemmata (Lév.) Bourd. & Maire, *Bull. trimest. Soc. mycol. Fr.* **36**, 69, 1920.

Exidia alboglobosa Lloyd, *Mycological Writings* **7**, 1356, 1925. (Synonymy confirmed by examination of type in **BPI**)

Fruit bodies consisting of small hemispherical pustules, 2–10 mm diam, which may coalesce to form compound structures extending for several centimetres over the substrate. The sporophores, which may be colourless or somewhat whitish opalescent, often with a pinkish, lilaceous or amethyst tinge, have a delicate, diaphanous, watery-gelatinous texture. As a result it is easy to see that in the majority of fructifications there is a relatively large, conspicuous, white inclusion or 'nucleus' of calcium oxalate. In compound fruit bodies there may be several nuclei depending upon the number of individual fructifications involved. These large fruit bodies may be somewhat wrinkled or nodulose. When dry the sporophores shrink to a brown, varnish-like film. *Structure:* fructifications up to 1·5 mm thick, consisting of loosely interwoven, hyaline, clamp-bearing hyphae, 1·5–2·5 μm wide, in a watery-gelatinous matrix. These hyphae have thin or slightly thickened walls. At the surface of the fruit body there is a well-developed hymenium, 100 μm wide, comprising rather densely crowded basidia and branched dikaryophyses. The basidia in the specimen sectioned appear to originate in the upper 50 μm of the hymenium, each at about the same level, and form what is almost a palisade layer, overtopped up to 13–20 μm by the dikaryophyses. *Dikaryophyses* densely crowded and entwined at the surface of the fruit body, consisting of a trunk 1·5–2 μm wide with a number of narrow lateral branches toward the apex. *Basidia* arising as elongated fusiform or clavate structures in which the apical portion becomes more or less globular and is cut off from a distinct elongate, enucleate (?) stalk-cell by cruciately arranged walls. The globular portion of the basidium, 11–15·6 × 9–10·4 μm, lacks a clamp-

connexion but the stalk-cell, 13–28 μm in length, has a clamped basal septum. Each basidium bears four long, undulating sterigmata. *Spores* (8–) 10–14 (–18·2) × 3·5–5 (–5·2) μm measured on the fruit body but with a range of 8·75–14·2 (–16·0) × 3·75–5·0 (–6·2) μm from examination of six spore-prints. The spores, which vary from narrowly ellipsoid to subcylindric to slightly allantoid, are thin-walled, hyaline, and germinate seemingly either by the production of germ-tubes or by a similarly shaped but smaller secondary spore.

On dead wood of various trees especially *Fagus* and *Fraxinus*. In Britain it has also been found on *Acer*, *Hedera*, *Quercus* and *Tilia*.

Collections examined: W. Sussex: on *Hedera*, Arundel, coll. Dennis, 24. vii. 1947; on *Fraxinus*, Elmer Sands, nr. Bognor Regis, coll. Reid, 15. viii. 1965; on *Acer*, Slindon, coll. Reid, 16. iv. 1966; on *Fagus* and *Fraxinus*, West Dean Wood, West Dean, coll. Reid, 26. i. 1969; Wepham, nr. Arundel, coll. Reid, 24. ii. 1969; on *Tilia*, Walberton, coll. Reid, 20. ii. 1970 (five collections). Surrey: Kew, coll. G. Massee, Nov. 1910. Wilts.: Donhead St Mary, coll. T. W. Dunston, 15. i. 1946. Beds.: Deadmansea Wood, Whipsnade, coll. Reid, 8. x. 1961; on *Tilia*, Colworth House, Sharnbrook, coll. Reid, 13. x. 1968 Herts.: King's Langley, coll. Reid, 26. x. 1953; Aldbury Common, coll. Reid (B. M. S. Foray), 12. v. 1955. Hunts.: on *Fraxinus*, Monks Wood, coll. Dennis, 15. x. 1960, 15. x. 1961. Oxon.: on *Fraxinus*, Blenheim Park, Woodstock, coll. N. Sinnott (no. 912), 23. x. 1966. Herefords.: Credenhill (?), Hereford Foray, Sept. 1926. Glos.: Thornbury, coll. Dennis, 11. xi. 1961. W. Yorks.: Becca Park, Aberford, coll. W. G. Bramley, 9. i. 1938. NE. Yorks.: on *Fraxinus*, Cluntrell Wood, Pickering, coll. Bramley, 7. i. 1958. Co. Down: Clandeboye Demesne, coll. Reid (B. M. S. Foray), 7. ix. 1964. Inverness-shire: Kildonan Wood, Isle of Eigg, coll. Dennis, 27. vii. 1951; Papadil, Isle of Rhum, coll. Dennis, 24. vii. 1951; on *Fagus*, Kinloch, Isle of Rhum, coll. Dennis, 29. ix. 1961; Kinloch, Isle of Rhum, north shore of Loch Scresort, coll. Dennis 3. x. 1961; on *Quercus*, South Morar, coll. Dennis, Sept. 1962. Kincardine: Crathes Castle, coll. Reid (B. M. S. Foray), 16. viii. 1964.

In addition to the above gatherings there are in the Kew Herbarium numerous specimens ex Herb. C. E. Broome from Somerset, ex. Herb. Berk. from Essex, Northants. Leics. and Flints. as well as material of other collectors from Cornwall, Warwicks. and Leics. However, although these specimens have conspicuous nuclei in most instances and are probably correctly assigned to *M. nucleatum*, their age and poor state of preservation has prevented detailed examination of the basidia which is essential for confirmation of their identity.

Hitherto it had been assumed that *M. nucleatum* and *E. thuretiana* could be easily separated in the field, but the current investigation has shown that this is not always possible. Generally *M. nucleatum* can be recognized by its transparent, watery gelatinous fruit bodies with a conspicuous white nucleus, but it can form sporophores of a firmer texture with an opaque opalescent appearance, and nuclei may be lacking. It is these less typical fructifications which are liable to confusion with *E. thuretiana*. It should also be noted that fruit bodies of the latter fungus may contain very numerous small inclusions of calcium oxalate and very rarely these may be as conspicuous or even more conspicuous than those of *M. nucleatum*. Many of the microcharacters of the two fungi are similar, although in *M. nucleatum* the dikaryophyses tend to be narrower and the spores and basidia smaller. Nevertheless, separation based on spore size alone is by no means infallible. The only sure distinction is to be found in the structure of the basidium, a fact which serves to emphasize the inadvisability of trying to resurrect old names tied to inadequate or ambiguous descriptions and plates, at the expense of soundly established epithets.

In his discussion of this fungus, Donk (1966) asserts that the correct name should be *M. hyalinum* but again he has upset the nomenclature by resurrecting an old epithet of Persoon which is tied to the following inadequate diagnosis: 'congesta, hyalina alba subrotunda oblongaque laevis aut subplicata' with the added datum '2–3 lin magna est.' This could apply to small specimens of *Tremella* spp., to *Exidia thuretiana* and to old decolorized fructifications of various *Dacrymyces* spp., as well as to the species under discussion. I cannot see any advantage in following Donk on this point and I prefer to accept Wallroth's epithet which is linked to a more adequate description.

It should be noted that in Europe there has been a tendency to refer to the fungus under discussion as *E. nucleata* (Schw.) Burt following the precedent set by Bourdot & Galzin (1928). However, even if one could show convincingly that the American and European fungi were conspecific, and there is currently some doubt on this matter, the fungus originally described as *Tremella nucleata* Schw., and now widely known as *E. nucleata*, could not be transferred to *Myxarium* with this epithet since the name is preoccupied by *M. nucleatum* Wallr. (see Donk, 1966). However, some further observations on *E. nucleata* (Schw.) Burt are perhaps pertinent.

Donk (1966) noted: 'It is now customary to regard *E. gemmata* (= *M. hyalinum* [= *M. nucleatum* Wallr.]) and *E. nucleata* as distinct species.' This treatment is perhaps open to question, since Pilát (1957) recently regarded the American and European fungi as conspecific, while Martin (1952) also hinted that he was of the same opinion. Going back further, Berkeley (1860), Burt (1921) and Bourdot & Galzin (1928) also regarded them as conspecific. However, Lloyd (1922), erroneously using the name *Naematelia globulous* Corda for the European fungus, wrote that 'the European plant...is, I think, distinct though very close to the North American *Naematelia nucleata*. The European species is paler color, does not become brown, nor cerebriform when old, and the spores are larger and more strongly curved.' Neuhoff (1936) subscribed to this view. However Martin (1952) thought Neuhoff's 'illustrations col. pl. 4, figs. 13–25 and especially pl. 5, figs. 1, 2 suggest our [American] species'. As to spore size, taking a combined range published by various authors relating to North American material Donk (1966) quoted 7·4–11 × 3–5·5 μm and following an examination of American material in the Kew Herbarium I have obtained a similar range of 8·75–12 × 3·2–4·2 μm. This is very close to the range obtained from British material, namely (8–) 10–14 (–18·2) × 3·5–5 (–5·2) μm from fruit bodies and 8·75–14·2 × 3·75–5 (–5·2) μm from spore-prints. Further, I am unable to see any differences in spore shape between the fungi from the two regions. Clearly if they are distinct the differences are very slight and direct proof will have to come from mating experiments.

AN ACCOUNT OF A FRUCTIFICATION OF *MYXARIUM NUCLEATUM* SHOWING PROBABLE CONIDIAL FORMATION

Fructifications up to 1 cm diam, pustular-cerebriform but some sporophores becoming confluent and amorphous, whitish hyaline, opaque and firm-gelatinous as in *E. thuretiana*, which it closely resembles not only in colour and texture but also in having a minutely ciliate or villose margin and underside. In one of the three fruit bodies there are two conspicuous 'nuclei'. *Structure:* fructifications up to 3 mm thick, formed of thin-walled, hyaline, clamp-bearing hyphae, 1·5–2·0 (–2·5) μm diam, which are loosely entwined in a gelatinous matrix. At the surface of the sporophore there is a 'hymenial' layer about 100 μm thick in which there are, in the lower region, scattered basidia. The basidia (Fig. 2*c*) are seemingly of the myxarioid type consisting of a globular, cruciately divided head, 12–16 × 10–12 μm, and an elongated stalk cell up to 28 μm in length. The basidia each bear four elongated sterigmata up to 60 μm in length. Basidiospores were not seen. Above the basidia there is a dense, deeply staining zone about 40 μm wide composed of crowded, grape-like clusters of conidiophores (?) (Fig. 2*a*). These are branched, 1·5–2·0 μm wide, and terminate in more or less globular bodies 4·75–6·0 μm diam, with a clamp-connexion at the base. Some of these globular bodies were observed with a short apical 'beak' from which it is assumed that the conidia (?) arise. The conidia (?) (Fig. 2*b*), 2·75–3·5 × 1·75–2·0 μm, are mostly reniform or allantoid but some are elliptical, and in many cases adhere in pairs, always with their concave surfaces facing inward.

On *Ilex aquifolium*, Wakehurst Place, E. Sussex, coll. R. W. G. Dennis, 11. ii. 1968.

The identity of this fungus is somewhat uncertain but so far as I can judge the basidia appear to be of the myxarioid type and hence the specimen would seem to be referable to *M. nucleatum* rather than to *E. thuretiana*, despite the fact that it shows such close similarity in external features to the latter.

Whether the structures referred to above as 'conidiophores' and 'conidia' have been correctly interpreted remains to be seen. The alternative explanation would be that they represent the basidia and basidiospores of a parasitic fungus, but I have seen no evidence that the globular structures become septate or produce sterigmata. Nevertheless since so many of the 'conidia' are in pairs, always with their concave surfaces facing inward, one might argue that they were basidiospores fusing in pairs. While no parasitic fungus answering to the above account has been described there are a number of reports of various members of the Tremellales in which conidial formation is not unlike that found in the fungus under discussion. (See Olive (1946) and Christiansen (1954), for *Tremella obscura;* Olive (1947) for *Platygloea peniophorae;* Bandoni (1959) for *P. abdita;* Christiansen (1959) for *Ceratobasidium mycophagum.*)

Despite the doubts and uncertainties relating to the specimen, I have ventured to publish these incomplete observations in the hope that it may stimulate others to look for similar material and to supplement the data.

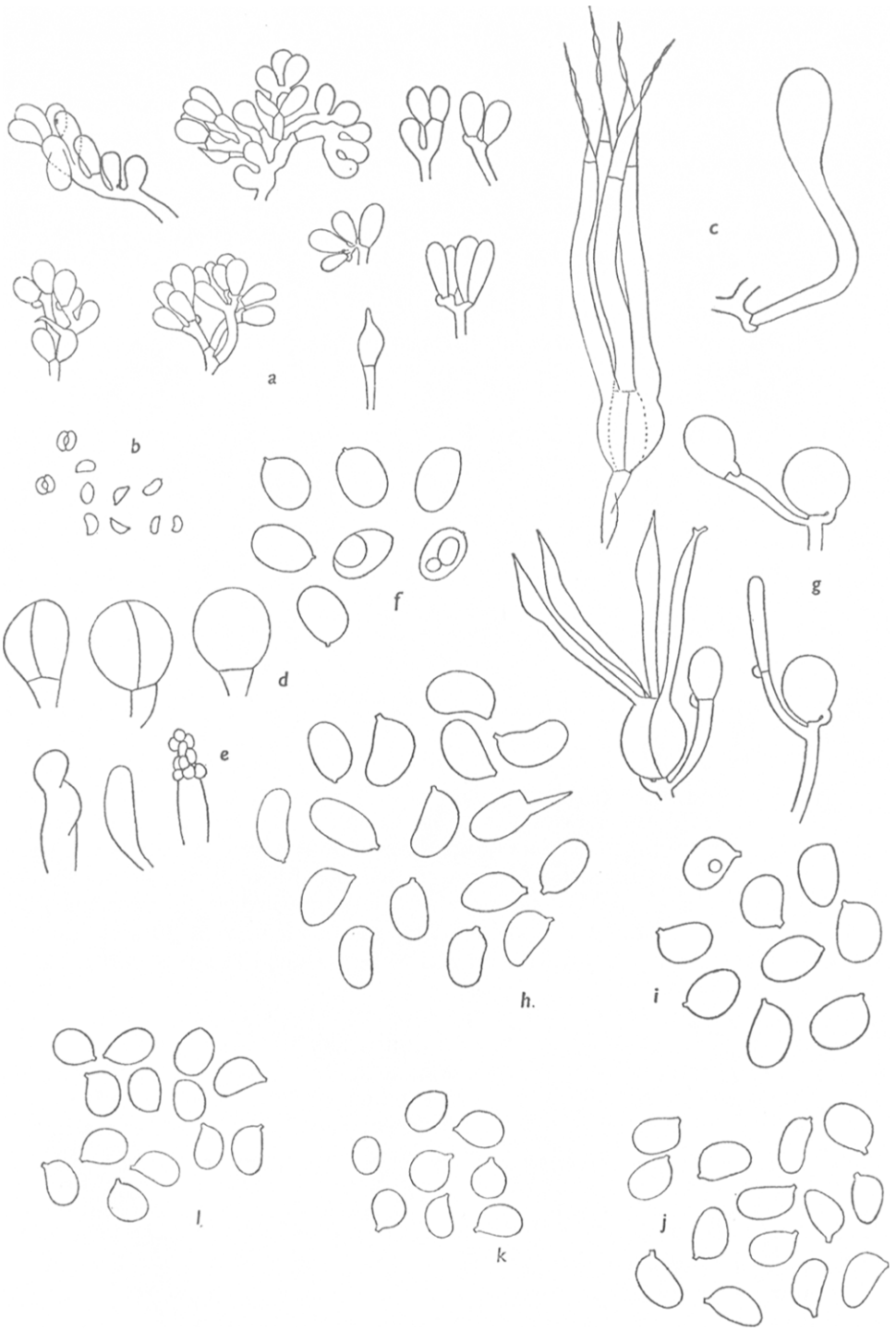

Fig. 2 *a–c, Myxarium nucleatum: a,* ? conidiophores; *b,* ? conidia; *c,* two basidia. *d–f, Basidiodendron cinereum: d,* basidia; *e,* gloeocystidia, one showing apical encrustation; *f,* spores. *g–l, Exidiopsis opalea: g,* basidia showing proliferation from side away from clamp-connexion; *h,* spores (both from Loch Maree collection); *i,* spores from print of type collection of *Sebacina molybdea; i,* as previous but spores from fruit body; *k,* spores from fruit body of *S. molybdea* (from Martin no. 4923); *l,* spores from fruit body of *E. opalea* (from Bourdot & Galzin no. 16577). (All ×866.)

REDISPOSITIONS OF *SEBACINA SUBHYALINA* AND *EXIDIOPSIS LACCATA*

Myxarium subhyalinum (Pears.) Reid, comb.nov. (Fig. 4, *f–i*)

Sebacina subhyalina Pearson, *Trans. Br. mycol. Soc.* **13**, 71, 1928.
Sebacina sublilacina Martin, *Mycologia* **26**, 262, 1934.
Exidiopsis sublilacina (Martin) Ervin, *Mycologia* **49**, 123, 1957.

Sporophores forming a thin, adnate, waxy-gelatinous blue-grey film with numerous small calcareous inclusions but drying to an indistinct vernicose film. In section the fruit body varies from 11 to 70 μm in thickness and consists of a dense granular basal layer of very indistinct, highly gelatinized narrow hyphae, which lie parallel to the substratum in the basal region but gradually curve upward and give rise to the hymenium. The latter, which comprises a single layer of basidia, dikaryophyses and cystidia varies in thickness from 8 to 20 μm. *Dikaryophyses* 2–2·5 μm wide, thin-walled, hyaline, often tortuous and either unbranched or slightly branched at the apex. '*Cystidia*' very numerous, 24–60 × 3·5–5·2 μm, thin-walled, hyaline, lanceolate, tapering gradually toward the acute, or rarely obtuse, apex and projecting for up to 30 μm. *Basidia* myxarioid, consisting of a globular, cruciately divided head, 8–10 × 6·5–8 μm and a stalk-cell up to 16 μm in length with a basal clamp-connexion. Epibasidia up to 8 μm long. *Spores* (5·75–) 6·2–8 × (3·5–) 3·75–4 μm, thin-walled, hyaline, elliptical, sometimes laterally depressed and germinating by repetition.

On *Fagus*, Bearsden, Glasgow, coll. Reid, 13. ix. 1962.

In addition to the collection described above there are other British gatherings from Killarney, Eire, coll. Dennis, Aug. 1946; On *Fagus*, Buckhurst Park, Sussex, coll. A. A. Pearson, 30. x. 1926 (TYPE of *S. subhyalina*).

Examination of the type material of *S. subhyalina* has shown that this species is one which possesses myxarioid basidia, as noted by Wells (1962), simple or slightly branched, tortuous diakryophyses, and pointed cystidia, and that it is indistinguishable from *S. sublilacina* Martin in the holotype of which Wells (1962) was also able to demonstrate the presence of similar sphaeropedunculate basidia. Because of priority of publication of *S. subhyalina*, the epithet *sublilacina* has to be reduced to synonymy under the former name.

Cystidia were seemingly not detected by Wells (1962) in the type specimen of *M. subhyalinum* which no doubt led him to reduce Pearson's species to synonymy under *S. podlachica* Bres. The latter is closely related to *M. subhyalinum* differing chiefly in the lack of cystidia. It remains to be seen if this is a constant character. (A specimen of *S. podlachica* preserved at Kew, 'ad truncos populneus, Polonia rossia, coll. Eichler, 1900,' and labelled typus by Bresadola, represents a different fungus from Bresadola's specimens at Stockholm (nos. 96, 63) on *Betula*, which were also collected by Eichler. In the Kew material, which cannot properly be regarded as type since it is on the wrong host, the basidia are not only of the non-myxarioid type but they are larger, 14–18·2 × 11–12·5 μm, as are the spores, which measure 8–12·2 × 4·5–5·2 (–5·75 μm.)

Apart from the British collections cited, two of which are originally

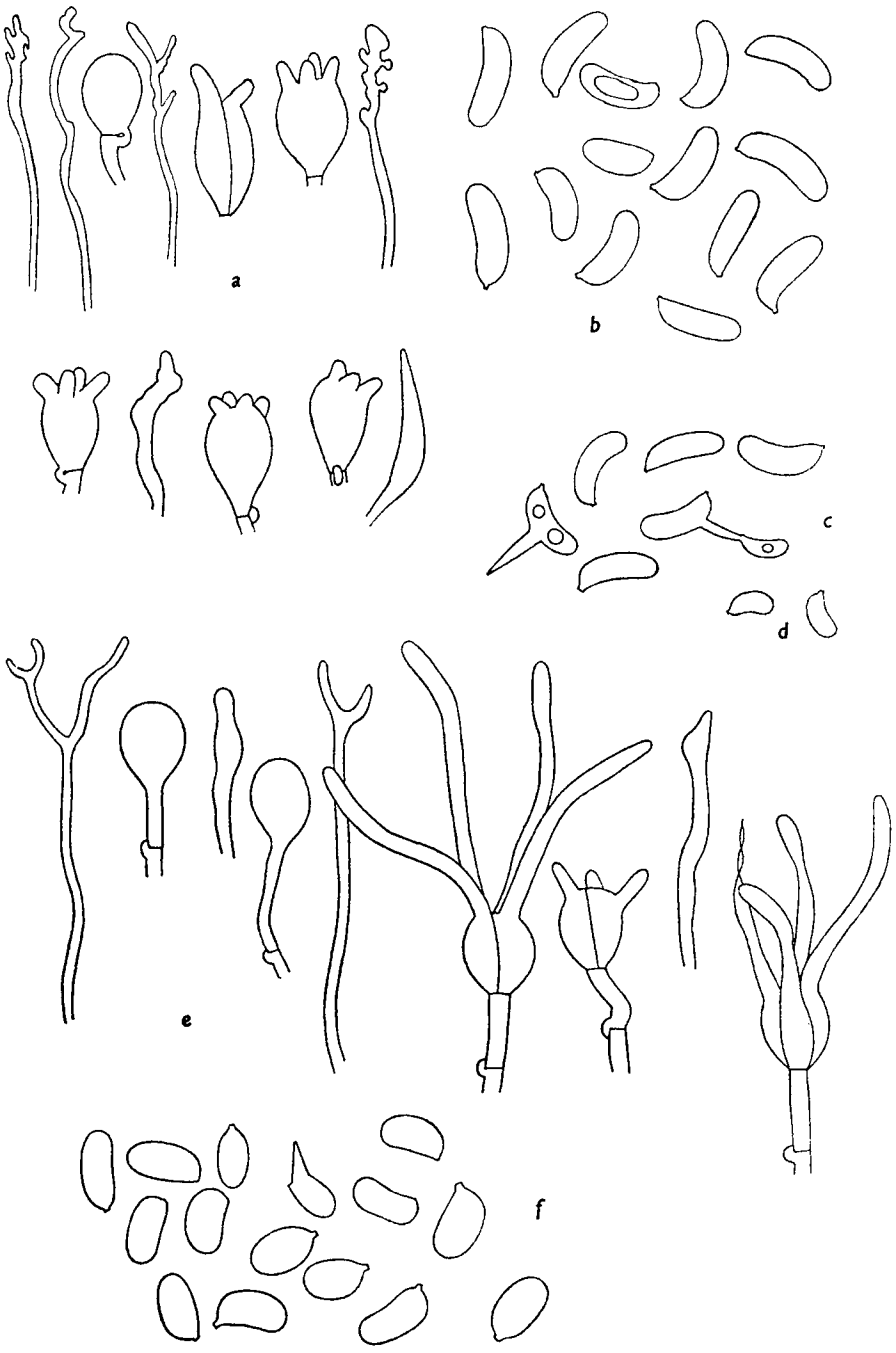

Fig. 3*a–d, Exidiopsis effusa: a,* irregularly branched dikaryophyses, basidia in various stages of development and cylindrical or unbranched dikaryophyses; *b,* spores from print (both from Wakehurst Place collection); *c,* spores, two of which have germinated; *d,* three secondary spores (both from Ellerburn collection). *e, f, Myxarium laccatum: e,* scantily branched dikaryophyses, ? unbranched dikaryophyses and basidia in various stages of development; *f,* spores. (All × 866.)

reported as *S. sublilacina* by Reid & Austwick (1963), the only other European records of this fungus would seem to be those of Christiansen (1959) as *S. sublilacina*, from Denmark. Christiansen's records of *S. subhyalina* presumably refer to *S. podlachica* Bres. since he specifically states that cystidia are lacking in these gatherings.)

There is also a British gathering which although matching *M. subhyalinum* with regard to spores, basidia aud dikaryophyses, lacks cystidia and should presumably be referred to *S. podlachica*. Details of this gathering, which consisted of small whitish pustules resembling insect eggs are as follows: on *Quercus* sp., woods overlooking Amberley Wild Brooks, Parham, W. Sussex, coll. Reid, 1. iv. 1970.

Myxarium laccatum (Bourd. & Galz.) comb.nov. (Fig. 3,*e,f*)

Sebacina laccata Bourd. & Galz., *Bull. trimest. Soc. mycol. Fr.* **39**, 262, 1924.
Exidiopsis laccata (Bourd. & Galz.) Luck-Allen, *Mycologia* **53**, 340, 1961.

Sporophores scattered irregularly over an area of 1 cm^2, consisting of several small pustules 1–2 mm diam, and others which by confluence have formed thin effused fruit bodies up to 5 mm in length and 1·5 mm in width. These fructifications which are greyish hyaline and opaque, have a soft gelatinous texture and a pruinose surface. In section, the sporophores are 100–130 μm thick and are formed of thin-walled, clamp-bearing hyphae up to 2·5 μm wide, in a gelatinous matrix. At the surface there is a hymenial zone up to 60 μm wide consisting of myxarioid type basidia arising at various levels but overtopped by dikaryophyses. The latter, which are 1·5–2 μm wide, are numerous, thin-walled, hyaline and branched although not very extensively. There are also some sterile, subcylindrical, undulating bodies of uncertain affinity which may be basidial initials, gloeocystidia or subcylindrical dikaryophyses. *Basidia* consist of a globose or subglobose head, 12–14 × 10–12 μm, which becomes four-celled by the development of longitudinal, cruciately arranged septa, and an elongated stalk cell up to 24 μm in length. The latter is separated from the globular fertile portion by a septum devoid of a clamp-connexion although the stalk-cell does possess a clamp at its base. *Epibasidia* flexuous, up to 40 μm long. *Spores* 8·75–12 × 4·2–6 μm, thin-walled, hyaline, varying from elliptical to broadly elliptical and sometimes slightly laterally depressed. Germination is by repetition or possibly by a germ-tube.

Habitat: very inconspicuous beneath the bark of a twig of *Tilia* sp., Houghton, Huntingdonshire, 15. iii. 1969, coll. Reid.

When Bourdot & Galzin (1924) described *Sebacina laccata* they also published an account of *S. mesomorpha* which differed from the former in having smaller basidia and spores. The spores of *S. laccata* were said to measure 12–15 × 6–9 μm and those of *S. mesomorpha* 9–12 × 4·5–6 μm. Assuming Bourdot & Galzin were correct in distinguishing two taxa on these characters, then the specimen under discussion would be referable to *S. mesomorpha*. However, Neuhoff (1936) was apparently the first to suggest that *S. laccata* was merely a large-spored form of *S. mesomorpha* but he did not formally relegate *S. laccata* to synonymy under this epithet. Luck-Allen, fide Wells (1962), agreed that the two names referred to the same

fungus but she proposed that *S. mesomorpha* be reduced to synonymy under *S. laccata*. In this she was followed by Wells (1962) after he had studied authentic material of both organisms preserved at Paris. According to Wells the syntypes of *S. laccata* are somewhat thinner in section with larger basidia and spores than those of the syntypes of *S. mesomorpha*, but other specimens he examined were found to be intermediate. Although the size of the basidia and spores of the collection described above agree very closely with those of *S. mesomorpha* as noted by Bourdot & Galzin (1924), the spore shape in this material completely covers the entire range of variation within the species in its broad sense as figured by Wells (1962), (fig. 7, *f–h*).

As regards the relationships of *S. laccata s.l.* there seems little doubt that these lie with *Myxarium hyalinum* Wallr. Macroscopically the fructification of *S. laccata* is quite like that of the latter fungus, although thinner and more effused. Further, Wells (1962) has noted that in some fruit bodies of *S. laccata* there are mineral accretions. Microscopically there is also very close similarity although the spores of *S. laccata* tend to be broader but above all both fungi have the same myxarioid type of basidium. Thus Wells notes, 'In *Sebacina laccata*,...an enucleate stalk is developed by divergence of the longitudinal septa at the apex of the stalk'. However, he also observed, 'The morphology of the basidia is quite varied. In the thinner specimens they are obovate to subglobose with the enucleate stalks formed only in a minority of cases, whereas in the thicker specimens the basidia are predominantly sphaeropedunculate and only rarely lack the stalks'. If these observations are correct they must surely cast doubt on the validity of the genus *Myxarium* Wallr. but for the moment I follow Donk and recognize it.

EXIDIOPSIS EFFUSA NEW TO BRITAIN

EXIDIOPSIS EFFUSA (Bref. ex Sacc.) Möll., in *Bot. Mitt. Trop.* **8**, 82, 1895 (Fig. 3, *a–d*).

Exidia effusa Bref., *Unters. Gesammtgeb. Mykol* **7**, 94, 1888 (nomen nudum).

Thelephora effusa (Bref.) Sacc., *Sylloge Fung.* **6**, 541, 1888.

Sebacina effusa (Bref.) Maire, *Bull. trimest. Soc. mycol. Fr.* **18**, suppl., p. 67, 1902.

Exidiopsis quercina Vuill., *Bull. Séanc. Soc. Sci. Nancy* **10**, 30, 1890. (*fide* Bourdot & Galzin)

Sebacina quercina (Vuill.) Maire, *Bull. trimest. Soc. mycol. Fr.* **18**, suppl., p. 66, 1902.

?*Sebacina peritricha* Bourd. & Galz., *Bull. trimest. Soc. mycol. Fr.* **25**, 26, 1909.

Sebacina uvida ssp. *peritricha* (Bourd. & Galz.) Bourd. & Galz., *Hyménomycètes de France* p. 44, 1928.

Exidiopsis peritricha (Bourd. & Galz.) Sacc. & Trott. *Sylloge Fung.* **21**, 452, 1912.

Sporophores consisting of a conspicuous, pruinose, blue-grey, soap-like, corticioid film, but the pruina disappears at the slightest touch, leaving bruised areas. Specimens sent through the post often arrive with the pruina completely lacking and may be difficult to recognize. In section the fruit body, which is 60–90 μm thick, is seen to lack a basal layer of horizontal hyphae or if such a layer is present it is formed of indistinct hyphae, has a granular appearance, and is seldom more than 13 μm wide. The tissue consists of the most part of erect elements (collapsed basidia), functional basidia and dikaryophyses. *Dikaryophyses* numerous, consisting of a narrow trunk about 2 μm wide, and a branched apex. The branched apices overtop the basidia to form a zone 10 μm wide, but they soon become indistinct and gelatinized. There are also a few broader, unbranched, rather tortuous or lanceolate elements up to 4 μm wide which are probably to be regarded as cylindrical dikaryophyses in the sense of Wells (1962). *Basidia* varying from globose or subglobose, 13–15·6 × 9–10 μm, to pyriform or clavate and up to 18·2 × 8 μm, becoming tardily four-celled by the formation of longitudinal septa, and with a basal clamp-connexion. *Spores* (11–) 13–16 × 4–5 μm (from a spore-print), thin-walled, allantoid, germinating by repetition.

On *Betula*, Wakehurst Place, Ardingly, East Sussex, coll. Dennis 22. iii. 1969.

Additional collections examined: on *Fagus*, Ranmore Common, Surrey, coll. E. M. Wakefield, 10. viii. 1947; On harder wood of *Alnus glutinosa*, Ellerburn, Thornton-le-Dale, E. Yorks., coll. W. G. Bramley (K/60/21), 6. iii. 1960; on *Quercus* sp., Howldale, Pickering, E. Yorks., coll. Bramley (K/61/1), 14. ii. 1961. (The last gathering is in poor condition and is referred here with some doubt.)

It should be noted that the spores from a spore-print of the Ellerburn collection are slightly smaller than those from the gathering described above since they measure (11·2–12·75 × 3·75–4·2 μm) and the secondary spores which are of similar shape, 7–7·5 × 2·75–3 μm.

Wells (1962) reduced *E. effusa* to synonymy under *E. grisea* (Pers.) Bourd. & Maire along with several other European species (e.g. *S. plumbea* Bres. & Trott. and *S. umbrina* Rogers) against European tradition. Despite this, Oberwinkler (1963), although well aware of Wells's paper, has maintained *S. umbrina*, *E. grisea* and *E. effusa* as distinct species as also has Donk (1966). European authors agree that: (1) *E. effusa* is a species of broadleaved trees whereas *E. grisea* is normally found on *Abies;* (2) *E. grisea* tends to have slightly smaller spores although there is considerable overlap; and (3) that *E. effusa* is thinner and more conspicuously pruinose. It also appears that *E. grisea* dries down to a thin film with a metallic sheen, whereas *E. effusa* forms a thin blue-grey corticioid 'crust'. Because of these distinctions I too have maintained *E. effusa* as a distinct taxon.

EXIDIOPSIS OPALEA NEW TO BRITAIN

Exidiopsis opalea (Bourd. & Galz.) comb.nov. (Fig. 2,*g–l*)

Sebacina opalea Bourd. & Galz., *Bull. trimest. Soc. mycol. Fr.* **39**, 262, 1924.
?*Sebacina molybdea* McGuire, *Lloydia* **4**, 17, 1941.
Exidiopsis molybdea (McGuire) Ervin, *Mycologia* **49**, 123, 1957.

Sporophores comprising a thin, gelatinous, slimy grey layer which dries to an almost invisible film. The fruit body, up to 190 μm thick, lacks all trace of a basal layer of horizontal hyphae; the tissue, which is rather dense, appears to have been formed by a thickening hymenium since the lower portions consist largely of collapsed basidia and ascending thin-walled hyphae, 2·5 (–3·5) μm wide, with clamp-connexions at the septa. At the surface of the fructification there is an active hymenium with functional basidia in a zone about 26 μm wide. *Dikaryophyses* not seen. *Basidia* 10–13 × 9·5–12 μm, globose or subglobose, becoming longitudinally and cruciately septate, bearing four elongated epibasidia up to 35 μm in length. At the base of each basidium there is a prominent clamp-connexion. Proliferation from these clamps was not observed although occurring frequently from immediately beneath the basidium away from the clamp-connexion. *Spores* (8–) 10–12 × 5–7·2 μm (*fide* Martin 10–14 × 7–7·5 μm), thin-walled, hyaline, varying considerably in shape from elliptical or narrowly elliptical, often somewhat allantoid, to subamygdaliform, ovate, or reniform.

On *Quercus*, Furnace, Loch Maree, W. Ross, coll. R. W. G. Dennis, 22. viii. 1963.

The interpretation of this species is somewhat difficult. When Bourdot & Galzin (1924) published the diagnosis of their species they noted that it was a thin mucilaginous-gelatinous, whitish hyaline fungus which became evanescent on drying or formed a barely visible brown patch, that the hyphae were indistinct, that there were very narrow dendrophyses, that the basidia measured 9–13 × 8–10 μm and finally that the spores were oboval-oblong, strongly depressed or virguliform, 7–9–11 × 5–7 μm. This description applies very well to the British collection. The difficulty arises with the examination of authentic specimens of *E. opalea* preserved at Kew, for these have rather small spores ranging from 6·5–8 × 4·75–6 μm and when compared with this material the spores of the British collection, although showing similar variation in shape, look considerably larger. However, examination of mounts made direct from the fructifications of members of the Tremellales can give very misleading results with regard to spore size, hence whenever possible spore-prints should be studied. Since Bourdot & Galzin have such a high reputation for accuracy in regard to their microscopic data, and since the British material matches their description so closely, it seems safe to accept their published data and to assume that their specimens available at Kew represent gatherings with rather immature spores.

Wells (1962) maintained *E. opalea* (preferring the name *E. glaira* (Lloyd) Wells) as distinct from *R. molybdea* (McGuire) Ervin, using spore size as the primary means of separation. Thus *E. glaira* was said to have spores

6–8 × 4–6 μm whereas *E. molybdea* was stated to have spores 10·5–19 × 5·5–8·5 μm. However, examination of part of the type collection of the latter species with its accompanying spore-print, shows that the spores vary in shape from broadly elliptical, ovoid or subamygdaliform to slightly allantoid and measure 7·2–9·75 × 4·2–5·75 μm on the actual fruit body but spores from the print are slightly larger, 8·2–10·2 × 6·2–8 μm, and more uniform in shape, ranging from broadly elliptical to ovoid or subamygdaliform. Hence it can be seen that the type of *E. molybdea* has spores which are well below the size cited for this species by Wells and that they fall within the range of spore-size of *E. opalea*. In fact one of the American collections which McGuire has determined as *E. molybdea* (Martin no. 4923) has spores with a range of 6·2–8 × 4·75–6 (–6·2) μm which is precisely that found on Bourdot & Galzin's collections of *E. opalea* at Kew.

A possible objection to the relegation of *E. molybdea* to synonymy under *E. opalea* is that whereas the American fungus normally dries to a pale ochraceous or greyish corticioid crust, *E. opalea* often becomes almost invisible on drying. However, this does not seem to be of great importance, for American authors have stated that *E. molybdea* may become evanescent on drying while under *E. opalea* Bourdot & Galzin have recognized a var. *stratosa* which is thicker than the type variety and has basal hyphae with more distinct walls; they also recognize a var. *pergamenea* which is also rather thick and more persistent in the form of a rigid pellicle. On the basis of these data it seems scarcely possible to maintain *E. molybdea* as a distinct species.

Wells's (1962) view that *S. atra* McGuire should be regarded as a synonym of *E. molybdea* needs to be treated with caution since *S. atra* was described as having cylindric-curved spores, 14–19 × 6–8 μm. As to Wells's (1962) action in preferring the epithet *E. glaira* (Lloyd) Wells to *E. opalea*, he may well be correct but since I have not studied the type of *E. glaira* I defer any opinion.

E. opalea is seemingly very uncommon in Europe; apart from France the only other definite records are from Sweden (Neuhoff, 1936); Lundell & Nannfeldt, 1954, as *S. molybdea*).

SEBACINA CALOSPORA NEW TO BRITAIN

SEBACINA CALOSPORA (Bourd. & Galz.) Bourd. & Galz., *Hyménomycètes de France* p. 46, 1928. (Fig. 1,*c–e*)

Exidiopsis calospora Bourd. & Galz., *Bull. trimest. Soc. mycol. Fr.* **39**, 263, 1924.

Sporophores when fresh apparently forming small, inconspicuous, resupinate waxy-gelatinous, hyaline or greyish patches with a pruinose surface which may have a bluish or lilac tint, but becoming virtually invisible on drying. *Hyphae* 1·75–4 μm, thin-walled, hyaline, and devoid of clamps but with 'H' connexions. *Dikaryophyses* absent. *Basidia* 9·5–11 × 9–10·5 μm, becoming four-celled by development of longitudinal septa, although these may be incompletely formed, lacking a basal clamp-connexion. The sterigmata tend to be short, up to 8 μm in length, and often rather abruptly pointed toward the apex. *Spores* 16–35 × 3–3·5 μm,

thin-walled, hyaline, narrowly elliptical, shaped like a boomerang or with a very prominent, elongated apiculus giving the spore a triradiate aspect; germination by repetition.

On very rotten wood, Madingley Wood, Cambridge, coll. A. F. Parker-Rhodes, 1953.

There is some discrepancy involving the descriptions of this fungus as to whether clamp-connexions are present. Bourdot & Galzin (1928) state that the hyphae are 2–4·5 μm and 'à parois mince, boucles rares' but do not show clamps in their illustration (fig. 23). American authors (McGuire, 1941; Martin, 1952; Wells, 1962) all report the presence of clamps, and Wells (1962) writes that there is 'a loosely arranged basal layer of prostrate hyphae...with clamp connections throughout' and observes that there are clamps at the base of the basidia. However, Boidin (1957) and Warcup & Talbot (1962) have failed to detect clamps in European and Australian collections respectively. It may be that the American fungus differs from that found elsewhere in possessing clamps but against this is the fact that Oberwinkler (1963) has keyed out *S. calospora* as having a clamp at the base of the basidium. However, it is not altogether clear whether he had actually observed this feature or was guided by reports in the literature.

Wells (1962) retained *S. calospora* in *Exidiopsis* (Bref.) Möll. which according to his concept is restricted to resupinate sebacinoid fungi in which sub-basidial clamp-connexions are a consistent feature. Clearly if the American plant should be found to differ from that found in Europe and Australia in the presence of clamps, the feature would not, taken in isolation, justify placing two such similar species in different genera. Either *S. calospora* would have to be removed from *Exidiopsis* and possibly a new genus proposed to accommodate it, or Wells's concept of *Exidiopsis* will have to be modified to include species lacking clamps. In the latter event there would be little to justify its retention at specific rank. Owing to this uncertainty it seems advisable to follow Donk for the moment in retaining *S. calospora* in the heterogeneous assemblage of species still left in *Sebacina* Tul.

It is of interest to note that Bourdot & Galzin found larger probasidia than most authors, i.e. 15–16 × 12–13 μm, whereas Wells (1962) quotes 11–15 × 10–12 μm, and Warcup & Talbot 10 × 6 μm or 8–10 μm diam. The latter authors indicate that the probasidia are 'separated by a septum from a pedicellate hypha 2–3 μm wide' and that the metabasidia are '8–11 μm diam, often but not always divided longitudinally into two or four cells.'

BASIDIODENDRON CINEREUM NEW TO BRITAIN

BASIDIODENDRON CINEREUM (Bres.) Luck-Allen, *Can. J. Bot.* **41**, 1043, 1963. (Fig. 2, *d–f*)

Sebacina cinerea Bres., *Fungi Tridentini* **2**, 99, 1900.

Bourdotia cinerea (Bres.) Bourd. & Galz., *Hyménomycètes de France* p. 49, 1928.

Sporophore consisting of a thin, arid, grey-buff, corticioid fructification with smoky blue-grey areas, unchanging on drying. In section there is no

basal layer of horizontal hyphae; the tissue up to 40 μm in thickness is formed of ascending elements and appears to consist of two very indistinct strata, possibly representing a thickening hymenium. Unfortunately much of the tissue is indistinct and poorly preserved. *Dikaryophyses* not seen in this material, although normally present as narrow, tortuous, sparingly branched structures. *Gloeocystidia* abundant as rather poorly differentiated cylindrical organs, although sometimes with a slightly swollen base. These bodies, which traverse the entire width of the hymenium are conspicuous owing to their brown resinous contents and also because they may become apically encrusted. They are 3–5 μm wide, tend to occur in tufts, and may project slightly beyond the hymenium. *Basidia* 16–18 × 14–17 μm, globose, seemingly with a broadly attached base and becoming four-celled by the formation of longitudinal septa. Normally the basidia have a basal clamp-connexion from which proliferation occurs but this could not be confirmed owing to the conditon of the material. *Spores* 9·75–11·2 (–12) × 6·5–7·75 (–8) μm, broadly elliptical or ovoid.

On *Fuschia megellanica*, Kinloch, Isle of Rhum, Inverness-shire, coll. R. W. G. Dennis, 2. x. 1961.

This fungus, which occurs on a variety of substrates, is widespread in Europe having been reported from Czechoslovakia (Pilát, 1957), Denmark (Christiansen, 1959), Finland (Laurila, 1939), France (Bourdot & Galzin, 1928), Germany (Oberwinkler, 1963), Holland (Donk, 1931), Italy (Bresadola, 1900), Poland (Bresadola, 1903) and Sweden (Neuhoff, 1936; Eriksson, 1958).

A REDISPOSITION OF *EICHLERIELLA SPINULOSA* SENSU STRICTO

Heterochaete spinulosa (Berk. & Curt.) comb.nov. (Fig. 4,*a–c*)

Radulum spinulosum Berk. & Curt., *Grevillea* **1**, 146, 1873.
Eichleriella spinulosa (Berk. & Curt.) Burt, *Ann. Mo. bot. Gdn* **2**, 747, 1915.

Sporophore forming an adnate, pinkish ochraceous-buff, pulverulent, resupinate patch up to 1·5 cm in both length and breadth, bearing numerous scattered sterile spines. In section the fructification is 360 μm thick and consists of a well-developed basal layer of up to 300 μm wide and an 'hymenial' zone comprising a subhymenium and hymenium. The monomitic basal layer is formed of parallel, radially orientated, densely compacted hyphae up to 2·5 μm wide with thickened walls although retaining a distinct lumen, and with scanty, inconspicuous clamp-connexions. These hyphae are not very freely branched and so resemble skeletals, hence the structure could easily be mistakenly interpreted as dimitic. In the region of the hymenium they diverge abruptly at right-angles to form a subhymenial layer from which the hymenium itself is produced. The latter is composed of basidia, gloeocystidia and undifferentiated hyphal endings. It should be noted that the hyphae in the basal layer, subhymenium and hymenium may all be heavily encrusted, but this encrustation dissolves readily in 10 % KOH. The hyphal endings show little if any differentiation and are of the same width as the hyphae. *Gloeocystidia* arising from ordinary vegetative hyphae, from which they are

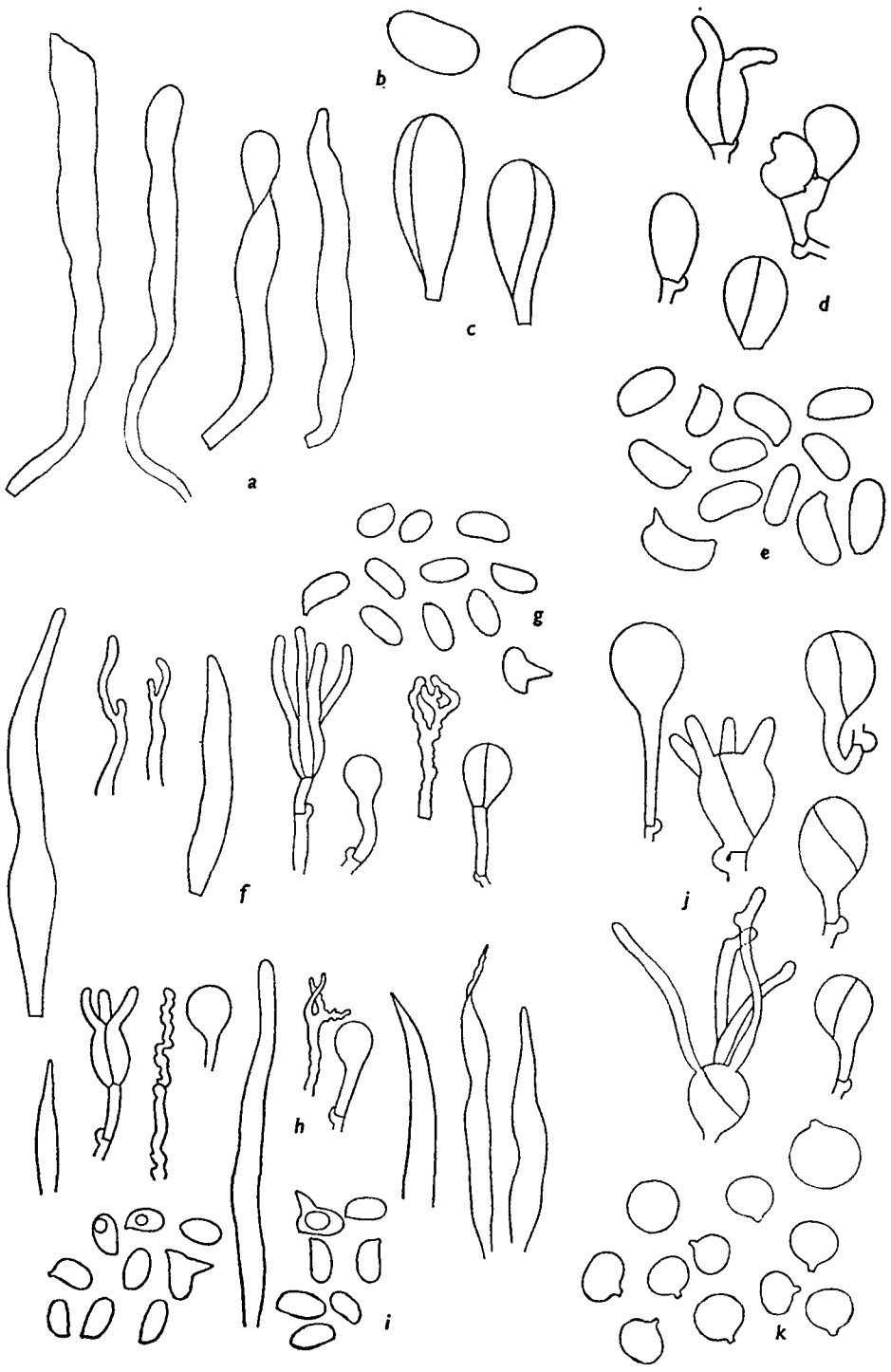

Fig. 4*a–c*, *Heterochaete spinulosa: a*, gloeocystidia; *b*, spores; *c*, basidia. (All from type collection.) *d*, *e*, *Sebacina podlachica: d*, basidia; *e*, spores (both from an authentic specimen in K). *f–i*, *Myxarium subhyalinum: f*, cystidia, dikaryophyses and basidia in various stages of development; *g*, spores (both from Bearsden collection); *h*, cystidia, dikaryophyses, and basidia in various stages of development; *i*, spores (both from type collection of *M. subhyalinum*). *j–k*, *Tremella globospora*: *j*, basidia; *k*, spores (both from type collection). (All × 866.)

distinctly differentiated in that they are broader, often abruptly so, 4–7 μm wide, thin-walled except sometimes toward the extreme base, clavate or fusiform, pursue an undulating course through the hymenium and reach 65 μm in length. *Basidia* 19–28·6 × 10·5–12·5 μm, clavate and longitudinally cruciately septate with four sterigmata. Owing to the state of preservation it has not been possible to see if there is a basal stalk-cell. *Spores* 15·6–16·0 × 6·0 (–8·75) μm (13·5–16 × 5–6 μm fide Gilbertson in a note on the type packet), thin-walled, hyaline, elongate-ellipsoid.

On *Cephalanthus*, Alabama, U.S.A., coll. Peters (TYPE).

As previously indicated by Reid (1957) and Reid & Austwick (1963), the type of *Radulum spinulosum* Berk. & Curt. represents a quite different fungus from that generally referred to as *Eichleriella spinulosa* (Berk. & Curt.) Burt in Europe (and North America?). Although the two fungi are superficially alike and have a basal layer of similar clamp-bearing hyphae with thickened walls, the spines of the type specimen are sterile and arise abruptly from immediately beneath the subhymenial layer as a fascicle of parallel hyphae whereas in the European species the spines are fertile over most of their surface and the basal layer is seemingly involved in their formation. Further, in the type there are gloeocystidia-like bodies but apparently no branching dikaryophyses, while in the 'European' species, gloeocystidia are lacking and dikaryophyses are often conspicuous especially toward the margin. Again, the basidia of the type appear distinctly smaller than in the 'European' fungus and it is also possible that the spores are smaller although there is considerable overlap. In the 'European' fungus the combined spore-range taken from three spore-prints is (13–) 15–20·2 × (5·5–) 6–7·5 (–8) μm whereas the spore size of the type is 15·6–16 × 6 (–8·75) μm. However, very few spores are present on the type. From the foregoing it is clear that the features discussed indicate that the type specimen of *R. spinulosum* is better assigned to the genus *Heterochaete* Pat. than to *Eichleriella* Bres. and I have accordingly made the necessary transfer.

Since the European (and north American?) fungus does not agree with the type specimen of *R. spinulosum*, a change of epithet is essential, the oldest available being *R. deglubens* Berk. & Br. This has already been recombined in *Eichleriella* as *E. deglubens* (Berk. & Br.) Lloyd but since Lloyd did not accept this recombination, which was published under the pseudonym of McGinty, the combination is not valid. Hence I formally propose the transfer as:

Eichleriella deglubens (Berk. & Br.) comb.nov.

Basionym *Radulum deglubens* Berk. & Br., *Ann. Mag. nat. Hist.* Ser. IV, **15**, 32, 1875.

It should be noted that Wells (1962) was of the opinion that *Eichleriella spinulosa* (*E. deglubens*?) belongs to a series of tropical species which includes *Heterochaete delicata* (Kl. ex Berk.) Bres., *H. livido-fusca* Pat. and *Protohydnum cartilagineum* Møll. in that all 'have large clavate basidia in which longitudinal septa apparently diverge in basal regions to delimit short, sterile stalks. All of these species have basidiocarps of essentially the same texture

and spines of varying sizes are formed in most of the basidiocarps'. It is possible that both *Heterochaete spinulosa* (i.e., *E. spinulosa* s. str.) and *E. deglubens* belong to this series.

With regard to Wells's (1962) comments under *E. spinulosa* that he 'did not note any significant difference between European and American specimens as did Reid (1957)' and that he did 'not see any necessity of recognizing *E. deglubens* (Berk. & Br.) Lloyd as a distinct species', these observations are the result of his having missed the main point of my argument. I did not say that the American and European fungi were different, on the contrary, I stressed on two occasions that *E. deglubens* probably occurred in both Europe and North America. My point was that the type of *E. spinulosa* was quite different from the fungus generally known by this name in Europe, and judged from Wells's observations apparently also in North America, and that it should be known as *E. deglubens*.

TWO HETEROCHAETELLAS NEW TO BRITAIN

HETEROCHAETE DUBIA (Bourd. & Galz.) Bourd. & Galz., *Hyménomycètes de France* p. 51, 1928 (Fig. 5).

Heterochaete dubia Bourd. & Galz., *Bull. trimest. Soc. mycol. Fr.* **25**, 30, 1909.
Sebacina dubia (Bourd. & Galz.) Bourd., *Ass. Fr. av. Sc.* **45**, 576, 1922.

Sporophores when dry varying from small, irregular, indistinct, greyish buff patches which are seen under a lens to consist of scattered scurfy-farinose granules which unite to form a reticulum and finally a thin continuous film, to an extensive, fairly thick, ochraceous buff, waxy, corticioid fructification with a strongly cracked, hispid surface. In section the fruit body has a total width of 104 μm. In the specimen sectioned there is an exceedingly thin basal layer of indistinct horizontal hyphae followed by a zone of included cystidia and erect vacuolate elements (the vacuoles having remained after the dissolution of large stellate crystals). This zone is followed by another narrow layer, 13 μm wide, of densely compacted horizontal hyphae from which the hymenial layer is formed. The hymenium consists of basidia and cystidia. *Cystidia* up to $150 \times 3{\cdot}5$–5 μm arising from within the layer of horizontal hyphae immediately beneath the hymenium either singly or in dense fascicles, but some arising from the very base of the fructification, or becoming buried and very thick-walled. These organs, which may project beyond the hymenium for up to 80 μm, are long, narrow, cylindrical bodies with strongly thickened, pale straw-coloured walls which thin out gradually toward the obtuse apex; there is, however, a wide lumen throughout. *Basidia* not preserved. *Spores* $5{\cdot}75$–$7{\cdot}5 \times 3{\cdot}2$–4 μm, thin-walled, ellipsoid.

On rotten bark and wood of *Fraxinus*, Cambridge, coll. Parker-Rhodes, 16. xii. 1953.

There are also five other gatherings in the Kew Herbarium from the same area, all made by Parker-Rhodes: On very rotten bark and wood of *Fraxinus*, Cambridge, 16. vi. 1953, and 2. iii. 1954; Madingley Wood, Cambridge, without date (three collections).

When Bourdot & Galzin (1928) dealt with *Heterochaetella dubia* in *Hyménomycètes de France* they recognized three varieties: (1) var. *dasychaeta* with scanty, thick-walled cystidia in which the lumen was said to be capillary, expanding only toward the apex, and oblong spores 6–9 × 3·5–4·5 μm; (1*a*) forma *sphaerospora*, differing from the previous taxon in having subspherical spores 5–6 × 4·5–6·5 μm; (2) var. *mesochaeta* with fascicles of cystidia which were thick-walled at the base, and oblong

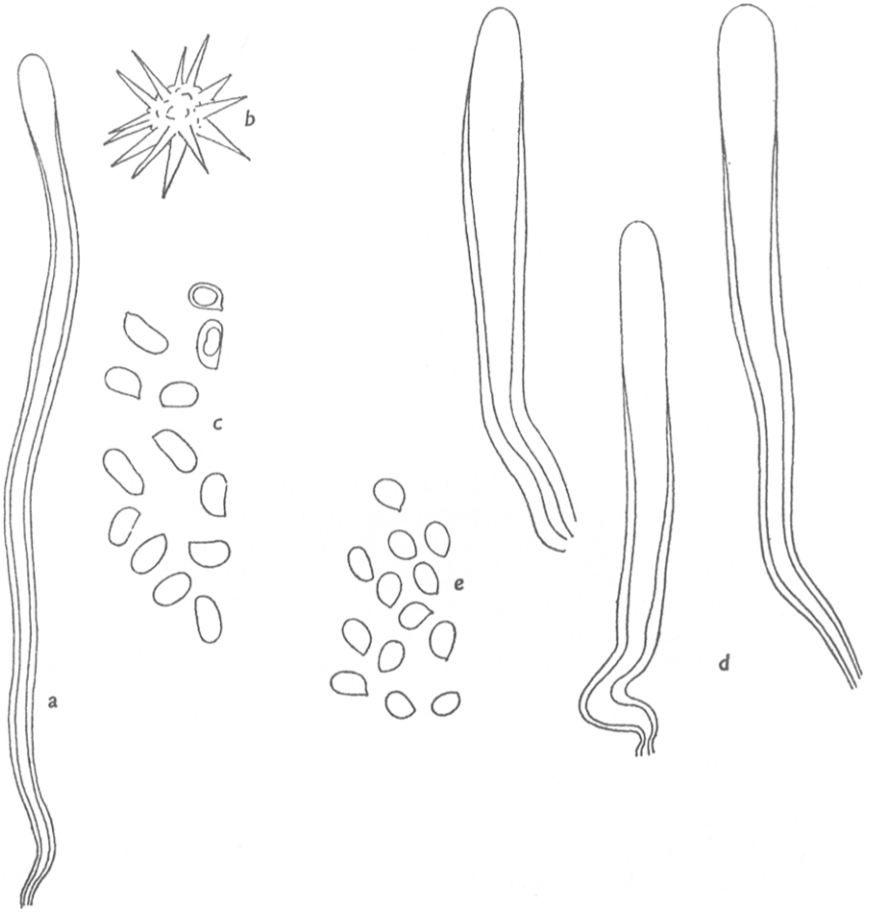

Fig. 5*a–c*, *Heterochatella dubia*: *a*, cystidium; *b*, stellate crystal; *c*, spores (all from Cambridge specimen, coll. 16. xii. 1953). *d–e*, *Heterochaetella brachyspora*: *d*, cystidia; *e*, spores. (All × 866.)

spores 6–9 × 3–4 μm. (2*a*) forma *crassior* with grey-brown, thick, waxy fruit body; (*b*) forma *brachyspora* with ovoid, slightly laterally depressed spores, 5–6 × 4–5 μm; (3) var. *psilochaeta* with small, thin-walled cystidia, 25–32 × 5–8 μm, and oblong, depressed spores 5–6 × 3–3·5 μm.

According to Luck-Allen (1960) the last mentioned variety, raised to specific status by Olive as *Sebacina psilochaeta*, should probably be excluded from *Heterochaetella*. The other two varieties she apparently did not think

worthy of recognition, a view to which I also subscribe, since the thickening of the cystidia is a very variable feature. Nevertheless, if one were to follow Bourdot & Galzin's (1920) subdivision of *H. dubia*, the British gatherings listed above would be referable to *H. dubia* var. *mesochaeta* forma *crassior*.

Although Luck-Allen (1960) did not recognize Bourdot & Galzin's varieties of *H. dubia* she described a new species: *Heterochaetella brachyspora* Luck-Allen (syn. *H. dubia* var. *mesochaeta* f. *brachyspora* Bourd. & Galz.) which she distinguished from *H. dubia* on spore shape, i.e. distinctly ovoid in *H. brachyspora*, oblong and laterally depressed in *H. dubia*. A collection which is perhaps to be referred to Luck-Allen's species has also been found in Britain (see below).

HETEROCHAETELLA BRACHYSPORA Luck-Allen, *Can. J. bot.* **38**, 566, 1960 (Fig. 5).

Heterochaetella dubia var. *mesochaeta* f. *brachyspora* Bourd. & Galz., *Hyménomycètes de France* p. 52, 1928.

Sporophores drying to a very thin, scarcely visible grey pruina, which under a lens appears minutely hispid owing to the presence of projecting cystidia. In section the fructification varies from 30 to 50 μm in thickness and consists merely of a dense layer of indistinct horizontal hyphae and a hymenium, or there may be a zone about 26 μm wide of erect elements beneath this with a vacuolate structure. As in *H. dubia* the 'vacuoles' are spaces left by the dissolution of large stellate crystals. *Cystidia* up to 150 × 8–10 μm, arising from the base of the layer of horizontal hyphae as long cylindrical or clavate bodies with very strongly thickened brownish walls which thin out gradually toward the apex. These organs are either formed singly or in small fascicles with project up to 10 μm beyond the hymenium. Each fascicle, although sterile, has the hymenium extending up over its base for a short distance. *Basidia* not preserved. *Spores* 4·2–5·75 × 3·2–3·75 μm, thin-walled, hyaline, broadly elliptical to ovate.

On *Fagus*, Woodmancote, Dursley, Gloucestershire, coll. Dennis, 26. v. 1950.

This collection would seem to be referable to *H. brachyspora* Luck-Allen since the spores are both shortly and broadly elliptical or ovate rather than elongate-elliptic as in the gatherings listed above under *H. dubia*. Nevertheless the spores are not quite so globular as those figured by Luck-Allen for her species and which she found to measure 5–6 × 4–5 μm. However, Luck-Allen cited amongst the material of her fungus a collection from Austria: Tirol, on *Picea excelsa*, Litschauer 37, 24. viii. 1928, and part of this was studied by Oberwinkler (1963) who has figured the spores. These look very like those of the Woodmancote gathering. Another point of interest is that the cystidia of the latter material are exceptionally broad.

HIRNEOLA AURICULA-JUDAE VAR. *LACTAE* NEW TO BRITAIN

Hirneola auricula-judae var. **lactea** (Quél.) comb.nov.

Auricularia auricula-judae var. *lactea* Quél., *Enchiridion Fungorum*, p. 207, 1886.

Auricularia lactea (Quél.) Big. & Guill., *Flore Champignons Supérieurs de France* **2**, 491, 1913.

The following British collections of the white variety of *Hirneola auricula-judae* are preserved in the Kew Herbarium: Guildford, Surrey, 10. xii. 1913; on *Sambucus*, Newtimber Holt, Pyecombe, Sussex, coll. Y. D. Heathcote, Oct. 1949; on *Sambucus*, Tisbury Row, Swallowcliffe, Wilts. coll. J. B. Hindley, 29. xii. 1968; on *Sambucus*, Higher Merridge, Bridgwater, Somerset, coll. E. A. Marriage, 31. xii. 1955; on *Fraxinus*, Baron Hill Estate, Anglesey, coll. R. Millar, 11. xi. 1967.

This white variant appears to differ from the typical fungus in having a more translucent fructification. In addition, several sporophores have an unusually densely wrinkled hymenial surface. Nevertheless there is no difference in the microstructure and since the spores from a spore-print of the Anglesey gathering measure 18–20 × 6·5–8 μm, which falls within the range of spore-size for the species, and since the Anglesey and Swallowcliffe fructifications were growing along with normal sporophores it seems best to regard these white fruit bodies as representing an 'albino' condition of the common Jews ear fungus: they are not merely washed out or faded specimens.

REFERENCES

BANDONI, R. J. (1959). An undescribed species of *Platygloea* from Iowa. *Mycologia* **51**, 94–96.

BERKELEY, M. J. (1836). *English Flora* **5**, Part 2. *Fungi*, p. 354.

BERKELEY, M. J. (1841). Notices of British Fungi. *Ann. Mag. nat. Hist.* **6**, 360.

BERKELEY, M. J. (1860). *Outlines of British fungology*, pp. 288, 290. London.

BORDIN, J. (1957). Hétérobasidiomycètes saprophytes et Homobasidiomycètes résupinés. II. Catalogue raisonné des espèces pyrénéennes de la région de Luchon (Haute-Garonne). *Bull. Soc. Hist. nat. Toulouse* **92**, 279.

BOURDOT, H. & GALZIN, A. (1924). Heterobasidieae nondum descriptae. *Bull. trimest. Soc. mycol. Fr.* **39**, 262.

BOURDOT, H. & GALZIN, A. (1928). *Hyménomycètes de France*, pp. 758. Sceaux.

BRESADOLA, G. (1900). *Fungi Tridentini*, **2**, p. 99. Tridenti.

BRESADOLA, G. (1903). Fungi Polonici. *Annls mycol.* **1**, 116.

BURT, E. A. (1921). Some North American Tremellaceae, Dacromycetaceae and Auriculariaceae. *Ann. Mo. bot. Gdn* **8**, 371.

CHRISTIANSEN, M. P. (1954). Tre Ejendommelige *Tremella*-arter. *Friesia* **5**, 63.

CHRISTIANSEN, M. P. (1959). Danish Resupinate Fungi. I. Ascomycetes and Heterobasidiomycetes. *Dansk. bot. Ark.* **19**, 45.

CHRISTIANSEN, M. P. (1963). *Sirobasidium cerasi* Bourd. & Galz. found in Denmark. *Friesia* **8**, 69–74.

DONK, M. A. (1931). Revisie van de Nederlandse Heterobasidiomycetae en Homobasidiomycetae–Aphyllophoraceae. I. *Meded. ned. mycol. Vereen.* **18–20**, 106.

DONK, M. A. (1966). Check list of European Hymenomycetous Heterobasidiae, *Persoonia* **4**, 145–335.

ERIKSSON, J. (1958). Studies in the Heterobasidiomycetes and Homobasidiomycetes–Aphyllophorales of Muddus National Park in North Sweden. *Symb. bot. Upsal.* **16**, No. 1, 41.

FRIES, E. M. (1877–1884). *Icones Selectae Hymenomycetum*, Pl. 200. Holmiae et Upsaliae.

LAURILA, M. (1939). Basidiomycetes novi rarioresque in Fennia collecti. *Suomal. eläin-ja kasvit. Seur. van Julk.* **10**, No. 4, 2.
LLOYD, C. G. (1922). The genus *Naematelia*. *Mycol. Writings* **5** (*Mycol. Notes* No. 67), 1149–1150.
LUCK-ALLEN, E. R. (1960). The genus *Heterochaetella*. *Can. J. Bot.* **38**, 559–569.
LUNDELL, S. & NANNFELDT, J. A. (1954). *Fungi Exsiccati Suecici*. Fascs. **45–46**, 20. Uppsala.
MCGUIRE, J. M. (1941). The species of *Sebacina* (Tremellales) of Temperate North America. *Lloydia* **4**, 22.
MALENÇON, G. (1964). *Sirobasidium cerasi* Bourdot et Galzin, type du genre *Endostilbum* gen.nov. de la famille des Stilbaceae. *Bull. trimest. Soc. Mycol. Fr.* **80**, 102–112.
MARTIN, G. (1952). Revision of the North Central Tremellales. *St. Univ. Stud. nat. Hist. Iowa* **19**, No. 3, 1–122.
NEUHOFF, W. (1931). Kritische Gallertpilze. II. Die Europäischen arten der Gattung *Tremella*. *Z. Pilzk.* **10**
NEUHOFF, W. (1935). *Die Pilze Mitteleuropas*. IIa. Die Gallertpilze (Tremellineae) Fasc. 2. Pl. 4, fig. 1–12. Leipzig.
NEUHOFF, W. (1936). Die Gallertpilze Schwedens. *Ark. Bot.* **28**A, no. 1, 1–57.
OBERWINKLER, F. (1963). Niedere Basidiomyceten aus Südbayern. III. Die gattung *Sebacina* Tul. *s.l. Ber. bayer. bot. Ges.* **36**, 41–55.
OLIVE, L. S. (1946). Some taxonomic notes on the Higher Fungi. *Mycologia* **38**, 539.
OLIVE, L. S. (1947). Notes on the Tremellales of Georgia. *Mycologia* **39**, 92.
PILÁT, A. (1957). Übersicht der Europäischen Auriculairales und Tremellales unter besonderer Berücksichtigung der Tscheckoslowakischen Arten. *Sb. nár. Mus. Praze* **13**B, 115–210.
REID, D. A. (1957). New or interesting records of Australasian Basidiomycetes. III. *Kew Bull.* **1**, 129–131.
REID, D. A. & AUSTWICK, P. K. C. (1963). An annotated list of the less common Scottish basidiomycetes (exclusive of rusts and smuts). *Glasg. Nat.* **18**, 329, 331.
TORKELSEN, A.-E. (1968). The genus *Tremella* in Norway. *Nytt Mag. Bot.* **15**, 229–232.
WARCUP, J. H. & TALBOT, P. H. B. (1962). Ecology and identity of mycelia isolated from soil. *Trans. Br. mycol. Soc.* **45**, 498–499.
WELDEN, R. M. (1935). Observations on the cytology of *Sebacina globospora* n.sp. *Rhodora* **37**, 121–128.
WELLS, K. (1957). Studies of some Tremellaceae. *Lloydia* **20**, 50.
WELLS, K. (1962). Studies of some Tremellaceae. IV. *Exidiopsis*. *Mycologia*, **53**, 317–370.

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