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OBITUARY

Pieter Groenhart (1894—1965)

Pieter Groenhart died on November 3, 1965 at Leiden at the age of seventy-one. With him our country lost the one cryptogamist who clung steadfastly to lichenology.

Groenhart was born on February 21, 1894 at Ilpendam, a small village just north of Amsterdam. In 1916 he became a teacher and was attached to several elementary schools in this country. In August 1926 he went to Java.

There he was first appointed to a temporary post in Batavia (now Djakarta) but he very soon left for Malang, in East Java, to become a teacher at the Agricultural School there (Nov. 1, 1926–Sept. 30, 1932). In 1932 he obtained leave of absence to study biology at the University of Utrecht (Oct. 1, 1932–July 1, 1935) and to acquire a working knowledge of lichens at the Rijksherbarium, Leiden (July 1935–May 1936).

When his leave expired he returned to his post at Malang (July 1, 1936–March 31, 1940). In 1940 he was transferred to a higher-grade Government school at Buitenzorg (now Bogor). Here, as far as time permitted, he was allowed to work one day a week at the Herbarium of the Botanical Garden in order to continue his lichenological studies.

But in March 1942 the Dutch East Indies were overrun by the Japanese and in June 1942 Groenhart, together with so many others, was imprisoned in an internment camp. During his internment he helped keep up the morale of his fellow-prisoners by giving lectures in elementary biology. Three years later, in August 1945, he was released, barely alive and with his eyesight damaged by avitaminosis, but with his spirit undaunted.

Commissioned to resume his lichenological studies, he returned to Holland and worked his way through the collections of Malesian lichens at the Rijksherbarium (March 1, 1946–Oct. 16, 1947). Considerations of a pecuniary nature, however, made it necessary for him to apply once again for a post in the Indies. He was appointed lichenologist at the Herbarium at Buitenzorg (Oct. 16, 1947–Aug. 31, 1951) and he managed to keep the position of "Botanist 1st Class at the Herbarium Bogoriense of the Kebun Raya Indonesia" under the new Indonesian regime (Sept. 1, 1951–Dec. 31, 1954). The last few years were extremely trying but he loved Java and when he was finally obliged to resign (Jan. 1, 1955) he left it with a bleeding heart.

He settled near Leiden and after his personal lichen collections, numbering about 8000, had been incorporated in the Rijksherbarium he set himself the task of sorting out and labelling his specimens.

Meanwhile he became interested in *Cryptothecia*, an intriguing genus in that the

species, instead of bearing recognizable fructifications, have solitary asci or agglomerations of asci scattered throughout the thallus. Groenhart decided to study the genus more closely and to revise the family of the Cryptothecіaceae. Financially he was supported by a grant from "The Netherlands Organisation for the Advancement of Pure Research (Z.W.O.)".

Although he was unable to complete the revision, the preliminary studies proved extremely illuminating in that they opened his eyes to the serious defects of a lichen taxonomy that fails to take modern concepts of mycology into account. This process, so easily recorded in a few words, entailed a thorough re-orientation in mycological literature, an undertaking that few at his age would have been able to cope with. If Groenhart's papers succeed in advancing his view in wider circles, not only lichenological but also mycological, his scientific mission will have been fully completed.

Groenhart organized the following expeditions. The first, in 1951, was to Ternate and Halmahera in the Moluccas, a trip that lasted four months. On the second, from May to July 1953, he collected lichens in the Padang Highlands, Sumatra, and on the Mentawai Islands. On his last trip, a very short one (Febr. 1–13, 1954), he collected lichens in Bantam, West Java.

Groenhart will be remembered by his pupils of the Agricultural School for his outstanding qualities as a teacher and by his colleagues for his kindly disposition and equanimity but also for his dogged determination.

R. A. Maas Geesteranus

THE CRYPTOGAMIC PUBLICATIONS OF P. GROENHART

1. Beiträge zur Kenntnis der javanischen Flechten I–III. *In* Ned. kruidk. Arch. **46**: 690–784, 7 figs. 1936.
2. Beischrift [a postscript to E. BACHMANN's paper entitled "Eine neue *Moriola* aus Java".]. *In* Blumea **2**: 26–30. 1936.
3. Eenige Cryptotheciaceae van Java. *In* Natuurk. Tijdschr. Ned.-Ind. **98**: 304–310, [3] pls. [with separate "Toelichting"]. 1938.
4. *Badhamia capsulifera* (Bull.)'Berk. *In* Ned. kruidk. Arch. **49**: 453–456, [1] pl. 1939.
5. Hoe en waaraan zijn korstmossen te herkennen?—I. *In* Trop. Nat. **29**: 191–195, 3 figs. 1940.
6. Hoe en waaraan zijn korstmossen te herkennen?—II. *In* Trop. Nat. **30**: 138–140. 1941.
7. Malaysian lichens. I. *In* Bull. bot. Gdns, Buitenzorg, ser. 3, **17**: 198–203, 2 figs. 1941.
8. *Oropogon loxensis* Th. Fr. *In* Trop. Nat. **30**: 144–145, 1 fig. 1941.
9. Malaysian lichens—II. *In* Reinwardtia **1**: 33–39, 2 figs. 1950.
10. Malaysian lichens—III. *In* Reinwardtia **1**: 197–198, 1 fig. 1951.
11. Malaysian lichens—IV. *In* Reinwardtia **2**: 385–402, 4 figs. 1954.
12. Two new Malaysian lichens. *In* Blumea, Suppl. 4: 107–112, 3 figs. 1958.

13. *Aglaothecium* Groenh., a new lichen genus from Malaysia. *In* Persoonia **2**: 349–353, 7 figs. 1962.
14. Studies in ascostromatic lichen-fungi—I. The problem of Ascohymeniales and Ascoloculares. *In* Persoonia **4**: 1–7. 1965.
15. Studies in ascostromatic lichen-fungi—II. Types of ascostromata. *In* Persoonia **4**: 9–13. 1965.

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TROPICAL AFRICAN AGARICALES

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(With 146 Text-figures)

The paper presents a study of fifty-one species of agarics which have been collected within the tropical regions of Africa, particularly Uganda. Type-studies are made of species described by Beeli, Bresadola, Hennings, and Patouillard. The following eleven species are described as new: *Agaricus exilis*, *Clitocybe hydrophora*, *Coprinus africanus*, *Crinipellis calderi*, *Galerina makereriensis*, *Marasmiellus roseotinctus*, *Marasmius bubalinus*, *Melanoleuca tropicalis*, *Pluteus brunneisucus*, *Psathyrella glandispora*. One new variety is proposed: *Conocybe ochracea* var. *africana*. The following nomina nova are proposed: *Clitocybe torrendii* and *Xerulina deseynesiana*. New combinations are made in the following genera: *Agaricus* (1), *Crinipellis* (1), *Cystoderma* (1), *Gymnopilus* (1), *Hohenbuehelia* (1), *Limacella* (1), *Macrolepiota* (1), and *Marasmiellus* (1).

During the summer of 1964, Dr. E. A. Calder, assisted by Mr. A. Ojong, who were attached to the Makerere University College, collected a large number of agarics in the Mpanga Forest area of Uganda. These fungi, together with water-colour illustrations, field-notes, and spore-prints were subsequently sent to the Herbarium, Royal Botanic Gardens, Kew for the purposes of identification. In an attempt to determine the correct names for these fungi, an exhaustive effort was made both in the search of available literature, and in the examination of existing type-material. However, it soon became clear that a number of species new to science were represented. This is hardly surprising for although a number of works have been produced concerning the Aphyllophorales of tropical East Africa, the agaric flora remains virtually unknown.

The purposes of this paper are to describe a number of these new species, and to give detailed analyses of the type specimens of some of the taxa which have been described in other tropical areas of Africa. Particular attention has been given to those species described by Bresadola, Hennings, and Patouillard, but much of this material, especially that of Hennings, has been either lost or poorly preserved. Further, specimens collected by Mr. F. C. Deighton and determined by Beeli, have been examined. The conclusion reached from these studies must be that a rich, unknown, agaric flora exists in tropical Africa, and it is hoped that this present paper will help to stimulate further mycological explorations.

Every attempt has been made here to adopt Singer's (1962) system of classification, for the interpretation of genera, subgenera, and sections. All the material examined microscopically has been mounted either directly in 10 % potassium hydroxide

solution, or in 1 % aniline blue in 50 % lactic acid after an initial soaking in potassium hydroxide. Wherever possible spore-measurements have been based upon samples taken from spore-prints, and are expressed both as a range and with a mean value. The text-figures of microscopic structures have been drawn with the aid of a camera lucida, and then reduced on reproduction. The habit sketches are taken from water-colour illustrations of the fresh material, painted by Dr. E. A. Calder, and it is with his kind permission that these are reproduced in this paper. The colour terminology is taken from Ridgway's "Color Standards and Color Nomenclature", 1912. Type specimens, field-notes, and water-colour drawings of the newly described species are deposited in the Kew Herbarium. Material deposited in other herbaria is indicated by the abbreviations used by Lanjouw & Stafleu (1959).

For kindly making available collections in their keeping I wish to thank the following: Dr. C. R. Benjamin (BPI); Mr. F. C. Deighton (IMI); Prof. R. Heim (PC); Dr. I. Mackenzie Lamb (FH); and Dr. T. Norlindh (S). I should also like to express my thanks to Mr. H. K. Airy Shaw for correcting the Latin diagnoses.

AGARICACEAE Fr.

Agaricus exilis Pegler, *sp. nov.*—Text-figs. 1–4

Pileus 4–15 mm latus, e convexo expansus, planus vel obtuse umbonatus, carnosulus, ad discum fuscus, ad marginem pallide bubalinus, squamulis adpressis ± concentricis variegatus. Lamellae liberae, primo albidae dein atrofuscae, confertae, ad aciem pallidiores, subtiliter serratae. Stipes 2–5 cm × 1.5–3 mm, aequalis, cylindricus, cavus, interdum ad basim bulbillosus, laevis, sericeo-albus; annulus peronatus, ferrugineus, distincte membranaceus. Caro tenuissima, albida, fracta rubescens. Sporae 4–5 × 3–3.7 (4.7 × 3.3) μ, late ellipsoideae, sub micr. fuscobrunneae, tenuitunicatae. Basidia 11.5–16.5 × 4.5–5.5 μ, claviformia vel cylindrica, 4-sporigera. Cheilocystidia 20–32 × 9.5–16 μ, vesiculosa, piriformia, tenuitunicata, brunnea. Pleurocystidia nulla. Trama hymenophoralis subregularis pallide brunnea. Hyphae cuticulae pilei brunneae, rugosae, ad 9 μ diam. inflatae. Hyphae defibulatae.

Inter radices, sub frutice. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 13 April 1964. Legit *E. A. Calder*, no. *41* (Typus).

Pileus 4–15 mm diam., convex then expanded ± plane or with a low obtuse umbo, thin, 'Fuscous' at the disc, becoming 'Light Buff' towards the margin, with numerous small, 'Tawny', appressed scales arranged concentrically around the umbo; margin not noticeably striate. *Lamellae* free, at first white, soon becoming deep fuscous, linear, crowded with numerous lamellulae; edge paler brown, slightly serrate. *Stipe* 2–5 cm × 1.5–3 mm, equal, cylindric, slightly swollen at the base or not, hollow, smooth silky white; bearing a well developed and persistent, peronate annulus, 5–10 mm from the apex, reddish-brown, membranous. *Context* very thin, pale to concolorous, inamyloid, when cut rapidly changing to reddish-brown. *Spores* 4–5 × 3–3.7 (4.7 × 3.3) μ, broadly ellipsoid, under the microscope fuscous brown, thin-walled without any apparent germ-pore, usually containing a single large oil guttule; no noticeable dextrinoid reaction with Melzer's solution. *Spore print* not available. *Basidia* 11.5–16.5 × 4.5–5.5 μ, claviform to cylindric, bearing 4 short sterigmata. *Cheilocystidia* present, 20–32 × 9.5–16 μ, piriform to pedicellate, with a thin brown wall; numerous on some lamellae, rare on others, intermixed with the basidia to

form a heteromorphous gill-edge. *Pleurocystidia* absent. *Hymenophoral trama* subregular, pale brown, consisting of loosely interwoven hyphae, 1.5–6 μ diam., thin-walled, septate, occasionally branched. *Pileus surface* an epicutis which becomes much fragmented towards the apex, consisting of repent to suberect, loosely arranged hyphae, inflated up to 9 μ diam., but often much constricted at the septa, thin-walled either with a brown membrane pigment or hyaline, branched, surface varying from smooth to rugose. Individual elements 18–50 μ long; the terminal elements are cylindric with a rounded apex. No sphaerocysts. All hyphae devoid of clamp-connexions.

In a dense root complex at the base of a spreading bush. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 13 April 1964. Legit *E. A. Calder*, no. *41* (Type).

The small fragile species of *Agaricus* L. ex Fr., although apparently of frequent occurrence in the tropics have been little investigated. The question arises as to whether they should be regarded as congeneric with the more typical, large, fleshy species, and if *Micropsalliota* Höhn. might be a more suitable genus for these species. However Singer (1947) reporting on the type species, *Micropsalliota pseudovolvulata* Höhn., observed that the spores are only pale-coloured and give a positive dextrinoid (pseudoamyloid) reaction when subjected to Melzer's solution, strongly suggesting the genus *Lepiota* (Pers. ex Fr.) S. F. Gray. *Agaricus exilis* has spores which appear very dark brown under the microscope, and in no way fit the pale colour range found within *Lepiota*.

In an attempt to find the possible relationship for the Uganda species, the present author examined a number of type specimens of species described from Ceylon by Berkeley & Broome (1871). Several small species were described within this genus, and some of the water-colour illustrations which accompany the type material closely resemble the African fungus. In particular, *A. epipastus* Berk. & Br. shows the same gregarious habit, and scaly pileus, but differs in having an olive-yellow stem which is also covered with scales; an epicutis with abundant sphaerocysts; and narrower, subcylindric spores (4–5.5 × 2.5–3 μ). *Agaricus myriostictus* Berk. & Br. though not gregarious is otherwise similar in habit, but again is provided with numerous sphaerocysts in the epicutis, and has smaller spores (3.5–4.3 × 2.5–3.2 μ). Another gregarious species, *A. subcitrinus* Berk. & Br. differs in the more yellowish coloration, shorter stem, and the presence of epicuticular sphaerocysts, yet the spores are identical in size (4–5 × 3–3.7 μ) to those of *A. exilis*. *Agaricus celidotus* Berk. & Br. also has very similar spores, but this is a far more robust species, and the epicutis, although filamentous, consists of thick-walled hyphae with pigmented vacuolar contents, which are arranged in a general radial direction.

Agaricus exilis would appear to belong in the subgenus *Conioagaricus* Heinem. by virtue of the thin, squamulose pileus, and the inflated, incrusted elements of the epicutis. The majority of species within this group are characterised by the presence of sphaerocysts, but in *A. latericolor*, described by Heinemann (1956) from the Congo, those structures are only produced to a limited extent. They are totally absent in *A. exilis*, but all the other micro-characters of this species are in close agreement with *A. latericolor*.

Agaricus murinaceus (Beeli) Pegler, *comb. nov.*—Text-figs. 5–7

Hypholoma murinaceum Beeli *in* Bull. Jard. bot. État Brux. **15**: 41, pl. 3, fig. 28. 1938 ("*murinacea*", basionym).

Pileus 2.5–3 cm diam., convex then expanded, broadly umbonate, surface pale grey, covered by small sepia brown, suberect squamules; margin striate, undulate. *Lamellae* more or less free, dark sepia, fairly broad (up to 5 mm), crowded with lamellulae; edge white, pruinose. *Stipe* 25–30 × 3–4 mm, equal, cylindric with a sub-bulbous base, hollow, smooth, white or pale greyish; annulus not observed. *Context* thick, white. *Spores* 4.8–6.5 × 3.4–4.7 (5.5 × 4) μ, ovoid to short ellipsoid, fuscous brown under the microscope, smooth, thick-walled, without a germ-pore. *Spore print* dark fuscous. *Basidia* 14–18 × 5–6.5 μ, oblong to short claviform, with 2 or 4 sterigmata (up to 4 μ long). *Cheilocystidia* numerous, 10.5–16.5 × 4–8 μ, ovoid, cylindric, or short lageniform, hyaline, thin-walled. *Pleurocystidia* absent. *Hymenophoral trama* regular or nearly so, pale brown, but with a well developed hymenopodium of broadly inflated elements, to appear falsely bilateral. Subhymenial layer well developed, subcellular. *Pileus surface* a fragmented epicutis, consisting of repent, brown, thin-walled hyphae, 5–10.5 μ diam., frequently branched and septate, often with brown, granular contents. All hyphae devoid of clamp-connexions.

On the ground. Njala, Sierra Leone. July 1935. Legit *F. C. Deighton*, no. *M 762* (Type).

The type collection consists of a single sporophore preserved in alcohol which on analysis is found to represent a species of the genus *Agaricus*. The poor development of a veil, and the flesh context indicate that this species probably belongs within the section *Agaricus*.

Cystoderma ferruginosum (Bres.) Pegler, *comb. nov.*—Text-figs. 8–9

Lepiota ferruginosa Bres. *in* Annls mycol. **18**: 26. 1920 (basionym).

Pileus 4–5 mm diam., at first convex, obtusely umbonate, then becoming depressed around the umbo, fulvo-ferruginous, surface granular-mealy, glabrescent. *Lamellae* adnexed, concolorous, thin, crowded; edge even. *Stipe* 10 × 0.5 mm, equal, cylindric, hollow, ferruginous, pruinose, bearing a fibrillose evanescent annulus. *Context* thin, concolorous, inamyloid. *Spores* 4–5.2 × 2–3.2 (4.6 × 2.5) μ, ellipsoid to oblong-ellipsoid, hyaline, thin-walled; strongly amyloid. *Basidia* 13.5–20 × 4–5 μ, claviform, bearing 4 short sterigmata. *Cystidia* absent. *Hymenophoral trama* regular or nearly so, hyaline, inamyloid. *Pileus surface* an epithelium of brown, inflated sphaerocysts, 12–25 μ diam., globose to pedicellate piriform, thin-walled, smooth, sometimes forming short chains. Similar elements occur on the stipe though somewhat sparse, and often more elongate (up to 45 μ long). All hyphae provided with clamp-connexions.

EXPLANATION OF FIGURES 1–13

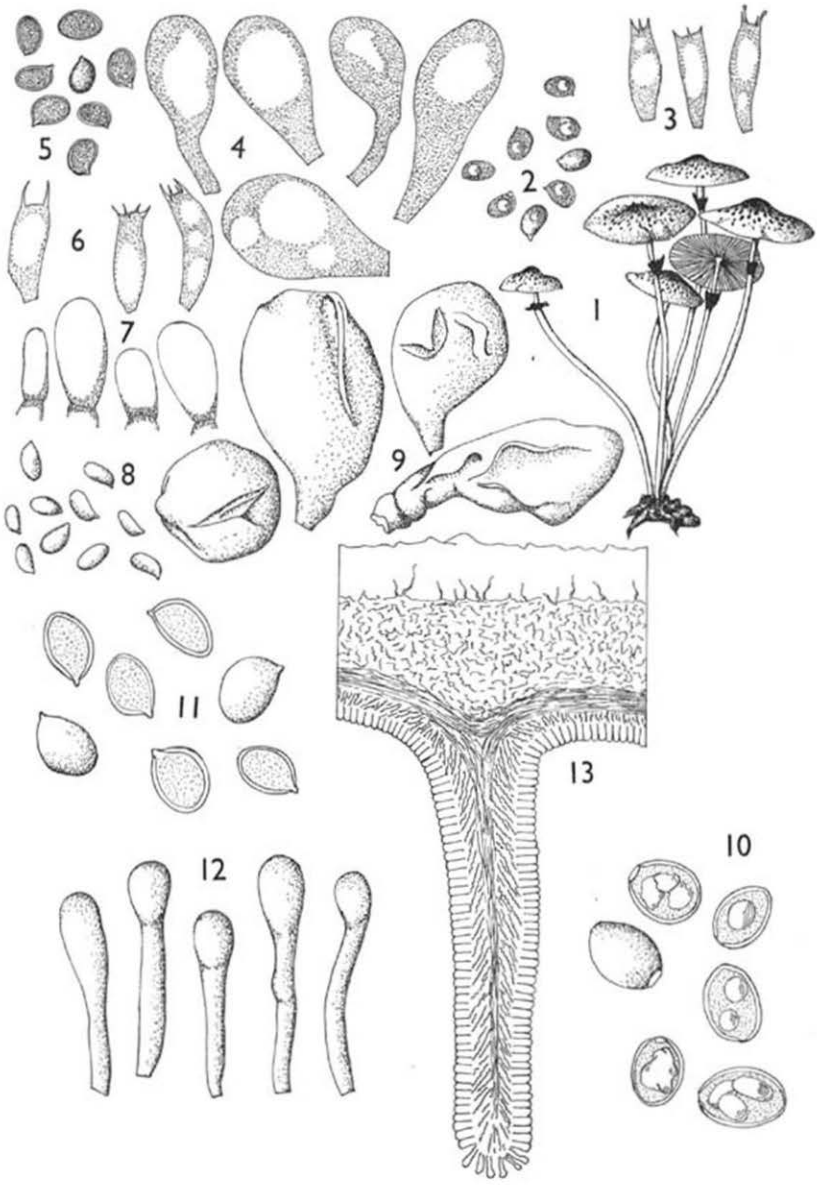
Figs. 1–4. *Agaricus exilis*. — 1. Habit of sporophore (× 2). — 2. Spores. — 3. Basidia. — 4. Cheilocystidia.

Figs. 5–7. *Agaricus murinaceus*. — 5. Spores. — 6. Basidia. — 7. Cheilocystidia.

Figs. 8, 9. *Cystoderma ferruginosum*. — 8. Spores. — 9. Epithelial sphaerocysts.

Fig. 10. *Macrolepiota imbricata*. Spores.

Figs. 11–13. *Limacella rhodopus*. — 11. Spores. — 12. Basidioles. — 13. Vertical section through pileus and gills (× 100). (All × 1000 unless otherwise stated.)



Figs. 3—13

On marshy ground. Wombali, Congo. Nov. 1913. Legit *H. Vanderyst* (S, type).

The above description is based upon Bresadola's original diagnosis, with the addition of some microscopical details obtained by the present author on examination of the type collection. The epithelium of the pileus surface, and the smooth, amyloid spores, clearly place this minute species within the genus *Cystoderma* Fayod. It may be distinguished from the other known species in the section *Cystoderma* by the colour and habitat of the sporophore.

Macrolepiota imbricata (P. Henn.) Pegler, *comb. nov.*—Text-fig. 10

Lepiota imbricata P. Henn. *in* Hedwigia **34**: 333. 1895 (basionym).

Adi-Quieh, Ethiopia. Alt. 2,000 m. 12 May 1894. Legit *G. Schweinfurth* (S, type).

The type collection consists of a well preserved sporophore with thick, imbricate scales on the pileus surface, and a glabrous stipe. It approcaches very closely to *Macrolepiota rhacodes* (Vitt.) Sing. in many respects but differences occur in the shape and size of the spores; the two species are therefore regarded as distinct. The spores of *M. imbricata* measure 10.3–13.5 × 8–9 (11 × 8.3) μ, and constantly show a germpore though this is never truncate, so that the spore outline ranges from subglobose to broadly ellipsoid. The spores of European material of *M. rhacodes* are distinctly truncate, and generally narrower (9–12 × 5.5–7 μ).

AMANITACEAE Roze

Limacella rhodopus (Bres.) Pegler, *comb. nov.*—Text-figs. 11–13

Marasmius rhodopus Bres. *in* Annuar. R. Ist. Bot. Roma **5**: 175, pl. 8, fig. 2. 1893 (basionym).

Pileus 10–30 mm diam., at first convex then expanded depressed, sometimes broadly umbonate, thin, yellowish-white, rugulose, glabrous; margin incurved, pellucid striate. *Lamellae* adnexed to free, greyish-white becoming stramineous, subdistant, lamellulae present but no interveining. *Stipe* 2–3 cm × 1.5—4 mm, equal or attenuated towards the base, somewhat compressed, fistulose, reddish-fuscous fading to white at the apex, sulcate, pulverulent. Membranous annulus or glutinous belt not recorded. *Context* hyaline, inamyloid, consisting of two well defined layers. The upper layer, 130–250 μ thick, is strongly gelatinized with loosely arranged hyphae, 1–3 (–5) μ diam., embedded in a hyaline matrix; the walls of most of the hyphae have lost their identity. Occasionally the uppermost hyphae of this layer are arranged vertically and penetrate for a short distance into the surface pellicle. The lower layer forms a narrower zone, 35–45 μ thick, and is non-gelatinized, consisting of horizontal, more or less parallel hyphae, which may be inflated (up to 10.5 μ diam.). The hyphae of this layer are continuous with the mediostratum of the lamellae. *Spores* 9–11.5 × 6.5–8.2 (10.3 × 7) μ, broadly ellipsoid, hyaline or with a slight yellowish tint in the dried material, wall distinctly thickened, smooth, contents staining deeply in aniline blue in lactic acid, inamyloid. *Basidia* 25–38 × 8–9.5 μ, claviform, bearing 4 sterigmata (up to 5 μ long). *Cheilocystidia* and *pleurocystidia* absent. *Basidioles* 25–37 × 3–6.5 μ, present on the gill-edge, cylindric with a subcapitate apex, projecting, hyaline, not staining as deeply as the basidia.

Hymenophoral trama bilateral, hyaline, consisting of a non-gelatinized mediostratum of thin-walled hyphae, 5–12 μ diam., and strongly gelatinized lateral strata in which the walls of the hyphae are indistinct. Subhymenial layer well developed, cellular. *Pileus surface* covered by a broad gelatinized pellicle, 45–85 μ thick, hyaline, amorphous. All hyphae provided with clamp-connexions, which are often small and inconspicuous.

On wood, Fekerie-Ghemb Forest, Shoa Mountains, Ethiopia. Legit *V. Ragazzi* nos. *10*, *13* pr. p. (S, type).

This species does not fall readily into any of the accepted genera of hyaline-spored agarics, however the combination of a bilateral trama in the gills, and the extensive gelatinization would strongly suggest that it belongs in *Limacella* Earle. The most striking feature is the very thick, gelatinous pellicle which covers the entire surface of the pileus, the few vertical hyphae which penetrate this layer might be regarded as representing the remnants of a trichodermium. The large dimensions of the spores are an atypical feature for the genus, although *L. oaxacana* Sing., described from Mexico, is stated to have spores which measure 7.3–10.5 × 5.8–8.5 μ Furthermore the similarity in the high altitude localities of these two species would indicate that they may be fairly closely related within this essentially temperate genus.

Pluteus brunneisucus Pegler, *sp. nov.*—Text-figs. 14–19

Pileus 30 mm diam., e convexo expansus, obtuse umbonatus, atro-umbrinus vel niger, radialiter innato-fibrillosus, ad marginem carne pallidiore exposita. Lamellae liberae, late ventricosae, sordido-incarnatae; ad aciem atrobrunneae, interdum concolores. Stipes 60 × 6 mm, aequalis vel ad basim leviter incrassatus, cavus, ad apicem pallido-griseus,apice excepto squamulis fibrillosis, atrobrunneis totus obtectus. Caro tenuissima, albida; hyphae inflatae, tenuitunicatae, fibulatae. Sporae 7–9 × 5.5–7.5 (8 × 6.5) μ, subglobosae, sub micr. hyalinae vel pallido-incarnatae, interdum flavo-brunneae. Basidia 30–40 × 7.5–10 μ, claviformia, 4-sporigera. Cheilocystidia copiosa, 54–84.5 × 8–15 μ, tenuitunicata, cylindrico-fusiformia vel elongato-ventricosa, apice acuto; brunneolo-vacuolata. Pleurocystidia 48–52 × 10.5–13.5 μ, inflate fusiformia, saepe mucronata. Cellulae ultimae cuticulae pilei subcylindricae vel elongato-fusiformes, 50–245 × 7.5–17.5 μ, fibulatae. Ad terram, Varneys, St. Helena Is. 16 April 1965. Legit *A. Loveridge* (Typus).

Pileus 30 mm diam., convex becoming expanded, obtusely umbonate, dark umbrinous to black, innately radially fibrillose, with the white underlying flesh showing through towards the margin; slightly rugulose and veined towards the centre, and without scales; margin slightly serrate. *Lamellae* free, moderately crowded, broadly ventricose, sordid pink often with a distinctive dark brown edge though sometimes concolorous. *Stipe* 60 × 6 mm, equal or slightly thickened below, hollow, pale grey towards the apex but elsewhere covered by an extensive dark brown fibrillose layer which may become detached in places to form indefinite recurved scales. *Taste* and *smell* unknown. *Context* very thin in the pileus, whitish, consisting of thin-walled inflated hyphae with numerous clamp-connexions. *Spores* 7–9 × 5.5–7.5 (8 × 6.5) μ, subglobose, under the microscope hyaline or pale pink, though a few are tinged brown, thin-walled, containing numerous oil-guttules. *Spore print* unknown. *Basidia* 30–40 × 7.5– 10 μ, claviform with a basal clamp-connexion, 4-spored, sterigmata up to 5 μ long. *Cheilocystidia* present, abundant, 54–84.5 × 8–15 μ, a few hyaline but mostly with abundant brown, vacuolar sap, thin-walled, fusiform-cylindric to elongate

with a ventricose base, and pointed apex. *Pleurocystidia* numerous, 48–52 × 10.5–13.5 μ, many with a long pedicellate base; inflated fusiform, often with brownish contents, frequently mucronate with the mucro 7–12 μ long. *Pileus surface* consisting of a filamentous cutis of subcylindric or elongate fusiform cells, thin-walled, brown contents, clamp-connexions at the septa; terminal elements 50–245 × 7.5–17.5 μ.

On the ground (probably on buried wood), under pear tree, Varneys, St. Helena Island, South Atlantic. 16 April 1965. Legit *A. Loveridge* (Type).

The above description is based on a single sporophore which has been preserved in alcohol. However, as there are a number of distinctive and unique features present, it was decided that the species could be confidently described as new. Both the cheilocystidia and the pleurocystidia are of the thin-walled leptocystidioid type, and not metuloids, so that the species clearly belongs in the section *Hispidoderma* Fayod of the genus *Pluteus*. The hyphae, particularly those of the stipe, were readily observed, and the presence of abundant clamp-connexions restricts the species to the stirps *Nigrolineatus*. *Pluteus brunneisucus* may be separated macroscopically from the other species in this group by the abundant, dark, fibrillose covering to the stipe. *Pluteus nigrolineatus* Murr., recorded from Florida (U.S.A.) and Argentine, further differs by the blue base to the stipe, the concolorous gill-edge, and the more ellipsoid spores. *Pluteus umbrinidiscus* Murr., from North America, has a more brightly coloured pileus, a concolorous gill-edge, and much smaller cheilocystidia. According to the analysis given by Singer (1956), *P. avellaneus* would appear close to *P. brunneisucus*, but Stuntz & Smith (1958) state that the type material lacks clamp-connexions.

BOLBITIACEAE Sing.

CONOCYBE OCHRACEA (Kühn.) Sing.

var. **africana** Pegler, *var. nov.*—Text-figs. 21–25

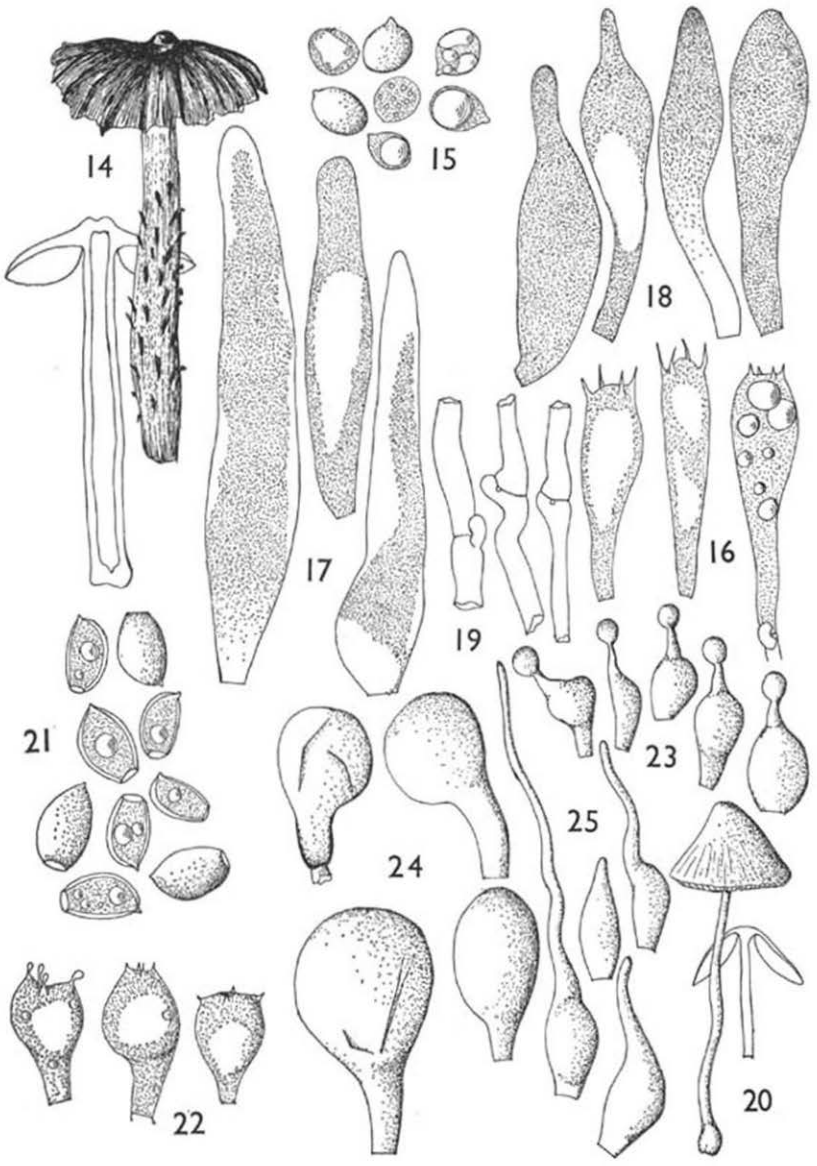
A var. *ochracea* differt stipite toto albido et magnitudine maiore. In pratum, Makerere University Campus, Uganda. Alt. 4,300 ft. 1 June 1964. legit *A. Ojong.* Comm. *E. A. Calder*, no. *105* (Typus).

Pileus 12–30 mm diam., conico-campanulate, 'Light Ochraceous Buff' becoming deeper ochraceous towards the apex, finely striate, with the striae a darker brown; margin straight, somewhat crenate. *Lamellae* ascendant adnate to adnexed, ochraccous buff to rust-brown, linear or subventricose, moderately crowded, and with lamellulae; edge entire, concolorous. *Stipe* 5–11 cm × 1–4 mm, equal, filiform, flexuous, usually with a bulbous base (up to 6 mm diam.), hollow, white over the entire length, pruinose towards the apex. *Context* very thin, pale to concolorous. *Spores* 9–12.5 ×

EXPLANATION OF FIGURES 14–25

Figs. 14–19. *Pluteus brunneisucus.* — 14. Habit of sporophore and section (× 1). — 15. Spores. — 16. Basidia. — 17. Cheilocystidia. — 18. Pleurocystidia. — 19. Clamp-connexions.

Figs. 20–25. *Conocybe ochracea* var. *africana.* — 20. Habit of sporophore and section (× 1). — 21. Spores. — 22. Basidia. — 23. Cheilocystidia. — 24. Epithelial sphaerocysts. — 25. Hairs on stipe. (All × 1000 unless otherwise stated.)



Figs 14—25

6–8 (11 ×7) μ, ovoid to ellipsoid, occasionally with a slight hexagonal outline in frontal view, rust-brown, thick-walled, smooth, with a broad truncate germ-pore and containing at least one, often several small oil-guttules. *Spore print* deep rust-brown. *Basidia* 16.5–22 × 10–12.5 μ, broad piriform pedicellate, constantly bearing 4 short sterigmata (up to 3.5 μ long). *Cheilocystidia* numerous, 16.5–23 × 4.5–9.5 μ, lecythiform, hyaline, with a small globose head, 3–4 μ diam., the base occasionally not becoming inflated. *Pleurocystidia* absent. *Hymenophoral trama* regular but reduced to a narrow mediostratum of filamentous hyphae, flanked by a well developed hymenopodium of broadly inflated hyphae. *Pileus surface* an epithelium of subglobose or piriform sphaerocysts, mostly monostratous, but sometimes a catenate arrangement is found; individual cells 11.5–24.5 μ diam., hyaline at the apex, but with the wall pigmented brown towards the basal septum; no pilocystidia observed. *Caulocystidia* present, confined to the upper region of the stipe, obovoid to fusiform, 5.5–9 μ diam., hyaline, many with a long flexuous neck, up to 60 μ long, 1–2.5 μ diam.; lecythiform cystidia not produced on the stipe. All hyphae are provided with clamp-connexions.

In open grass, on mown lawn. Makerere University Campus, Uganda. Alt. 4,100 ft. 1 June 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *105* (Type).

The presence of lecythiform cystidia on the gill-edge, coupled with the complete absence of these structures on the surface of the stipe, place this fungus in the section *Pilosellae* (Kühn.) Sing. of *Conocybe* Fayod. Microscopically the Uganda material agrees in every detail with the macrosporous form of the European species, *C. ochracea*, as originally described from France, by Kühner (1935). However, the white coloration of the stipe found in the Uganda collection would suggest that it is distinct from *C. ochracea* as understood in Europe. Typically *C. ochracea* has a stipe which may be white at the apex, but is distinctly brownish or ochraceous for the greater length, and indeed, this is so throughout the section *Pilosellae*. The section *Candidae* (Kühn.) Sing. was erected to accomodate the white-stemmed species but, because all the other structures conform so closely, it is decided to regard this fungus as a tropical variety of *C. ochracea*.

COPRINACEAE Roze

Coprinus africanus Pegler, *sp. nov.*—Text-figs. 26–30

Pileus 3–6 cm altus, 2.5–4.5 cm latus, e conico-convexo conico-expansus vel expansus late umbonatus, primo totus griseo-brunneolus, radialiter sulcato-striatus, velo paupero. Lamellae liberae, confertae, fusco-nigricantes; ad aciem sub lente pruinosae. Stipes 6–15 cm × 4–8 mm, aequalis, cylindricus, cavus, totus albus; annulo nullo. Caro tenuissima, concolorata. Sporae 5.3–7.6 × 4–5 × 3.7–4.8 (6.3 × 4.7 × 4.5) μ, ellipsoideo-amygdaliformes, atrofuscae, laeves, poro germinativo truncato. Basidia 14–18 × 5–7 μ, late claviformia vel subcylindrica, 4-sporigera. Pleurocystidia 60–90 × 20–28.5 μ, utriformia vel ventricoso-fusiformia, hyalina, tenuitunicata. Cheilocystidia pleurocystidiis similia. Trama hymenophoralis regularis. Cellulae cuticulae pilei late inflatae, hyalinae, 34-85 × 11.5–25 μ. Hyphae veli ad discum pilei hyalinae vel luteo-brunneae, 2.5–8.5 μ diam. Hypae fibulis praeditae.

Inter folias. Mpanga Forest, Makerere University College, Uganda. Alt. 4,300 ft. 27 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *76* (Typus).

Pileus 3–6 cm high, 2.5–4.5 cm wide, conico-convex then expanded and broadly umbonate, 'Drab-Gray' to 'Light Brownish Drab' at the disc, margin becoming

blackish as gills deliquesce; sulcate-striate almost to the disc. *Veil* absent except for a few indefinite, silky fibrils. *Lamellae* free, ascending, densely crowded with numerous lamellulae, pale at first, finally fuscous-black, deliquescent; edge white pruinose. *Stipe* 6–15 cm × 4–8 mm, equal, cylindric, hollow, pure white over the entire length, smooth, devoid of a ring or annular zone. *Context* thin, concolorous. *Spores* 5.3–7.6 × 4–5 × 3.7–4.8 (6.3 × 4.7 × 4.5) μ, ellipsoid-amygdaliform, fuscous black, discolouring in concentrated H_2SO_4, smooth, with a complex double wall, and a broad truncate germ-pore. *Spore print* dark 'Fuscous'. *Basidia* 14–18 × 5–7 μ, broadly claviform to subcylindric, sometimes narrowed in the middle, bearing 4 sterigmata (up to 4 μ long). *Cheilocystidia* present, prominently projecting from the immature gills, similar to the pleurocystidia. *Pleurocystidia* numerous, 60–90 × 20–28.5 μ, hyaline, utriform to ventricose-fusiform, thin-walled, readily observed with a hand lens. *Hymenophoral trama* regular, hyaline, narrow, consisting of broadly inflated thin-walled hyphae. *Pileus-surface* formed of irregular, radiating chains of elongated elements, which are hyaline, thin-walled, often broadly inflated, 34–85 × 11.5–25 μ. The remnants of the veil consist of elongate hyaline or pale brown hyphae, 2.5–8.5 μ diam., which are smooth, moderately thin-walled, with clamp-connexions at the septa. All hyphae provided with clamp-connexions.

Amongst fallen leaves, etc. Mpanga Forest, Makerere University College, Uganda. Alt. 4,300 ft. 27 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *76* (Type).

The macroscopic appearance, the structure of the pileus-surface, and the large voluminous cystidia indicate that this species is closely related to *C. atramentarius* (Bull. ex Fr.) Fr. and *C. insignis* Peck. It should therefore be placed in the section *Coprinus* Sing., subsection *Atramentarii* (Fr.) Konr. & Maubl. *Coprinus africanus* may be distinguished from *C. atramentarius* by the decidedly smaller and differently shaped spores, the lack of any velar scales on the pileus, and the absence of a basal, annular zone to the stipe. *Coprinus insignis* differs in having a silky fibrillose veil, and ornamented spores.

COPRINUS CHAIGNONI Pat.—Text-figs. 31, 32

Coprinus chaignoni Pat. *in* Bull. Soc. mycol. Fr. **19**: 246. 1903.

Pileus 6–10 mm high, 15–20 mm wide, thin, conico-ovate to campanulate, then expanded, deliquescent at the margin. Surface sulcate striate and at first covered by an ochraceous, furfuraceous veil, forming small imbricate squamules which are persistent at the apex. *Lamellae* black, narrow. *Stipe* up to 2 cm long, white, slender, with the base sheathed in an ochraceous, cupulate volva. *Spores* 6.6–10 × 4–5.3 (8 × 4.7) μ, ellipsoid to cylindric-phaseoliform, fuscous-black, smooth, translucent, with a broad germ-pore. *Cystidia* not observed. *Pileus-surface* cellular-hymeniform, consisting of subglobose, smooth, hyaline elements, 25–52 μ diam. *Velar elements* mostly globose or piriform, 22–60 μ diam., minutely verrucose; also present are a few cylindric or irregularly fusiform elements, c. 48–60 × 8–19 μ, hyaline or with a slight yellowish tint.

On sandy ground, Bir m'Chegga, Tunisia. Legit *Cl. de Chaignon* (FH, type).

The fragmentary state of the type material has prevented any addition being made to the macro-characters provided by Patouillard. The presence of a granular veil on the pileus, together with a tomentose volva, would certainly place this species

within the section *Picacei* Fr. of the genus *Coprinus*. The presence of punctate sphaerocysts in the veil suggests that *C. chaignoni* approaches most closely to *C. cineratus* Quél., of the European species.

COPRINUS DISSEMINATUS (Pers. ex Fr.) S. F. Gray—Text-figs. 33, 34

Coprinus disseminatus (Pers. ex Fr.) S. F. Gray, Nat. Arrangement Brit. Pl. **1**: 634. 1821.

This common temperate species would also appear to have a wide pantropical distribution. African collections have been received from Mpanga Forest, Uganda. Alt. 4,300 ft. 11 May 1964. Legit *E. A. Calder*, no. *102*; and also from Muguga district, Kenya. August 1964. Legit *F. M. Munga*, no. *F. 19*. It may be readily recognised by the gregarious habit; the large, setuliform pilocystidia; and brown, ellipsoid spores which measure 7–8.5 × 4–4.8 (7.8 × 4.5) μ.

COPRINUS DRYOPHILUS Pat.—Text-figs. 35, 36

Coprinus dryophilus Pat. *in* Bull. Soc. mycol. Fr. **18**: 49. 1902.

Pileus 4–7 cm wide, convex campanulate, tough, fleshy, citrine yellow flushed with reddish-brown particularly at the disc, and covered by distant, reddish-brown scales of the veil; margin striate. *Lamellae* black, straight, with serrated edge, soon deliquescent. *Stipe* cylindric, attenuated towards the rooting base; concolorous with the pileus, striate, hollow, bearing a few indistinct scales. *Spores* 8.7–12 × 7–8.3 × 6–8 (10.5 × 7.5 × 7.2) μ, amygdaliform, mitriform in face-view, dark brown, smooth, with a distinct, frequently truncate, germ-pore. *Cystidia* not observed. *Pileus-surface* composed of hyaline or yellowish tinted, filamentous chains of elongate elements, with short side branches. Individual elements measure 20–95 × 5–20.5 μ, are smooth and provided with clamp-connexions at the septa while the terminal elements are usually cylindric. *Velar* scales not observed.

On *Quercus* trunk, El Fedja, Tunisia. April (FH, type).

The poor condition of the type material has prevented any further study on the macro-characters of this large fleshy species. However, the filamentous nature of the pileus-surface indicates that *C. dryophilus* would be best placed within the section *Coprinus*, subsection *Alachuani* Sing.

COPRINUS PLICATILIS (Curt. ex Fr.) Fr.—Text-fig. 37

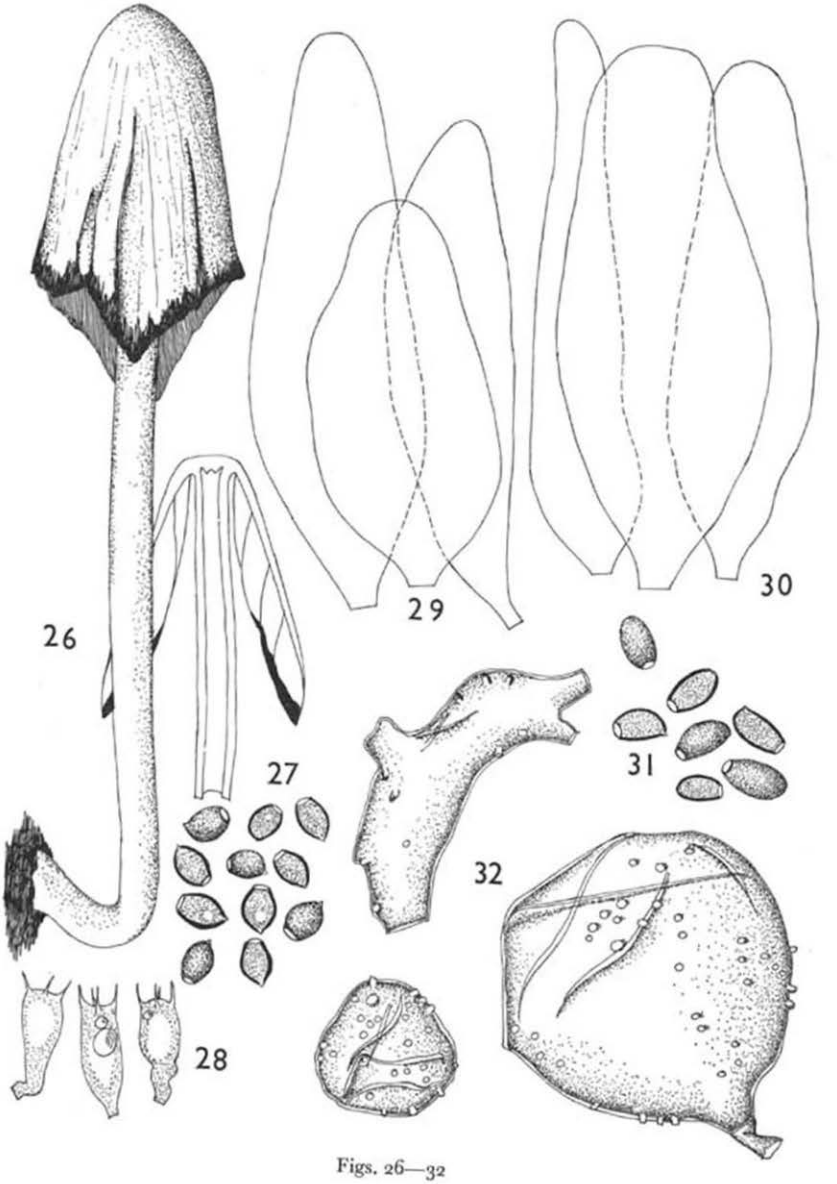
Coprinus plicatilis (Curt. ex Fr.) Fr., Epicrisis 252. 1838.

This common species is usually to be found growing amongst grass, or on garden soil. It has been frequently collected in both East and West Africa, and the following collections have been received: Njala, Sierra Leona. 20 Dec. 1933. Legit *F. C.*

EXPLANATION OF FIGURES 26–32

Figs. 26–30. *Coprinus africanus*. — 26. Habit of sporophore and section (× 1). — 27. Spores. — 28. Basidia. — 29. Cheilocystidia. — 30. Pleurocystidia.

Figs. 31, 32. *Coprinus chaignoni*. — 31. Spores. — 32. Elements of veil. (All × 1000 unless otherwise stated.)



Figs. 26—32

Deighton, no. *M. 59*; Njala, Sierra Leone. 17 April 1934. Legit *F. C. Deighton*, no. *M. 653*; Cacao Research Institute, Tafo, Ghana. 1955. Legit *Miss M. Holden*; Kikuju Province, Kenya. July 1963. Legit *F. Munga*, no. *F.9*; Makerere University campus. Alt. 4, 100 ft. 1 June 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *106*. This non-deliquescent species may be recognised by the strongly expanded, plicate pileus with a tawny, central disc; and oval-rhomboidal spores, ellipsoid in profile, which measure 11.5–16.5 × 11.5–13.5 × 8.5–11 (15 × 12.3 × 10) μ.

COPRINUS SEMIANUS Pat.—Text-fig. 38

Coprinus semianus Pat. *in* Bull. Soc. mycol. Fr. **20**: 53. 1904.

Pileus up to 20 mm high, 25 mm wide, fleshy, ovoid to cylindric with an obtuse rounded apex; white or whitish, covered towards the disc by thick, ochraceous-yellow, velar scales. *Lamellae* white at first, deliquescent, broad, unequal. *Stipe* 7–12 cm long, up to 10 mm diam., whitish, bearing a few small scales particularly in the lower region, cylindric though expanding towards the base to form a radicant, non-marginate bulb, up to 2 cm diam.; hollow except for the base which is hard, woody in texture. *Spores* 8–14.5 × 6.5–9.3 (10.7 × 7.6) μ, ellipsoid, fuscous, with complex double wall, and a small germ-pore. *Cystidia* not observed. *Pileus-surface* and velar structure not discernible.

On the ground, M'zi wadi, Laghouat, Algeria. Oct. 1903. Legit *Cpt. Sem* (FH,type).

The type material is in a very fragmentary state and it has not been possible to examine any of the pileal structures. Accompanying the collection are some field-notes made by the collector, concerning the appearance and size of the fungus, and these have been incorporated into the above description to supplement Patouillard's original diagnosis. The type sheet also bears the following comment by Patouillard: "Très différent de *C. comatus* par l'absence d'anneau, la forme et texture du pied et par les spores plus rondes et plus longues." The species is probably best placed in the section *Coprinus* of the genus *Coprinus*.

Psathyrella atroumbonata Pegler, *sp. nov.*—Text-figs. 44–48

Pileus 15–50 mm latus, e conico-campanulato expansus, obtuse umbonatus, pallide ochraceo-bubalinus vel vinoso-cinnamomeus, ad discum atrobrunneus, ad marginem striatulus; e velo albo appendiculato demum glabrescens. Lamellae sinuato-adnatae, e pallido griseo-brunneae; ad aciem sub lente albo-flocculosae. Stipes 5–9 cm × 3–5 mm, aequalis, cylindricus, cavus, albidus. Caro tenuissima, albida. Sporae 5.5–8.5 × 3.7–5.2 (6.7 × 4.5) μ, ellipsoideae vel pruniformes, sub micr. pallide fuscae, pellucidae, cum poro germinativo. Basidia 12.5–16 × 5.5–7 μ, claviformia; 4-sporigera. Cheilocystidia copiosa, 13.5–34 × 8.5–11.5 μ, piriformia, utriformia vel lageniformia, hyalina, tenuitunicata. Pleurocystidia nulla. Trama hymenophoralis regularis, angusta, hyalina. Cuticula pilei cellularis.

Ad terram, inter folias. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 24 April 1964. Legit *E. A. Calder*, no. *74* (Typus).

Pileus 15–50 mm diam., conico-campanulate becoming expanded, obtusely umbonate, 'Light Ochraceous Buff' to 'Light Vinaceous Cinnamon', darkening at the umbo to 'Bister', faintly striate at the margin. There is an abundant white fibrillose veil present forming appendiculate scales at the margin which disappear

on maturity. The *veil* consists of loosely interwoven hyphae, 2–5 μ diam., hyaline thin-walled, septate with clamp-connexions. *Lamellae* sinuate-adnate, pale grey then 'Fuscous', moderately crowded, edge white flocculose. *Stipe* 5–9 cm × 3–5 mm, cylindric, equal, hollow, white, smooth without any trace of a veil, except in very young specimens. *Context* very thin, white. *Spores* 5.5–8.5 × 3.7–5.2 (6.7 × 4.5) μ, ellipsoid to pruniform, under the microscope pale fuscous, translucent, germ-pore small and at times indistinct. *Spore print* 'Fuscous'. *Basidia* claviform, 12.5–16 × 5.5–7 μ, with 4 short sterigmata. *Cheilocystidia* abundant, 13.5–34 × 8.5–11.5 μ, hyaline, thin-walled, forming a sterile gill-edge, varying in shape from piriform or utriform to lageniform. *Pleurocystidia* absent. *Hymenophoral trama* regular, hyaline in NH_4 OH, even in young specimens, consisting of thin-walled, inflated hyphae (up to 7 μ diam.). The trama proper is restricted to a very narrow region, rarely exceeding 12 μ in width, by a well developed subcellular hymenopodium. *Pileus-surface* a monostratous epithelium, consisting of vesiculose, piriform or ellipsoid cells. Cells hyaline, thin-walled, 14.5–30 μ diam., devoid of any brown pigmentation. All hyphae provided with clamp-connexions.

Amongst litter, including *Acalypha* L., and *Oplismenus* Beauv. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 27 April 1964. Legit *E. A. Calder*, no. 74 (Type).

The appendiculate veil, lack of pleurocystidia, a hyaline hymenophoral trama, and small spores would all suggest that this species of *Psathyrella* is closely related to *P. candolliana* (Fr.) Maire, and should be placed within the subgenus *Hypholoma* (Fr.) Sing. However it may be readily distinguished by a number of characters, particularly in the lack of a purplish-lilac tinge to the gills, the dark brown umbonate pileus, and in the smaller and differently shaped cheilocystidia. *Psathyrella spintrigera* (Fr.) Konr. & Maubl. differs in having a brown pigmented hymenophoral trama, and an abundant and persistent veil which forms scales on the pileus and an annulate zone on the stipe. *Psathyrella microlepidota* P. D. Orton similarly has an abundant veil on the pileus and the stipe, and also larger cheilocystidia and smaller spores.

PSATHYRELLA CANDOLLIANA (Fr.) Maire

See *Psilocybe albobrunnea*, p. 102.

Psathyrella glandispora Pegler, *sp. nov.*—Text-figs. 39–43

Pileus 20–50 mm latus; e conico-convexo expansus, interdum obtuse umbonatus, avellaneus vel ravo-cinnamomeus, ad discum obscurius brunneus, laevis, striatulus; ad marginem demum reflexus. Lamellae liberae vel adnexae, pallide griseo-brunneae, confertae, ad aciem sub lente minutissime albo-flocculosae. Stipes 3–7 cm × 2–4 mm, aequalis, cylindricus, cavus, pileo concolor, ad apicem leviter albo-pruinosus. Caro tenuis, concolorata. Sporae 7.5–9.2 × 4–5.5 (8.2 × 4.6) μ, ellipsoideae vel *Quercus* glandi similes, sub micr. rufo-brunneae, pellucidae, cum poro germinativo. Basidia 13.5–18 × 7.5–9 μ, claviformia, 4-sporigera. Cheilocystidia copiosa, 21–35 × 7–10.5 μ, urniformia vel obtuse lageniformia, hyalina, tenuitunicata. Pleurocystidia nulla. Trama hymenophoralis regularis, angusta, pallide brunnea. Cuticula pilei cellularis.

Ad mortuos ramulos. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 16 April 1964. Legit *A. Ojong.* Comm. *E. A. Calder.* no. *51* (Typus).

Pileus 20–50 mm diam., conico-convex then expanded to almost plane or with a low, obtuse umbo, 'Avellaneous' to 'Cinnamon-Drab', darkening at the centre to

'Verona Brown'; margin slightly reflexed at maturity. *Lamellae* adnexed to free, light brown, linear, crowded, with numerous lamellulae; edge white, minutely denticulate. *Stipe* 3–7 cm × 2–4 mm, cylindric, equal, hollow, concolorous with the pileus or paler, apex white pruinose, remainder smooth, fibrillose. *Context* of cap, thin, concolorous, consisting of broadly inflated, thin-walled hyphae. *Spores* 7.5–9.2 × 4–5.5 (8.2 × 4.6) μ, smooth, ellipsoid, pointed at the apiculate end. under the microscope reddish-brown, translucent, with few contents except for occasional small oil guttules, a fairly thin wall, and a broad, truncate germ-pore. *Spore print* cinnamon fuscous. *Basidia* short claviform, 13.5–18 × 7.5–9 μ, bearing 4 sterigmata, 2–3.5 μ long. *Cheilocystidia* abundant, forming a sterile gill-edge, leptocystidioid, 21–35 × 7–10.5 μ, urniform to obtusely lageniform, with a broad neck and rounded apex, occasionally claviform, hyaline, thin-walled. *Pleurocystidia* absent. *Hymenophoral trama* regular, brown pigmented in NH_4 OH, consisting of broadly inflated thin-walled hyphae (up to 14.5 μ wide). The trama proper is restricted to a narrow region, never more than 4.5 μ wide, by a well developed, hyaline, subcellular hymenopodium, suggesting a false bilaterality. *Pileus-surface* a monostratous epithelium of vesiculose and piriform cells, not forming a true palisade. Cells hyaline or with a pale brown membrane pigment, 8–25 μ wide; beneath these is a thin hypodermium of filamentous, orange-brown hyphae.

On dead twigs, amongst *Zingiber* and *Piper*. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 16 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *51* (Type).

There is no evidence, either from examination of the dried material or from the collector's field notes, to suggest that *P. glandispora* bears a veil. The presence of thin-walled, utriform cystidia covering the gill-edge, places the species in the subgenus *Hypholoma* (Fr.) Sing. However the combination of a brown-pigmented, hymenophoral trama, and spores that measure more than 6.5 μ in length, makes it difficult to suggest any further affinitiy. The section *Spintrigerae* (Fr.) Sing. is characterised by the combination of these characters, but the only known species, namely *P. spintrigera* (Fr.) Konr. & Maubl., has an abundant veil, and a ring which persists on the stipe. Other species with a pigmented trama fall into either the section *Hydrophilae* (Romagn.) Sing., which has very small spores, or the section *Frustulentae* (Romagn.) Sing., which has numerous pleurocystidia.

CORTINARIACEAE Roze

Galerina makererіensis Pegler, *sp.* nov.—Text-figs. 49–52

Pileus 10–75 mm latus, e conico-campanulato expansus, ad discum fulvo-ochraceus, ad marginem pallidius ochraceotinctus; laevis, hygrophanus. Lamellae adnato-adnexae interdum

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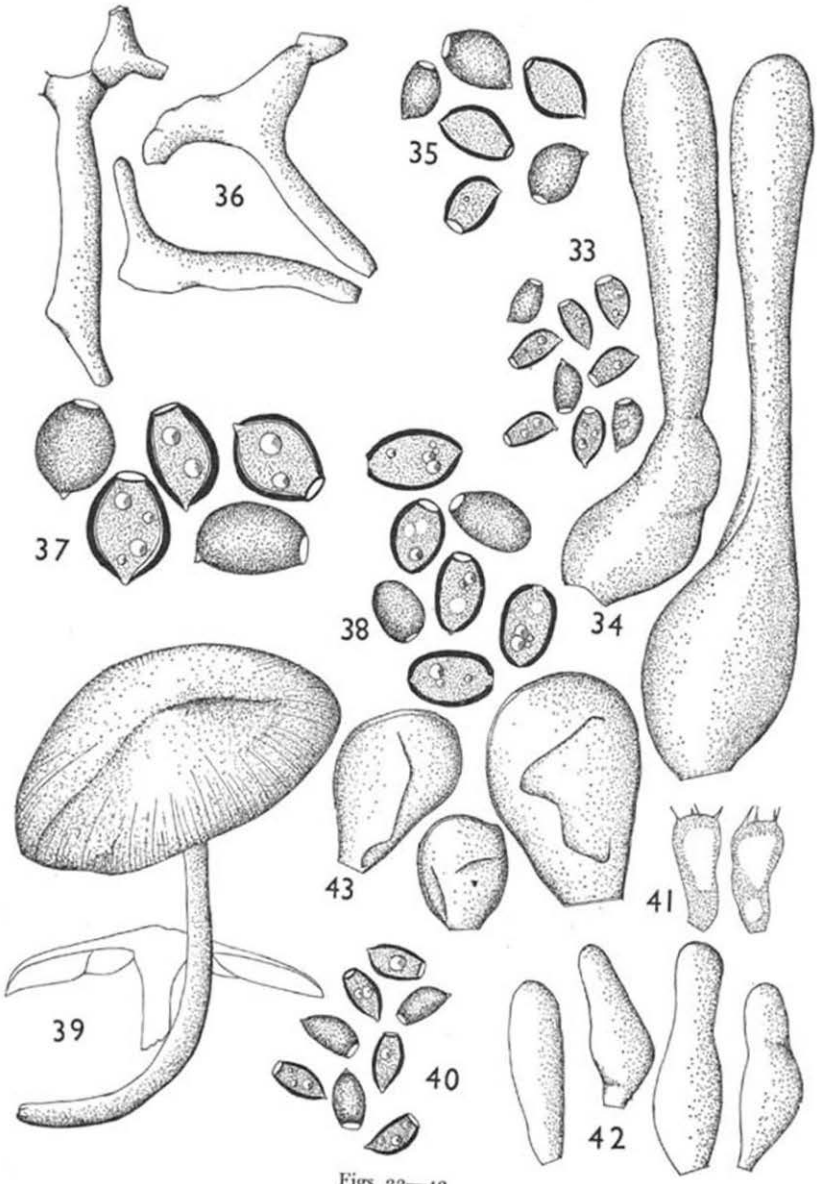
EXPLANATION OF FIGURES 33–43

Figs. 33, 34. *Coprinus disseminatus*. — 33. Spores. — 34. Pilocystidia.
Figs. 35, 36. *Coprinus dryophilus*. — 35. Spores. — 36. Cuticular elements.
Fig. 37. *Coprinus plicatilis*. Spores.
Fig. 38. *Coprinus semianus*. Spores.
Figs. 39–43. *Psathyrella glandispora*. — 39. Habit of sporophore and section (× 1). — 40. Spores. — 41. Basidia. — 42. Cheilocystidia. — 43. Epithelial sphaerocysts. (All × 1000 unless otherwise stated.)



Figs. 33—43

dente decurrente, pallide ochraceo-bubalinae vel cinnamomeae, subconfertae, ad aciem concoloratae. Stipes 2–11 cm × 2–6 mm, ad basim incrassatus; cavus, supra albidus infra pallide ochraceus; striatus; annulus brunneus manifestus. Caro tenuis, pallide brunnea. Sporae 6.3–9 × 3.5–5 (7.3 × 4.2) μ, amygdaliformes, sub lente fulvobrunneae, minute punctatae, perisporio calyptrato. Basidia 14.5–19 × 4–6 μ, claviformia vel subcylindrica; 2- vel 4-sporigera. Cheilocystidia 31–40 × 7.5–10 μ, hyalina, tenuitunicata, lageniformia. Pleurocystidia copiosa, 30–37 × 9–12.5 μ, hyalina, lageniformia vel inflato-fusiformia. Trama hymenophoralis stricte regularis, subcellularis. Hyphae cuticulae pilei, 2.5–7 μ latae, leviter incrustato-pigmentatae. Hyphae fibulis multis praeditae.

Inter muscos, ad lignum mortuum. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 11 May 1964. Legit *E. A. Calder*, no. *103* (Holotypus): Mpanga 69, Makerere University College, Uganda. 9 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. 27 (Paratypus).

Pileus 10–75 mm diam., at first conico-campanulate, becoming plano-convex, with a reflexed margin at maturity. The colour is pale ochraceous brown, 'Ochraceous-Tawny' at the apex, drying yellowish, while the surface is smooth and hygrophanous. *Lamellae* adnato-adnexed, sometimes with a slight decurrent tooth, 'Light Ochraceous-Buff' to 'Cinnamon', edge concolorous; moderately crowded. *Stipe* 2–11 cm × 2–6 mm, expanding gradually to 9 mm diam. at the base, hollow, white above, pale ochraceous below, longitudinally striate; with a persistent, rust-brown annulus, c. 1 cm from the apex. *Context* thin, never exceeding 4 mm in thickness, light brown. *Spores* 6.3–9 × 3.5–5 (7.3 × 4.2) μ, amygdaliform, rusty-brown, usually containing a prominent central oil-guttule, calyptrate, partially covered by the hood-like remains of the perispore. The wall is finely punctate though with a smooth suprahilar plage, and there is no obvious germ-pore. *Spore print* fulvo-ferruginous. *Basidia* claviform to subcylindric, 14.5–19 × 4–6 μ, bearing either 2 or 4 sterigmata. *Cheilocystidia* present, 31–40 × 7.5–10 μ, hyaline, thin-walled, smooth, subcylindric to lageniform, intermixed with basidia. *Pleurocystidia* present, numerous, 30–37 × 9–12.5 μ, hyaline, thin-walled, lageniform or inflated-fusiform. *Hymenophoral trama* strictly regular, of the subcellular-type, hyaline, not exceeding 100 μ in thickness, consisting of broadly inflated, thin-walled elements, 24–60 × 10–25 μ. *Subhymenial layer* very thin, 10–20 μ thick, formed by narrow, filamentous, interwoven hyphae. *Pileus surface* consists of a cutis, 14–23 μ thick, of interwoven, repent, hyaline hyphae, 2.5–7 μ diam., with slight interhyphal pigment incrustations. *Caulocystidia* absent. Hyphae provided with conspicuous clamp-connexions at the septa.

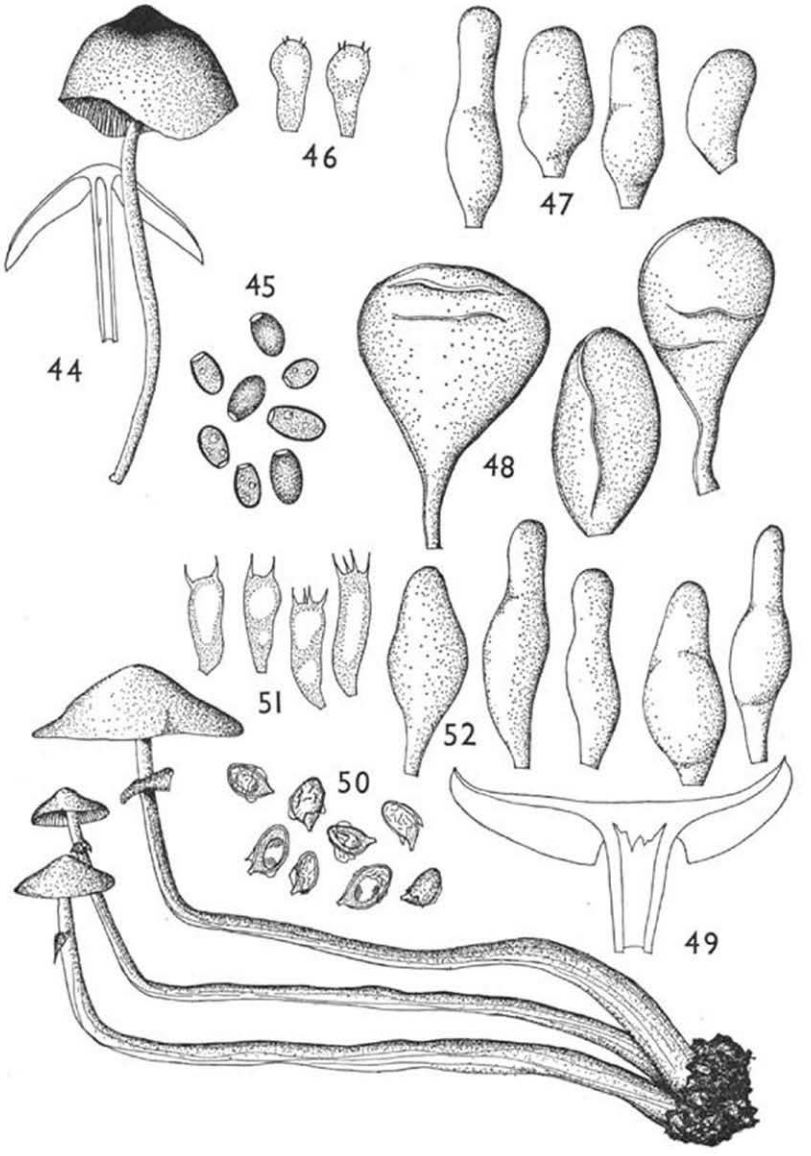
Amongst moss, on dead wood. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 11 May 1964.' Legit *E. A. Calder*. no. *103* (Holotype); Mpanga 69, Makerere University College, Uganda. 9 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *27* (Paratype).

The loose exosporium producing a highly characteristic appearance to the spores suggests that this species is best placed within the section *Calyptrospora* Smith &

EXPLANATION OF FIGURES 44–52

Figs. 44–48. *Psathyrella atroumbonata*. — 44. Habit of sporophore and section (× 1). — 45. Spores. — 46. Basidia. — 47. Cheilocystidia. — 48. Epithelial sphaerocysts.

Figs. 49–52. *Galerina makereriensis*. — 49. Habit of sporophore and section (× 1). — 51. Basidia. — 52. Pleurocystidia. (All × 1000 unless otherwise stated.)



Figs. 44—52

Singer of the genus *Galerina* Earle. According to Smith & Singer (1964) only two other species are known to possess both pleurocystidia and calyptrate spores, namely *G. filiformis* Smith & Sing. from Tropical America, and *G. macquariensis* Smith & Sing. from Southern Australasia.

The minute habit of *G. filiformis*, particularly the short, exannulate stipe, together with the larger spores, and the shape of the rare pleurocystidia, all contrast sharply with *G. makereriensis*. *Galerina macquariensis* which Singer & Smith have placed within their section *Physocystis* because of the presence of pleurocystidia, possesses an annulate stipe, and would appear much more closely related. It differs in having broader spores; a shorter, pale stipe which tapers towards the base; and in the habitat.

Gymnopilus njalensis (Beeli) Pegler, *comb. nov.*—Text-figs. 53–55

Pholiota njalensis Beeli *in* Bull. Jard. bot. État Brux. **15**: 40, pl. 3, fig. 27. 1938.

The type collection consists of a single fragmented sporophore which was at first preserved in alcohol but has subsequently been dried. Although the material is poor, the following micro-characters are discernable: *Spores* 7.2–9 × 4.8–6 (7.8 × 5.5) μ, rusty-melleous, ellipsoid, with a complex wall; surface strongly verrucose, with pyramidal verrucae (0.5–0.75 μ long). *Basidia* 22–25 × 5–7.5 μ, claviform though frequently constricted, bearing 2 or 4 sterigmata (up to 6.5 μ long). *Cheilocystidia* abundant, 16.5–23 × 4–5.5 μ, with a subcapitate apex, subventricose below, hyaline, thin-walled; many apically encrusted. *Pleurocystidia* absent. *Hymenophoral trama* regular, hyaline.

On garden-soil, Njala, Sierra Leone. 21 June 1935. Legit *F. C. Deighton*, no. *M727* (Type).

The species is clearly a member of the Cortinariaceae, and although it is stated to be terrestrial, the habit of the sporophore, the squamulose pileus, the annulate stipe, and the cheilocystidia are all more characteristic of *Gymnopilus* P. Karst. than *Cortinarius* Fr.

CREPIDOTACEAE (Imai) Sing.

CREPIDOTUS SPATHULATUS Bres.—Text-figs. 56, 57

Crepidotus spathulatus Bres. *in* Annuar. R. Ist. Bot. Roma **5**: 176, pl. 8, fig. 4. 1893.

Pileus 5–10 × 7–19 mm, spathulate cuneiform, thin, golden honey-coloured, radially striate, glabrous though with a white tomentose base. *Lamellae* decurrent, white becoming cinnamon, arcuate, crowded; edge entire, concolorous. *Stipe* absent. *Context* thin, concolorous, and when examined under the microscope is seen to consist of two distinct layers. The upper layer, 80–140 μ thick, is strongly gelatinized with loosely arranged, narrow hyphae, 1.5–3 μ diam., embedded in a hyaline matrix. The lower layer of the context is sharply differentiated from the gelatinous region, and is formed by compactly arranged, horizontal hyphae, 1.5–5 μ diam., lacking clamp-connexions at the septa. *Spores* 6.8–9.3 × 4.8–6 (7.5 × 5.3) μ, broadly ellipsoid, stramineous, thin-walled, smooth, devoid of a germ-pore. *Basidia* 16.5–23.5 × 6–7 μ, broadly claviform, bearing 4 sterigmata. *Cheilocystidia* not observed. *Pleurocystidia* absent. *Hymenophoral trama* regular, hyaline, consisting of subparallel hyphae similar to those of the context. Towards the gill-edge the trama forms a

decidedly gelatinized region in which the hyphae are very loosely arranged. *Pileus-surface* not differentiated, basically a cutis of repent hyphae, somewhat gelatinized, and bearing some membrane pigment incrustation. All hyphae devoid of clamp-connexions.

On decaying wood. Fekerie-Ghemb Forest, Shoa Mountains, Ethiopia. 19 March 1885. Legit *V. Ragazzi*, no. *12* pr. p. (S, type).

Pilát (1950) suggests in his key that *C. spathulatus* possesses a non-gelatinized context, but examination of the type collection has revealed considerable gelatinization both in the upper region of the pileus and also towards the edge of the gills. This may be readily demonstrated by mounting tangential sections in either cresyl blue in which the stain is taken up by the walls of the hyphae, or Indian-ink in which the ink fails to enter the gelatinized areas.

The structure of the spores and the context, together with the absence of clamp-connexions, indicate this species belongs in the section *Crepidotus* subsection *Defibulatini* Sing. However, Singer (1951) has suggested that this species may be more closely related to *Pleurotellus chioneus* (Pers. ex Fr.) Fayod ex Konr. & Maubl., because of the very pale coloration of the spores.

HYGROPHORACEAE Roze

HYGROPHORUS BIPINDENSIS P. Henn.—Text-figs. 58, 59

Hygrophorus (*Hygrocybe*) *bipindensis* P. Henn. *in* Bot. Jb. **30**: 49. 1899.

Pileus 25–40 mm wide, convex to campanulate, then expanded, becoming depressed in the centre, 'Cinnamon-Rufous' to 'Ochraceous Tawny', glabrous, striate at the margin. *Lamellae* arcuate decurrent, pale yellowish, subdistant; thickened at the edge. *Stipe* 3–7 cm × 2.5–4 mm, equal, cylindric or slightly expanded towards the apex, stuffed, smooth, concolorous with the pileus or paler. *Spores* 4.8–8 × 3.5–4.2 (6.8 × 4) μ, ovoid to elongate ellipsoid, at times constricted, hyaline, with a large oblique apiculus, and containing highly refractive oil guttules. *Basidia* 30–40 × 4–5 μ, cylindric, bearing 4 sterigmata (up to 5 μ long). *Hymenophoral trama* subregular, consisting of inflated, hyaline hyphae; no suggestion of any bilateral structure. *Pileus-surface* a cutis of repent, hyaline hyphae 3–8.5 μ diam., somewhat interwoven but not gelatinized.

On the ground. Bipindi, Cameroun. April 1899. Legit *G. Zenker*, no. *2027* (S, type).

An examination of the type collection has provided some additional information on the micro-characters, and this together with a water-colour sketch by Zenker, which accompanies the material, provides a more complete description than that originally published by Hennings. The structure of the hymenophoral trama clearly indicates that the species has been correctly placed within the subgenus *Hygrocybe* (Fr.) Fr. of the genus *Hygrophorus*.

POLYPORACEAE Fr.

LENTINUS BAGUIRMIENSIS Pat. & Har.

Lentinus baguirmiensis Pat. & Har. *in* Bull. Soc. mycol. Fr. **24**: 14. 1908.

Pileus 5–7 cm diam., plane becoming depressed at the centre, thin, ochraceous drying cinnamon-brown, with a few, small, erect squamules at the centre, becoming glabrous towards the margin; margin entire, smooth, incurved. *Lamellae* decurrent, concolorous with the pileus surface, narrow arcuate, not exceeding 1 mm in width, very crowded, anastomosing towards the stipe; edge entire. *Stipe* 5–7 cm long, up to 15 mm diam., central, solid; equal or slightly expanded towards the elongate, rooting base; surface concolorous with the pileus, bearing a few appressed, darker squamules. *Context* pale, fleshy, inamyloid, consisting of loosely interwoven, hyaline, thin-walled hyphae, 2–5 μ diam., highly branched with abundant clamp-connexions. *Spores* not observed. *Basidia* 25–32 × 4.5–6 μ, hyaline, narrow, claviform to subcylindric, arising from a basal clamp-connexion. *Cheilocystidia* and *pleurocystidia* absent. *Hymenophoral trama* irregular, hyaline, devoid of any bilateral structure, consisting of highly branched, thin-walled hyphae, 2–5 μ diam. Subhymenial layer well developed, 25–30 μ wide. *Pileus-surface* essentially a cutis of interwoven, subhyaline hyphae, 2.5–4.5 μ diam., thin-walled, with numerous clamp-connexions. This forms a pigmented layer 150–200 μ thick.

On sandy ground. Baguirmi, Chad. Sept. 1903. Legit *A. Chevalier*, no. *11495* (PC, type).

The above data are based upon the original description by Patouillard and Hariot, and on examination of the type collection. It has not been possible to recover any spores from this material but, nevertheless, the observed characters strongly suggest that *L. baguirmiensis* is a further synonym for *Pleurotus tuber-regium* (Fr). Sing., even though no mention has been made of the attachment of a sclerotium to the rooting base.

LENTINUS CAESPITICOLA Pat. & Har.—Text-figs. 60–63

Lentinus caespiticola Pat. & Har. *in* J. Bot., Paris **14**: 240. 1900.
Omphalia bulbosa Bres. *in* Annls mycol. **18**: 26. 1920.

Pileus 8–30 mm diam., at first convex becoming expanded, deeply umbilicate, umbrinous to fuscous then paler, finely villose, glabrescent; margin entire, straight then incurved. *Lamellae* decurrent, white to isabelline, narrow, moderately crowded with lamellulae; edge entire, concolorous. *Stipe* 15–20 × 1–2 mm, central, cylindric, expanding slightly towards the apex, concolorous with the pileus, pruinose, stuffed, swollen towards the base (up to 4–5 mm thick) to form a white strigose bulb. *Context* well developed, pale, inamyloid, consisting of loosely interwoven hyphae, 1.5–6 μ diam., which are thin- or thick-walled, branched and with abundant clamp-connexions. *Spores* 4.8–7.2 × (2.5–) 3–4.8 (6.5 × 4) μ, ellipsoid, hyaline, thin-walled, containing numerous small oil-guttules; inamyloid. *Basidia* 23–28 × 6–7.5 μ, claviform, bearing 4 sterigmata (up to 3 μ long). *Cheilocystidia* abundant, forming a sterile gill-edge, 24–33 (–46) × 7–11.5 μ, ventricose fusiform, often with an acute

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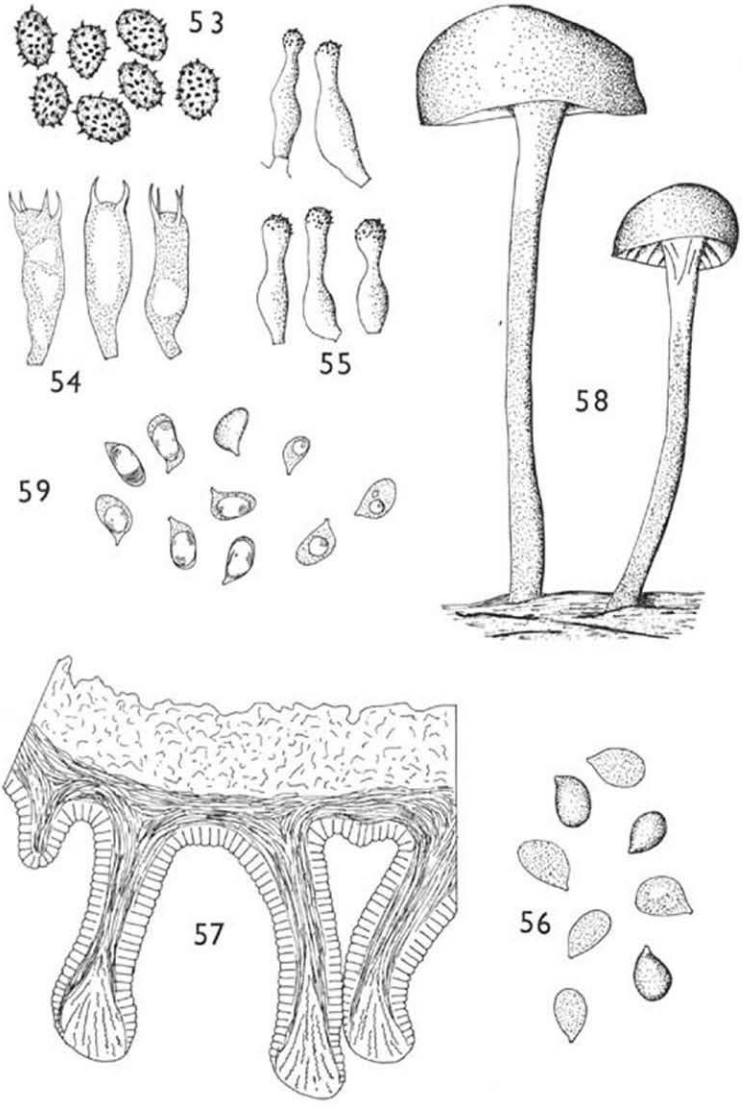
EXPLANATION OF FIGURES 53–59

Figs. 53–55. *Gymnopilus njalensis*. — 53. Spores. — 54. Basidia. — 55. Cheilocystidia.
Figs. 56, 57. *Crepidotus spathulatus*. — 56. Spores. — 57. Vertical section through pileus and gills (× 100).
Figs. 58, 59. *Hygrophorus bipindensis*. — 58. Habit of sporophores (after Zenker) × 1. — 59. Spores. (All × 1000 unless otherwise stated.)



Figs. 53—59

apex, hyaline, thin-walled. *Pleurocystidia* 35–54 × 7–11.5 μ, fusiform to lageniform, often with a subcapitate apex, thin-walled, hyaline, with highly refractive contents. Occasionally there occur pleurocystidia with short, irregular branches towards the apex, but such forms are rare. *Hymenophoral trama* hyaline, irregular, devoid of a parallel or bilateral arrangement, consisting of mostly thick-walled hyphae 1.7–5 μ diam., with a very narrow lumen, and also a few thin-walled hyphae are present. Subhymenial layer well developed, 12.5–25 μ thick. *Pileus-surface* little differentiated, of firmly interwoven, repent, thick-walled hyphae, 3–5.5 μ diam., hyaline, occasionally branched. These form a layer 15–28 μ thick, which is distinct from the more loosely interwoven context.

Lentinus caespiticola: At the base of grass tufts. Koulikaro, West Sudan. 8 Aug. 1899. Legit *A. Chevalier* (PC, type); at base of grass stems, Niger. Legit *A. Chevalier* (FH); on burnt grass stems, Zanzibar. Jan. 1906. Legit *Le Testu* (FH).

Omphalia bulbosa: on grass roots, Moçambique. Comm. *C. Torrend*, no. *416* (S, type).

Lentinus caespiticola is a fairly small species, apparently restricted to growing on graminaceous stems and roots, with a wide distribution in Africa. The irregular hymenophoral trama and the abundant thin-walled cystidia are both atypical of *Lentinus*, but it was decided to retain this species within the genus because of the tough, rigid structure of the sporophore, the presence of thick-walled hyphae, and the well developed subhymenium. The type collection from West Sudan is in a suitable condition for analysis, and was found to contain abundant spores. Subsequent examination of type material of *Omphalia bulbosa* has shown this also to be fertile with similar spores, and agreeing in all other characters with *L. caespiticola*.

LENTINUS CAESARIATUS Pat.—Text-figs. 64, 65

Lentinus caesariatus Pat. *in* Bull. Mus. Hist. nat., Paris. **30**: 413. 1924.

Pileus 16–25 mm diam., convex soon expanded, deeply umbilicate, thin, reddish-brown with a greyish tint, radially fibrillose, with a few, innate squamules towards the disc; margin thin, straight, fimbriate. *Lamellae* arcuate decurrent, narrow, white, distant; edge denticulate. *Stipe* 17–25 × 1–1.5 mm, flexuous, attenuated towards the base, cylindric, hollow, white or greyish, covered by numerous small, white squamules; arising from a white mycelial disc. *Context* concolorous, inamyloid, 50–140 μ thick, consisting of interwoven hyaline hyphae, 2–5 μ diam., which are thin- or thick-walled, with abundant clamp-connexions. *Spores* 5.7–9 × 3–3.8 (6.8 × 3.3) μ, ellipsoid to cylindric, hyaline, thin-walled, containing several small oil-guttules. *Basidia* 15.5–22 × 3.5–4.5 μ, claviform-cylindric. *Cheilocystidia* and *pleurocystidia* absent. *Hyphal pegs* abundant, 25–100 × 8–30 μ, occurring both on the sides and on the edge of the lamellae; their constituent hyphae are thin-walled, 4–6 μ diam., with the contents staining deeply in aniline blue in lactic acid. *Hymenophoral trama* completely irregular, consisting of hyaline, interwoven, thick-walled hyphae, 1.5–8 μ diam., generally with a narrow lumen. Subhymenial layer little developed. *Pileus-surface* a cutis of repent, radially arranged, agglutinated hyphae, 2.3–4.5 μ diam., hyaline, thin- or thick-walled, often covered by a brown, granular, membrane pigment. All hyphae provided with clamp-connexions.

On dead *Mangifera* branches. Maromandia, Madagascar. February. Legit *R. Decary* (PC, type).

The structure of the hymenophoral trama and the very slight development of a subhymenium are both typical of the genus *Panus* Fr. It is clear from all the observed characters that this species is based upon small sporophores of *P. tigrinus* (Bull. ex Fr.) Sing.

PANUS PAPILLATUS P. Henn.

Panus papillatus P. Henn. *in* Bot. Jb. **22**: 95. 1895; **23**: pl. 14, fig. 9. 1897. — *Lentinus papillatus* (P. Henn.) P. Henn. *in* Bot. Jb. **38**: 124. 1905.

On decaying twigs. Ndian, Cameroun. 27 April 1892. Legit *P. Dusen*, no. *25a* (S, type).

The type is sterile but otherwise exhibits all the characters of *Chaetocalathus africanus* (Pat.) Sing., and is certainly a synonym of the latter. See p. 102.

PANUS PAPILLATUS f. PARADOXUS (P. Henn.) P. Henn.

Panus paradoxus P. Henn. *in* Bot. Jb. **23**: 547, pl. 14, figs. 8a–b. 1897. — *Panus papillatus* P. Henn. forma *paradoxus* (P. Henn.) P. Henn. *apud* Bres. & Sacc. *in* Bull. Soc. r. Bot. Belg. **38**: 153. 1899.

On twigs. Near Bipindi, Cameroun. Legit *G. Zenker*, no. *133* (S, type).

The type exhibits all the characters of *Chaetocalathus africanus* (Pat.) Sing., and is certainly a synonym of the latter. See p. 102.

PLEUROTUS PALMICOLA Beeli

Pleurotus palmicola Beeli *in* Bull. Jard. bot. État Brux. **15**: 38, pl. 3, fig. 23. 1938.

At the base of leaves of an old oil-palm. Njala, Sierra Leone. July 1935. Legit *F. C. Deighton*, no. *M. 768* (Type).

The type collection consists of several sporophores in good condition, preserved in alcohol, together with a spore-print. This small, grey, subgelatinous fungus represents a further synonym of *Resupinatus applicatus* (Batsch ex Fr.) S. F. Gray.

PLEUROTUS PROLIFER Pat. & Har.—Text-fig. 66

Pleurotus prolifer Pat. & Har. *in* Bull. Soc. mycol. Fr. **9**: 207. 1893.

The type collection consists of two well preserved sporophores which on analysis have revealed the following micro-characters: *Spores* 7.5–9 × 2.8–3.7 (8.2 × 3.2) μ, cylindric, hyaline, thin-walled, with few granular contents. *Cheilocystidia* not recovered. *Metuloids* absent. *Hymenophoral trama* completely irregular, hyaline, consisting of thick-walled hyphae, 3.4–9 μ diam., tightly interwoven. Subhymenial layer well developed, up to 12.5 μ wide. *Pileus-surface* a cutis of radially arranged, repent hyphae which are thick-walled, and not at all agglutinated, forming a layer 25–60 μ thick.

On decaying trunks, Brazzaville, Congo. Legit *Thollon* (FH, type).

The structure of the hymenophoral trama and the subhymenium indicate that this species has been correctly assigned to the genus *Pleurotus* (Fr.) Quél.

RHODOPHYLLACEAE Sing.

CLAUDOPUS TERRACCIANI Bres.—Text-figs. 67, 68

Claudopus terracciani Bres. *in* Annuar. R. Ist. Bot. Roma **5**: 175, pl. 8, fig. 3. 1893.

Pileus 8–15 mm diam., suborbicular or reniform, thin, white, glabrous, radially rugulose, margin striate. *Lamellae* adnate, rounded posteriorly, at first white becoming flesh-pink, ventricose, moderately crowded. *Stipe* absent, or present as a very short, lateral protuberance, with a whitish fibrillose base. *Spores* 6.7–10.5 × 5.7–7 (9 × 6.6) μ, subglobose to broadly ellipsoid, angular, angles well marked, pink, thin-walled, with a prominent apiculus (1–2.3 μ long). *Basidia* 28.5–32 × 8–9.5 μ, claviform, bearing 4 sterigmata.

On wood, Fekerie-Ghemb Forest, Shoa Mountains, Ethiopia. 21 April 1885. Legit *V. Ragazzi*, no. *10* pr. p. (S, type).

The type collection consists of minute fragments only, and apart from details concerning the spores and basidia, it has not been possible to add to Bresadola's original description. This species would appear very close to *C. byssisedus* (Pers. ex Fr.) Gillet, which may be distinguished by the greyish-tinged pileal surface and more elongate spores.

RUSSULACEAE Roze

RUSSULA CONGOANA Pat.–Text-figs. 69–72

Russula congoana Pat. *in* Bull. Soc. mycol. Fr. **30**: 336. 1914.

Examination of the type collection, which consists of two well preserved sporophores, has revealed the following micro-characters: *Spores* 8.5–11 × 6.3–8 μ, subglobose to ellipsoid, hyaline, thin-walled, strongly amyloid, with prominent verrucae (0.6–1.2 μ high), inter-connected by a reticulate system of broad and narrow bands. The ornamentation approaches most closely the P7-type of Pearson's (1948) standards. *Basidia* 21–30 × 9.5–10.8 μ, broadly claviform, bearing 4 short sterigmata. *Cheilocystidia* 35–42 × 8.5–10.5 μ, similar to the pleurocystidia. *Pleurocystidia* abundant, 40–60 × 9.5–12.5 μ, typically macrocystidioid, elongate claviform to fusiform, frequently mucronate, thin-walled, containing highly refractive hyaline or yellowish contents. *Pileus-surface* an epicutis of erect or semi-repent hyphae, 1–2.5 μ diam., loosely arranged, intermixed with numerous elongate pilocystidia, 40–80 × 3–5 μ. This layer is supported by a broad hypodermium, 450–850 μ thick, of repent interwoven, gelatinized hyphae, 1.5–3.5 μ diam.

On the ground. Kaga M'Bra, Congo. 6 June 1912. Legit *M. Baudon*, no. *1666* (FH, type).

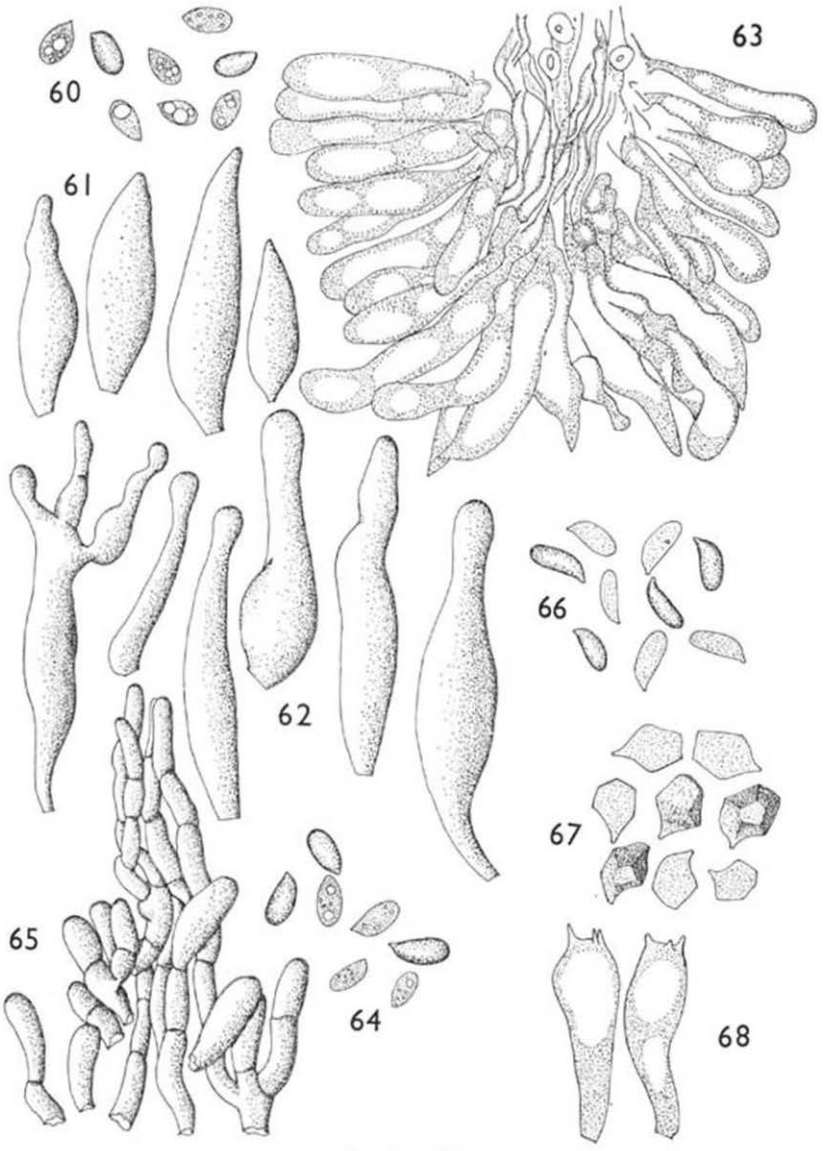
EXPLANATION OF FIGURES 60–68

Figs. 60–63. *Lentinus caespiticola*. — 60. Spores. — 61. Cheilocystidia. — 62. Pleurocystidia. — 63. Vertical section through gill-edge.

Figs. 64, 65. *Lentinus caesariatus*. — 64. Spores. — 65. Hyphal peg.

Fig. 66. *Pleurotus prolifer*. Spores.

Figs. 67, 68. *Claudopus terracciani*. — 67. Spores. — 68. Basidia. (All × 1000 unless otherwise stated.)



Figs. 60—68

The smooth, carmine-red pileus and the heavy ornamentation of the spores indicate that this species belongs in the section *Russula* of the genus *Russula* Pers. ex S. F. Gray.

STROPHARIACEAE Sing. & Smith

PHOLIOTA AGGREGATA Beeli—Text-figs. 77–81

Pholiota aggregata Beeli *in* Bull. Soc. r. Bot. Belg. **61**: 85, pl. 4, figs. 23a–b. 1928.

Pileus 3–11 mm diam., conical or conico-convex, then expanded conical, umbonate sometimes acutely so, 'Antimony Yellow' to 'Mustard Yellow', smooth, glabrous, non-striate, neither a viscid nor a gelatinized pellicle demonstrable. *Lamellae* adnexed with a tooth, pale greenish-yellow at first, darkening at maturity to 'Cinnamon', distant with only a few lamellulae; edge remaining pale. *Stipe* 10–25 × 1–2 mm, equal, cylindric, hollow, concolorous with the pileus, smooth or with an occasional evanescent, fibrillose, annular zone observed on the upper region. *Context* thin, greenish-yellow. *Spores* 5.5–7.5 × 3.2–4.3 (6.3 × 3.8) μ, ovoid to ellipsoid, yellowish-brown in NH_4 OH, darker in KOH, translucent, smooth, with a broad, slightly truncate germ-pore. *Spore print* 'Cinnamon'. *Basidia* 15.5–19 × 4.5–6 μ, claviform to cylindric, bearing 4 sterigmata. *Cheilocystidia* present, scattered amongst the basidia, 16–18 × 3.5–5.5 μ, lageniform to cylindric fusiform, hyaline, thin-walled. *Pleurocystidia* absent. *Chrysocystidia* numerous on the gill-face, occasionally present on the gill-edge, 25–34 × 8–10.5 μ, inflated claviform, frequently mucronate, thin-walled, containing a single, refractive, amorphous body, which appears yellow in NH_4 OH, stains deeply in aniline blue in lactic acid. *Hymenophoral trama* regular, up to 55 μ wide, consisting of hyaline of very pale brown, thin-walled, inflated hyphae, 4–8.5 μ diam. Subhymenial layer well developed, 7–10 μ wide, subcellular, hyaline. *Gloeo-vessels* absent in the context. *Pileus-surface* an epicutis of repent, brown, thin-walled hyphae, encrusted by a yellow resinous pigment; the individual elements are at times greatly inflated (up to 54 μ diam.). Underlying the epicutis is a hyaline, subcellular hypodermium, 12–15 μ thick. No gelatinized layers present. All hyphae provided with clamp-connexions.

On decayed trunk and stump. Mpanga Forest, Makerere University College, Uganda. Alt. 4,300 ft. 7 May 1964. Legit *E. A. Calder*, no. 97.

Although the present author has not examined the type material of *P. aggregata* which was described from Eala, Congo, there can be little doubt that the collection cited above from Uganda represents the same species. *Pholiota aggregata* may be readily identified in the field by the formation of dense caespitose groups of small, brightly coloured sporophores, covering dead and decaying wood.

The inflated vesiculose elements of the pileus-surface provide an unusual feature

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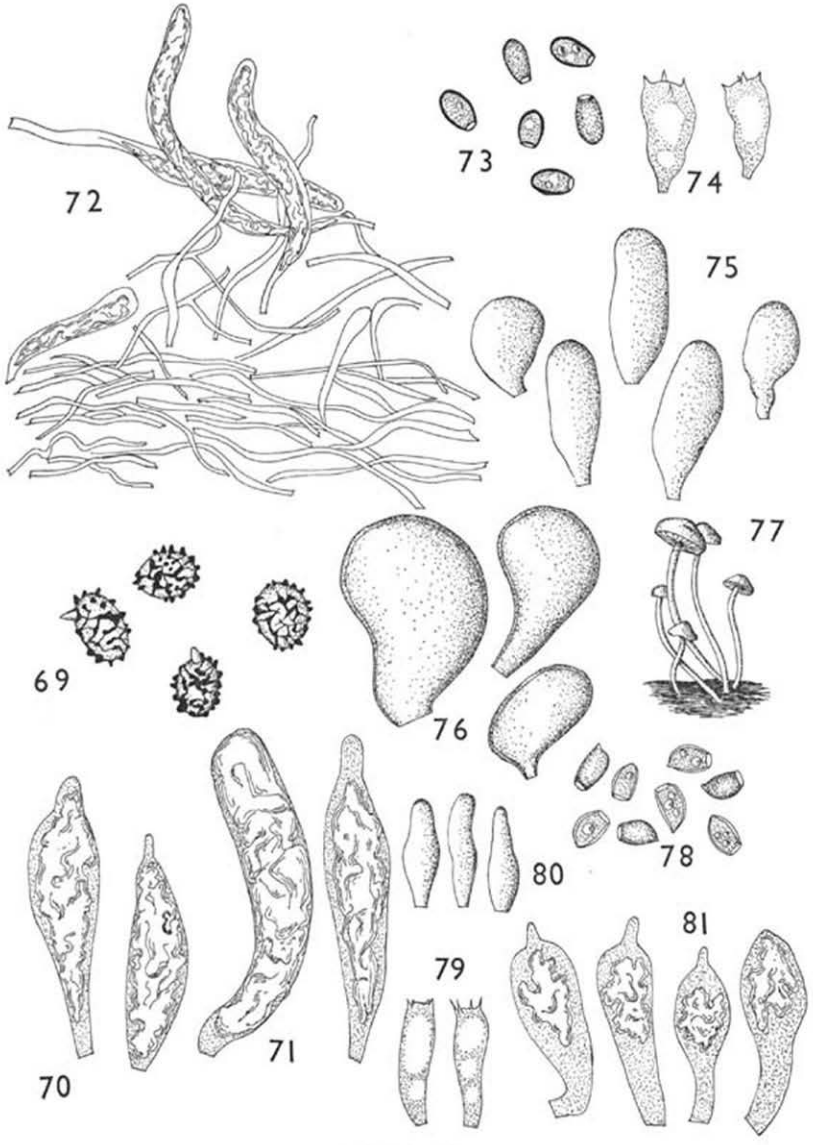
EXPLANATION OF FIGURES 69–81

Figs. 69–72. *Russula congoana*. — 69. Spores. — 70. Cheilocystidia. — 71. Pleurocystidia. — 72. Vertical section through pileus surface.

Figs. 73–76. *Psilocybe albobrunnea*. — 73. Spores. — 74. Basidia. — 75. Cheilocystidia. — 76. Epithelial sphaerocysts.

Figs. 77–81. *Pholiota aggregata*. — 77. Habit (× 1). — 78. Spores. — 79. Basidia. — 80. Cheilocystidia. — 81. Chrysocystidia. (All × 1000 unless otherwise stated.)



Figs. 69—81

for the family Strophariaceae, however the cinnamon-brown spore-print, the structure of the spores, and the presence of chrysocystidia indicate that the species has been correctly placed in the genus *Pholiota*. *Pholiota aggregata* belongs in the subgenus *Flammula* (Fr.) Sing. by virtue of the dry, glabrous pileus, and small spores.

PSILOCYBE ALBOBRUNNEA Beeli—Text-figs. 73–76

Psilocybe albobrunnea Beeli *in* Bull. Jard. bot. État Brux. **15**: 42, pl. 3. fig. 29. 1938.

The type collection consists of seven sporophores preserved in alcohol, together with a spore print. Examination of this material has revealed the following microscopic characters which may be used to supplement the original description: *Spores* 5.3–7.5 × 3.7–4.3 (6.4 × 4) μ, ellipsoid, fuscous, translucent, smooth, with a small, non-truncate germ-pore. *Basidia* 13–18 × 6.5–8.5 μ, broadly claviform, bearing 4 short sterigmata (up to 2.5 μ long). *Cheilocystidia* 11.5–24 × 7.5–11 μ, subglobose to pedicellate piriform or utriform, occasionally short cylindric, hyaline, thin-walled, with few cytoplasmic contents. *Pleurocystidia* absent. *Hymenophoral trama* subregular, reduced to a narrow zone by the well developed subcellular hymenopodium, hyaline in NH_4 OH, consisting of thin-walled, inflated hyphae. *Pileus-surface* a monostratous epithelium, of hyaline, thin-walled sphaerocysts, 9.5–23.5 μ diam., sometimes short pedicellate.

On a dead stump of *Cola nitida*. Njala, Sierra Leone. Nov. 1935. Legit *F. C. Deighton*, no. *M 881* (Type).

The cellular structure of the pileus-surface indicates that this species would be more correctly placed in the genus *Psathyrella* (Fr.) Quél. Beeli regarded *P. albobrunnea* as being scarcely distinct from *P. atrobrunnea* (Lasch) Gillet, a species variously interpreted but which is now widely recognised by modern workers as being the same as *Psilocybe turficola* J. Favre. This is a good species of *Psilocybe* with a filamentous pileus-surface. *Psilocybe albobrunnea* possesses all the characters of the subgenus *Hypholoma* (Fr.) Sing., and there can be little doubt that it represents a further synonym of *Psathyrella candolliana* (Fr.) Maire.

TRICHOLOMATACEAE Roze

ARMILLARIELLA DISTANS Pat.

Armillariella distans Pat. *in* Bull. Soc. mycol. Fr. **11**: 85, pl. 11, fig. 2. 1895.

Congo. Legit *M. J. Dybowski* (FH, type).

The type collection consists of seven small, black sporophores. These are immature and totally sterile without any development of the hymenium. The pileus-surface is little differentiated, consisting of interwoven, pigmented hyphae. It has not been possible to provide any additional information.

CHAETOCALATHUS AFRICANUS (Pat.) Sing.—Text-figs. 82–84

Chaetocalathus africanus (Pat.) Sing. *in* Lilloa **8**: 525. 1942.

Examination of the type material by the present author has revealed the following micro-characters: *Spores* 7–9.2 × 5–6.5 (7.8 × 6) μ, broadly ellipsoid, hyaline, thin-walled, neither amyloid nor dextrinoid. Only a few spores were observed, and these were often in a collapsed condition. *Basidia* 17.5–19.5 × 5–6 μ, hyaline, claviform.

Cystidia abundant, tramal in origin, 21–35 (–45) × 3–8.5 μ, thick-walled, hyaline or pale brownish, strongly dextrinoid, branching dichotomously at their apex to produce 2–6 fusoid arms (up to 14 μ long). These structures are initially to be found only on the gill-edge, but later spread to cover the entire gill-surface and displace the hymenium proper. *Hairs* on pileus-surface are unbranched, 2.5–5 μ diam., hyaline, strongly dextrinoid with a thickened wall which sometimes almost obliterates the lumen; 'ladder'-septation frequently occurs towards the tapering apex.

Loango, Congo. Legit *M. J. Dybowski* (FH, type).

A full description of this species has been published by Singer (1942).

CHAETOCALATHUS CONGOANUS (Pat.) Sing.—Text-figs. 85–87

Chaetocalathus congoanus (Pat.) Sing. *in* Lilloa **8**: 524. 1942.

Examination of the type material by the present author has revealed the following micro-characters: *Spores* fairly abundant, 6.8–8.5 × 4.5–5.7 (7.5 × 4.8) μ, ellipsoid, hyaline, thin-walled, dextrinoid. *Basidia* 24–28 × 5–6.5 μ, hyaline, claviform, bearing 4 sterigmata. *Cystidia* abundant, tramal in origin, 14–26 × 5.5–11 μ (above), 2–5 μ (at base), thick-walled, hyaline, dextrinoid, versiform with numerous short diverticulae giving a coralloid appearance. These are numerous on the gill-edge but are also found to a limited extent on the surface of the gill. *Hairs* on pileus-surface occasionally branched or nodulose towards the apex, 3–5.5 μ diam., hyaline, thick-walled, aseptate, with an obtuse apex; strongly dextrinoid.

On dead twigs. Coastal region, Congo. Jan. 1894. Legit *M. J. Dybowski*, No. *48* (FH, type).

Although *C. congoanus* and *C. africanus* appear very similar in habit, they may be easily separated microscopically. The most striking difference lies in the structure of the tramal cystidia, with the dichotomously branched arms found in *C. africanus* contrasting with the more nodulose appearance in *C. congoanus*.

Clitocybe hydrophora Pegler, *sp. nov.* —Text-figs. 88–91

Pileus 10–30 mm latus, e convexo mox expansus, profunde umbilicatus, ad discum olivaceo-brunneus, ad marginem pallide bubalinus, radialiter brunneo-striatus; margine tenue, fimbriato. Lamellae decurrentes, arcuatae, albidae vel cremeae, subdistantes; ad aciem integrae. Stipes 1.5–5 cm × 1–3 mm, cylindricus, ad apicem incrassatus, concoloratus, laevis, cavus. Caro tenuissima, inamyloidea. Sporae 6–8.5 × 3.3–5 (7.3 × 4.2) μ, ellipsoideo-amygdaliformes, hyalinae, tenuitunicatae, inamyloideae. Basidia 23–28 × 4.5–5.5 μ, cylindrico-claviformia, 4-sporigera. Cheilocystidia 43–55 × 6–10 μ, hyalina vel pallide brunnea, cylindrica. Pleurocystidia nulla. Trama hymenophoralis subregularis hyalina; hyphis tenuitunicatis, 2–4.5 μ diam. Hyphae cuticulae pilei repentes vel erectae, 3–7.5 μ diam., fibulatae. Pilocystidia 14–43 × 5–11 μ, perpauca, cheilocystidiis similia. Caulocystidia nulla. Hyphae fibulis praeditae.

Ad ramulos dejectos. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 6 April 1964. Legit *E. A. Calder*, no. *38* (Typus).

Pileus 10–30 mm diam., convex soon expanded, deeply umbilicate from the first, 'Olive-Brown' at the disc, fading to 'Cartridge Buff' towards the margin, with fine, radial, dark brown striations. Margin thin, straight, fimbriate. *Lamellae* decurrent, arcuate, white to pale cream, subdistant, with a few lamellulae; edge entire, concolorous. *Stipe* 1.5–5 cm × 1–3 mm, attenuated towards the base, cylindric, smooth,

hollow, concolorous with the pileus, rather tough, growing from a small, basal, white mycelial disc. *Context* very thin, concolorous, inamyloid. *Spores* 6–8.5 × 3.3–5 (7.3 × 4.2) μ, ellipsoid to ellipsoid-amygdaliform, hyaline, thin-walled, inamyloid, usually containing a single, large, irregular oil-guttule. *Spore print* pure white. *Basidia* 23–28 × 4.5–5.5 μ, claviform-cylindric, bearing 4 short sterigmata. *Cheilocystidia* present though not abundant, 43–55 × 6–10 μ, thin-walled, hyaline or very pale brown, smooth, cylindric with an obtuse apex. *Pleurocystidia* absent. *Hymenophoral trama* subregular, of the *Clitocybe*-subtype with the outermost hyphae diverging toward the subhymenial layer. The hyphae are hyaline, 2–4.5 μ diam., thin-walled. Oleiferous ducts occasionally present in the context of the pileus. *Pileus-surface* an epicutis of repent hyphae, though at times fragmented and then the hyphae becoming curved to form a trichodermium. The hyphae are 3–7.5 μ diam., thin-walled, branched, septate with clamp-connexions, sometimes containing a pale brownish vacuolar pigment. *Pilocystidia* present, scattered, 14–43 × 5–11 μ, smooth, resembling the cheilocystidia though at times bifurcate. *Caulocystidia* absent. All hyphae provided with clamp-connexions.

On fallen twigs. Mpanga, Makerere University College, Uganda. Alt. 4,300 ft. 6 April 1964. Legit *E. A. Calder*, no. *38* (Type).

This small, lignicolous agaric with large, characteristic cheilocystidia would appear a somewhat anomalous species of *Clitocybe* Kummer. However the structure of the hymenophoral trama, the hygrophanous pileus, and the presence of clamp-connexions, all indicate that the species is best placed in this genus.

Clitocybe torrendii Pegler, *nom. nov.*—Text-fig. 92

Omphalia pallescens Bres. *in* Annls mycol. **18**: 26. 1920.

Pileus 15–25 mm diam., membranous, infundibuliform, pale tan, glabrous, margin striate. *Lamellae* broadly decurrent, at first white becoming alutaceous, moderately crowded with interveining. *Stipe* 2.5–4 cm × 2–4 mm, cylindric, expanding towards the base, hollow or stuffed, concolorous, glabrescent. *Spores* 6–7.7 × 5–6.5 μ, subglobose, hyaline, very thin-walled, inamyloid. *Basidia* 27–32 × 5.5–8 μ, claviform. *Cheilocystidia* and *pleurocystidia* absent. *Hymenophoral trama* subregular, of the *Clitocybe*-subtype, hyaline, inamyloid, consisting of thin-walled hyphae, 2–5.5 μ diam., becoming inflated up to 20 μ diam., with clamp-connexions at the septa. Subhymenial layer well developed, subcellular. *Pileus-surface* an epicutis of repent, hyaline, thin-walled hyphae,, 2–5.5 μ diam., arranged in an essentially radial direction, but freely branched and interwoven. All hyphae provided with clamp-connexions.

On wood. Moçambique. Legit *C. Torrend* (S, type).

The above description was drawn from Bresadola's original diagnosis, but additional microscopical details have been added following an examination of the

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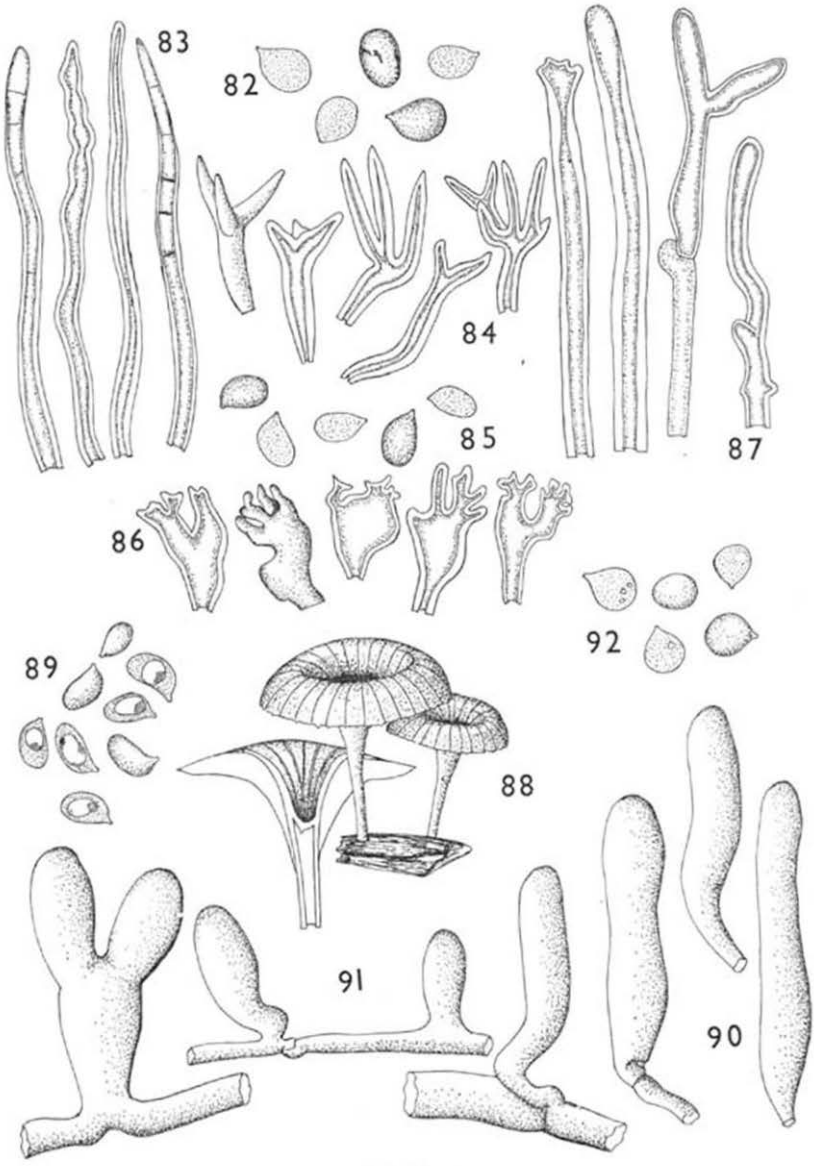
EXPLANATION OF FIGURES 82–92

Figs. 82–84. *Chaetocalathus africanus*. — 82. Spores. — 83. Surface hairs. — 84. Cystidia.
Figs. 85–87. *Chaetocalathus congoanus*. — 85. Spores. — 86. Cystidia. — 87. Surface hairs.
Figs. 88–91. *Clitocybe hydrophora*. — 88. Habit of sporophore and section (× 1). — 89. Spores. — 90. Cheilocystidia. — 91. Pilocystidia.
Fig. 92. *Clitocybe torrendii*. Spores. (All × 1000 unless otherwise stated.)



Figs. 82—92

type collection. Although the type material is in rather poor condition, consisting of two fragmented sporophores, nevertheless a few spores have been recovered which agree closely with the measurements provided by Bresadola. This fairly tough species would appear better placed in the genus *Clitocybe* Kummer by reason of the regular hymenophoral trama, the complete absence of thick-walled hyphae, the absence of any incrusting membrane pigment, and the presence of conspicuous clamp-connexions. As the binomial *Clitocybe pallescens* already exists for another fungus, described by Bigelow (1948), the new name *Clitocybe torrendii* is herewith proposed, according to Art. 55 of the International Code of Botanical Nomenclature (1961). The species belongs in the subgenus *Clitocybe*, section *Clitocybe*.

Crinipellis calderi Pegler, *sp. nov.*—Text-figs. 93–96

Pileus 8–12 mm latus, e convexo expanso-planus, carnosulus, ad discum obscure fuscus, circa discum atrobrunneo-squamulosus; ad marginem pallide cinnamomeus, non squamulosus. Lamellae adnexae, cremeo-bubalinae, subventricosae, distantes, intervenosae. Stipes 20–35 × 1–2 mm, aequalis, cylindricus, cavus, ad basim atrofuscus, ad apicem albidus, crinibus paucis subtilibus praeditus. Caro tenuissima, pallida, inamyloidea. Sporae 9–11.7 × 3.2–4.5 (10.5 × 4) μ, elongato-ellipsoideae vel cylindricae, hyalinae, tenuitunicatae, inamyloideae, raro dextrinoideae. Basidia 34–46 × 4.5–8 μ, elongato-claviformia, 4-sporigera. Cheilocystidia 25–32 × 4–8 μ, hyalina, basidiiformia. Pleurocystidia nulla. Trama hymenophoralis subregularis, hyalina vel pallide brunnea. Crines pilei stipitisque dextrinoideae, apicibus obtusis vel acutis. Hyphae fibulis praeditae.

Ad ramulos mortuos. Mpanga 69, Makerere University College, Uganda. Alt. 4, 300 ft. 15 April 1964. Legit *E. A. Calder*, no. *52* (Typus).

Pileus 8–20 mm diam., convex then expanded-plane, thin, 'Burnt Umber' to 'Fuscous-Black' at the disc, fading to 'Light Vinaceous-Cinnamon' at the margin and covered by numerous furfuraceous squamules which become sparse towards the edge. The surface radially sulcate, the margin straight, undulate and entire. *Lamellae* adnexed, 'Cream-Buff', subventricose, distant with a few lamellulae, but conspicuous interveining. *Stipe* 20–35 × 1–2 mm, equal, cylindric, hollow, 'Fuscous-Black', at the base fading to almost white at the apex, longitudinally striate, with a delicate covering of fine hairs. *Context* very thin, pale, inamyloid. *Spores* 9–11.7 × 3.2–4.5 (10.5 × 4) μ, elongate ellipsoid to cylindric, hyaline, wall thin never thickening or showing any secondary septation, containing one to several highly refractive oil guttules; inamyloid though at times faintly dextrinoid. *Spore print* pure white. *Basidia* 34–46 × 4.5–8 μ, elongate claviform, bearing 4 sterigmata. *Cheilocystidia* intermixed with the basidia, 25–32 × 4–8 μ, hyaline, thin-walled, little differentiated from the basidia, with a slightly nodulose or subcapitate apex. *Pleurocystidia* absent. *Hymenophoral trama* subregular, hyaline or pale brown, consisting of filamentous, thin-walled hyphae, 1.5–4.5 μ diam., sometimes inflated up to 8 μ. Subhymenial layer little differentiated. *Pileus-surface* composed of fasciculate groups of unbranched hairs, produced by a well developed hypotrichium. *Hairs* 35–400 × 4–13 μ, subhyaline to dark brown, strongly dextrinoid, straight of flexuous, tapering towards the apex which may be acute or rounded; wall thickened up to 2 μ, either nonseptate or with irregular septation though never constricted, sometimes 'ladder' septation occurs towards the apex. *Hypotrichial layer* composed of branching chains of subcylindric, vesiculose elements, 40–70 × 7–20 μ, thin-walled, often bearing an incrusting membrane pigment, and containing abundant brown, cytoplasmic

contents. Hairs on stipe similar to those of the pileus though scattered, and not exceeding 250 μ in length. All hyphae with prominent clamp-connexions.

On dead twigs. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 15 April 1964. Legit *E. A. Calder*, no. *52* (Type).

This deeply pigmented species of *Crinipellis* belongs to the section *Crinipellis* subsection *Stipitarinae* Sing. because of the presence of the elongate surface hairs, and the relatively undifferentiated cheilocystidia. The pileus and stipe are not strongly strigose as in many species within this group, and for this reason *C. calderi* probably approaches closest to *C. subtomentosa* (Peck) Sing., the cheilocystidia and spore-size would further support this view. *Crinipellis subtomentosa*, which has been recorded from North and West Africa, differs in the much paler pigmentation of the sporophore, broader spores (9–11.8 × 4.5–6 μ), and the structure of the pileus-surface.

Crinipellis glaucospora (Beeli) Pegler, *comb. nov.*—Text-figs. 97–99

Naucoria glaucospora Beeli *in* Bull. Jard. bot. État Brux. **15**: 39, pl. 3, fig. 25. 1938 (basionym).

Pileus 10–15 mm diam., at first convex becoming expanded, plane, pink with a reddish-brown disc, smooth except for the radially grooved margin. The surface is covered by fasciculate groups of reddish-brown hairs but is glabrous at the disc; margin entire, undulate. *Lamellae* adnexed to free, white, moderately crowded with numerous lamellulae; edge concolorous, serrulate. *Stipe* 10–25 × 1–1.5 mm, equal, cylindric, hollow, deep reddish-brown, with a fine covering of reddish-brown hairs. *Context* thin, pale brown, inamyloid. *Spores* 6–8.5 × 3.2–4 (7.3 × 3.5) μ, elongate ellipsoid, flattened on the adaxial side, often slightly curved towards the prominent apiculus, hyaline or with a pale greenish tint, thin-walled, smooth; inamyloid, non-dextrinoid. A number of spores deposited in the spore-print and on the pileus-surface have developed a thickened endogenous wall, which appears pale yellowish, and encloses all the cytoplasmic contents. The original, thin outer wall has, in many cases, collapsed to leave a thick-walled spore, appearing rectangular in profile. *Spore print* cream-coloured. *Basidia* 17–22 × 5.5–7.5 μ, claviform, bearing 4 short sterigmata. *Cheilocystidia* numerous, 17–26 × 4–6 μ, hyaline, thin-walled, versiform, ventricose below, fusiform, pointed or with a nodulose apex, occasionally with short lateral branches. *Pleurocystidia* 21–24 × 4–5.5 μ, sinuous fusiform, mostly pointed at the apex, some nodulose or with 1–3 very short, irregular branches, hyaline or sometimes with pale brownish contents, thin-walled, projecting beyond the hymenium. *Basidioles* abundant, fusiform, hyaline, comprising most of the hymenium. *Hymenophoral trama* subregular hyaline, consisting of thin-walled hyphae, 3–4.5 μ diam., which become considerably inflated (up to 20 μ diam.). Subhymenial layer little differentiated. *Pileus-surface* composed of a hypotrichium producing unbranched hairs. *Hairs* 30–550 × 4–10 μ, cylindric, sometimes ventricose at the base, obtusely rounded at the apex, hyaline or nearly so, thick-walled, with frequent secondary septa; inamyloid though strongly dextrinoid. The surface of these hairs is covered by an abundant granular incrustation. *Hypotrichial layer* up to 100 μ thick, composed of repent, inflated, thin-walled hyphae, in which the individual, smooth elements measure 5–23 μ diam. All hyphae provided with clamp-connexions.

In hollow trunk of living *Cynometra leonensis*. Njala, Sierra Leone. 2 July 1935. Legit *F. C. Deighton*, no. *M 747* (Type).

This species which gives a cream-coloured spore print is not in any way related to the genus *Naucoria* (Fr.) Kummer. The spores, when examined microscopically,

appear mostly hyaline, and only in a very few is there any greenish coloration. The dextrinoid hairs on the pileus and stipe are strongly indicative of *Crinipellis* Pat., and further investigation has shown all the other structures to be typical of this genus. It is best placed within the section *Crinipellis* subsection *Iopodinae* Sing. by virtue of the pink pigmentation in the pileus. *Crinipellis rubiginosa* Pat., an incompletely described species from Madagascar, approaches *C. glaucospora* in many respects but differs markedly in the dimensions of the sporophore. *Crinipellis perniciosa* (Stahel) Sing., from tropical America, differs in having a deep crimson pileus and a little white or lemon-yellow stipe.

An unusual feature is the endogenous production of a thickened wall in the spore, once it is released. A smilar structure was described by Singer (1942) for *C. mirabilis* Sing. It would seem likely to represent a xerophytic adaptation.

Hohenbuehelia chevalieri (Pat.) Pegler, *comb. nov.*—Text-figs. 100–103

Pleurotus chevalieri Pat. *in* J. Bot., Paris **8**: 212. 1894. (basionym).

Pileus 6–15 mm diam., turbinate to cupuliform becoming reflexed, sessile, dorsally attached blackish-brown with the surface minutely hispid but glabrescent towards the margin; margin entire, even. *Lamellae* radiating from a central dorsal point, white to ash-grey, drying yellowish, narrow, subdistant with lamellulae; edge concolorous, serrulate. *Stipe* present as a small, white protuberance or absent. A pseudostipe is occasionally formed, but more often the pileus is attached directly to the dorsal surface. *Context* thick, hyaline, inamyloid, consisting of two distinct layers. The upper layer, 135–190 μ thick, is gelatinized, with loosely interwoven hyphae embedded in a hyaline matrix; in most cases the walls of the hyphae retain their identity. The lower layer, 300–630 μ thick, is non-gelatinized, composed of more compactly arranged hyphae, which readily stain in aniline blue in lactic acid. *Spores* 9–13.3 × 3.4–4.7 (11 × 4) μ, cylindric, curved towards the apiculus, sometimes slightly constricted, hyaline, thin-walled, with granular contents; inamyloid. *Basidia* 17–31 × 4.5–8.5 μ, elongate claviform, bearing 4 sterigmata (up to 4 μ long). *Cheilocystidia* leptocystidioid, 27–38 × 4.5–7 μ, hyaline, thin-walled, with few cytoplasmic contents, cylindric fusiform with several constrictions, generally branching apically into 1–4 branchlets, each branchlet bearing a fimbriate tip. *Pleurocystidia* absent. *Metuloids* abundant, 20–43 × 7–8 μ, occurring on both the gill-face and the gill-edge, fusiform or lageniform with an obtuse apex, hyaline to stramineous, with a thickened wall but usually retaining a broad lumen; upper region heavily encrusted. Many of these organs are deep-seated and distinctly tramal in origin. *Hymenophoral trama* hyaline, irregular, consisting of loosely interwoven hyphae, 2–3.5 μ diam., hyaline, thin-walled, with numerous clamp-connexions; slightly gelatinized. Subhymenial layer little developed. *Pileus-surface* essentially a trichodermium, consisting of vertically arranged hyphae which are aggregated,

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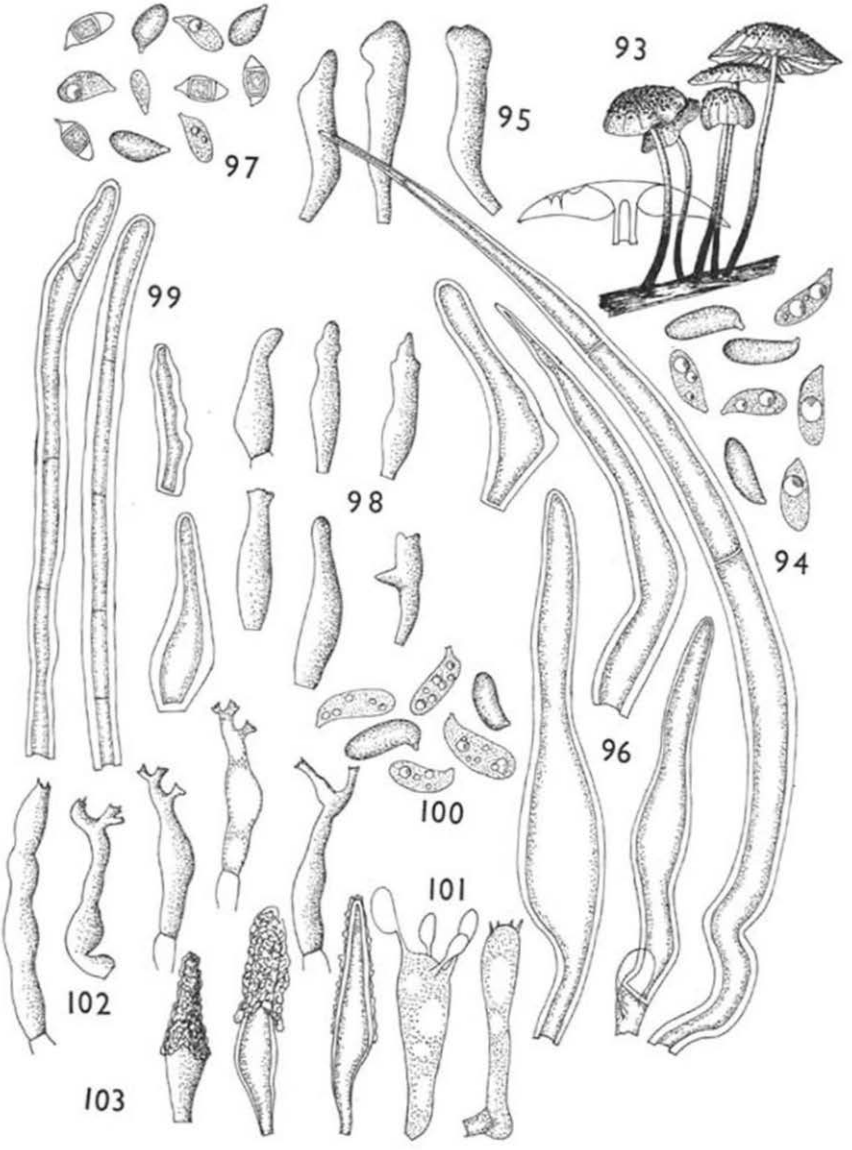
EXPLANATION OF FIGURES 93–103

Figs. 93–96. *Crinipellis calderi*. — 93. Habit of sporophore (× 2). — 94. Spores. — 95. Cheilocystidia. — 96. Pileal hairs.

Figs. 97–99. *Crinipellis glaucospora*. — 97. Spores. — 98. Cheilocystidia. — 99. Pileal hairs.

Figs. 100–103. *Hohenbuehelia chevalieri*. — 100. Spores. — 101. Basidia. — 102. Cheilocystidia. — 103. Metuloids. (All × 1000 unless otherwise stated.)



Figs. 93—103

though not agglutinated, to form short stiff hairs, up to 400 μ long. The hyphae, 2.5–4.5 μ diam., are thick-walled, hyaline or light brown, occasionally branched, bearing numerous resinous incrustations; arising from a basal clamp-connexion. These hyphae are produced by an underlying, pigmented hypodermium, 25–36 μ thick, of repent, non-gelatinized hyphae.

On fallen, decaying twigs. Tebéssa, Algeria. Jan. 1893. Herb. N. Patouillard (FH, type).

Patouillard originally described this species as "voisine de *Pleurotus atrocaeruleus* Fr.", and subsequently Pilát (1935) regarded it as representing a depauperate form of the latter species. Following an examination of the type collection the present author has formed the opinion that *Pleurotus chevalieri* represents a fungus specifically distinct from *Hohenbuehelia atrocaerulea* (Fr. ex Fr.) Sing. It may be distinguished from the other known species within the stirps *Atrocaeruleus* by (i) the larger spores; (ii) the smaller metuloids with only a slightly thickened wall; (iii) the highly characteristic leptocystidia.

LEPISTA SORDIDA (Fr.) Sing.

Lepista sordida (Fr.) Sing. *in* Lilloa **22**: 193. 1951.

The following African collection has been received at Kew: Makerere Hill, Makerere University College, Uganda. Alt. 4,100 ft. 24 April 1964. Legit *E. A. Calder*, no. *70*. This species has not hitherto been reported from tropical Africa.

MARASMIELLUS NIGRIPES (Schwein.) Sing.
var. **subcinereus** (Berk. & Br.) Pegler, *comb. nov.*—Text-figs. 104–108

Marasmius subcinereus Berk. & Br. *in* J. Linn. Soc. (Bot.) **14**: 37. 1873 (basionym).

Pileus 4–25 mm diam., very thin, convex campanulate, ranging from slightly depressed at the centre to distinctly umbilicate or even infundibuliform; bluish-white to greenish-grey, often dark brown at the centre. The pileus which is radially striate to the umbilicus or plicate, stains blue or greenish-blue when bruised. *Lamellae* white to pale cream, narrow, moderately crowded, adnate to decurrent, becoming interveined at maturity; staining blue on bruising. *Stipe* 10–40 × 2–5 mm, tough and wiry, black when fresh, brown on drying, covered by an extensive white pruina which may disappear in old sporophores; hollow, cylindrical or slightly tapering downwards, with the base sometimes dilated into a small, white mycelial disc (up to 1.5 mm diam.). *Context* very thin, rarely more than 250–300 μ in thickness, flexible, white. *Spores* tetrahedral with 4 radiating, triangular processes (up to 7 μ long, and 3–4 μ diam. at their base), distance from point to point 7–12 μ, hyaline, thin-walled, with fine granular contents, inamyloid. *Spore print* white. *Basidia* 22–25 × 4.5–5 μ, clavate to cylindric; 4-spored. *Cheilocystidia* present, forming a sterile gill-edge, 25–37 × 5–18 μ, elongate claviform, covered by many short diverticula, for up to two-thirds their length; the upper region often producing one to several finger-like appendages which become inflated to produce a subcapitate apex. *Pleurocystidia* absent, except for a few cheilocystidioid elements near the gill-edge. *Hymenophoral trama* irregular to subregular, consisting of hyaline filamentous hyphae, 1.5–3 μ diam., loosely interwoven, with clamp-connexions, not gelatinized. *Pileus-surface* consisting of a well differentiated epicutis with a *Rameales*-structure, of nodose-branched or coralloid pilocystidia, 10.5–28 × 5–11.5 μ, hyaline, devoid of pigment

incrustations. *Caulocystidia* numerous, 18–42 × 4–13 μ, hyaline, with numerous branched outgrowths, bearing terminally inflated vesicles.

In forest litter, mainly twigs. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 13 April 1964. Legit *E. A. Calder*, no. *42*.

The distinctive appearance of the spores makes this pantropical fungus a readily recognisable species, for their stellate shape would place it in an isolated position within the section *Rameales* Lange of the genus *Marasmiellus* Murr. *Marasmiellus nigripes* was originally described by Schweinitz (1822) from North Carolina, U.S.A., later Pennington (1915) indicated a fairly wide North American distribution, and Dennis (1951) showed that the species occurred extensively throughout tropical America. Petch (1948) redescribed *Marasmius subcinereus* Berk. & Br. in his treatment of the *Marasmius* species of Ceylon, and emphasized that "the pileus and gills turn blue to greenish black when bruised." According to the collector's notes, the above Uganda material was found to "stain blue in places on injury." This character, together with a microscopic comparison of the Petch material, would strongly suggest the same fungus to be involved. Further, a water-colour sketch of the African material closely resembles an unpublished painting, deposited in the Kew herbarium, to which Berkeley & Broome referred for their original diagnosis.

A careful comparison of type material of *M. subcinereus* and authenticated material of *M. nigripes*, revealed no differences in their microscopic structure. However, there has never been any indication that specimens collected in America have shown a colour change on injury, and because of the importance of colour, particularly within the marasmioid genera, it is thought that the two forms should be kept separate. The new combination at the varietal level is herewith proposed.

Marasmiellus roseotinctus Pegler, *sp. nov.*—Text-figs. 109–113

Pileus 6–13 mm latus, e convexo vel conico-convexo expansus, obtuse umbonatus, ad discum roseus, ad marginem albidus, hygrophanus, laevis, margine striato. Lamellae adnatae vel subdecurrentes, ex albido pallide roseus, subdistantes; ad aciem sub lente pruinosae. Stipes insititius, 12–35 × 0.5–1 mm, aequalis, cylindricus, cavus, concoloratus. Caro tenuissima, pallide rosea, sicco luteo-brunnea. Sporae 6.5–8.7 × 3.5–4.5 (8 × 4) μ, elongato-ellipsoideae vel subcylindricae, hyalinae, inamyloideae. Basidia 12–14.5 × 4–5.5 μ, claviformia, 4-sporigera. Cheilocystidia 17–24 × 3.5–9 μ, hyalina, versiformia, nonnullis diverticulatis praedita. Pleurocystidia nulla. Trama hymenophoralis regularis, hyalina. Cellulae cuticulae pilei manifeste diverticulatae, cheilocystidiis similes. Hyphae fibulis praeditae.

Ad lignum putridum. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 7 May 1964. Legit *E. A. Calder*, no. *98* (Typus).

Pileus 6–13 mm wide, convex to conico-convex, then expanded, obtusely umbonate, thin, 'Deep Rose Pink' to 'Alizarine Pink' at the disc, fading to white at the margin, hygrophanous, smooth, more or less radially striate at the margin. *Lamellae* adnate to subdecurrent, horizontal, white to pale pink, subdistant with a few lamellulae; edge entire, *sub lente* white pruinose. *Stipe* insititious, 12–35 × 0.5–1 mm, equal, cylindric, hollow, concolorous with the pileus. *Context* very thin, pale pink, drying yellowish-brown. *Spores* 6.5–9.7 × 3.5–4.5 (8 × 4) μ, elongate to subcylindric, with a prominent oblique apiculus, hyaline, thin-walled, always containing a large, some-

times irregular, refractive oil guttule; inamyloid. *Spore print* pure white. *Basidia* 12–14.5 × 4–5.5 μ, oblong-claviform, bearing 4 sterigmata (up to 3.5 μ long). *Cheilocystidia* present, 17–24 × 3.5–9 μ, hyaline, thin-walled, forming a sterile gill-edge variable in shape ranging from cylindric with a nodulose apex to highly branched with numerous short, finger-like diverticula. *Pleurocystidia* absent. *Hymenophoral trama* subregular, hyaline, non-gelatinous, consisting of thin-walled hyphae, 2.5–5 μ diam. inflating up to 9 μ diam. Subhymenial layer moderately developed, hyaline, subcellular, 5.5–8 μ wide. *Pileus-surface* an epicutis of typical *Rameales* structure; individual elements small, 12.5–18 × 4–8 μ, hyaline, similar to the cheilocystidia. *Caulocystidia* present though scattered, 22–34 × 3.5–12 μ, hyaline, thin-walled, branched with several diverticulae. All hyphae provided with clamp-connexions.

On decaying wood. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 7 May 1964. Legit *E. A. Calder*, no. *98* (Type).

This small, delicate species is characterised by its caespitose habit, and pinkish coloration. The central stipe and the epicuticular structure of the pileus places *M. roseotinctus* within the section *Rameales* Lange of the genus *Marasmiellus*.

MARASMIUS ARBORESCENS (P. Henn.) Beeli

Collybia arborescens P. Henn. *in* Bot. Jb. **22**: 106. 1895. — *Marasmius arborescens* (P. Henn.) Beeli *in* Bull. Soc. r. Bot. Belg. **60**: 156, pl. 3, fig. 10. 1928.

This species is widespread throughout tropical Africa. The following collections have been received at Kew: Botanic Garden, Ibadan, Nigeria. May 1963. Legit *S. O. Alasoadura*, no. *8*; Makerere University College, Uganda. 16 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *48*; Mpanga baseline, Makerere University College, Uganda. Alt. 4,300 ft. 20 April 1964. Legit *E. A. Calder*, no. *64*; Uganda. Legit *T. D. Maitland*.

For full descriptions of this species see Heim (1948) and Singer (1964a, 1965).

MARASMIUS BEKOLACONGOLI Beeli

Marasmius bekolacongoli Beeli *in* Bull. Soc. r. Bot. Belg. **60**: 157, pl. 3, fig. 12. 1928.

The following East African collections have been received at Kew: Mpanga Forest, Uganda. 30 March 1957. Legit *A. French*, no. *18*; Mpanga 69, Makerere University College, Uganda. 5 May 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *91*; Nyamberi Hills, Kenya. Alt. 6,500–6,800 ft. 12 Oct. 1960. Legit *B. Verdcourt*, no. *2981 A*.

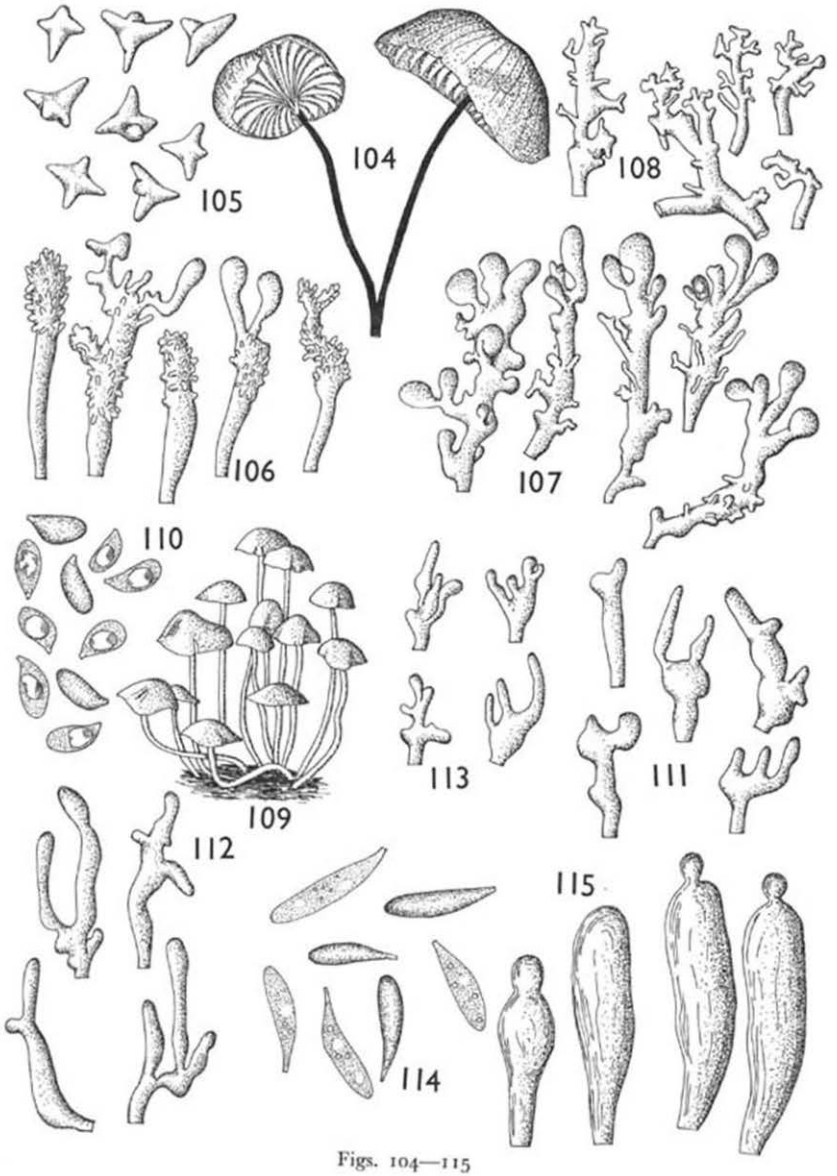
For a full description of this species see Singer (1964a, 1965).

EXPLANATION OF FIGURES 104–115

Figs. 104–108. *Marasmiellus nigripes* var. *subcinereus*. — 104. Habit of sporophore (× 1). — 105. Spores. — 106. Cheilocystidia. — 107. Caulocystidia. — 108. Epicuticular elements.

Figs. 109–113. *Marasmiellus roseotinctus*. — 109. Habit of sporophore (× 1). — 110. Spores. — 111. Cheilocystidia. — 112. Caulocystidia. — 113. Epicuticular elements.

Figs. 114, 115. *Marasmius haematocephalus*. — 114. Spores. — 115. Gloeocystidia. (All × 1000 unless otherwise stated.)



Figs. 104—115

Marasmius bubalinus Pegler, *sp. nov.*—Text-figs. 116–122

Pileus 5–20 mm latus, e umbonato-campanulato leviter expansus, interdum umbilicatus, pallide ochraceo-bubalinus, ad discum cinnamomeus, radiato-rugosus. Lamellae non-collariatae, liberae, sinuato-ventricosae, pallide brunneae, subdistantes, ad aciem concolores, serratae. Stipes insititius, 3–5 cm × 0.5–3 mm, aequalis, cylindricus, pileo concolor, e farcto cavus, laevis, striatus, glaber, non laccatus. Contextus pallide brunneus, inamyloideus. Sporae 6.5–8.2 × 3–4 (7.5 × 3.6) μ, oblongo-amygdaliformes, hyalinae, tenuitunicatae, inamyloideae. Basidia 17–25 × 5–6 μ, claviformia, 4-sporigera. Cheilocystidia 16–28.5 × 4.5–11.5 μ, hyalina, versiformia, nonnullis ramosis cristatis. Pleurocystidia nulla. Basidiolae copiosae, 18–28 × 4–5.5 μ, fusiformes. Trama hymenophoralis subregularis. Cellulae cuticulae pilei *Sicci* typo similes. Hyphae fibulis praeditae.

Inter graminos mortuos et ramulos dejectos. Makerere University College, Uganda. Alt. 4,100 ft. 23 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *71* (holotypus); East slopes, Mt Elgon. Summer 1963. Legit *Mrs. P. H. Irwin* (paratypus).

Pileus 5–20 mm diam., umbonate-campanulate, occasionally umbilicate, becoming slightly expanded, 'Pale Ochraceous Buff' darkening to 'Cinnamon' at the umbo, radiately ridged to the disc even in dried material. *Lamellae* non-collariate, free, sinuate ventricose, pale brown, moderately spaced with numerous lamellulae, often strong interveining; edge concolorous, very irregular. *Stipe* insititious, 3–5 cm × 0.5–3mm, equal, cylindric, stuffed then hollow at maturity, with fine longitudinal ridges, concolorous with the pileus or slightly paler at the apex, smooth, glabrous, but devoid of any silky sheen, and without any deposition of a resinous cuticle. *Context* relatively thick at the apex, but very thin towards the margin, pale brown, inamyloid. *Spores* 6.5–8.2 × 3–4 (7.5 × 3.6) μ, oblong amygdaliform, slightly depressed on the adaxial side towards the apiculus, hyaline, thin-walled, containing one or more small oil-guttules; inamyloid. *Spore print* pure white. *Basidia* 17–25 × 5–6 μ, claviform, bearing 4 sterigmata. *Cheilocystidia* numerous, 16–28.5 × 4.5–11 μ, thin-walled, versiform with several apical and lateral branches, which are often cristate at their apices; intermixed with the basidia. *Pleurocystidia* absent. *Basidioles* 18–28 × 4–5.5 μ, hyaline, fusiform, very numerous particularly on the sides of the lamellae. *Hymenophoral trama* subregular, hyaline, with loosely interwoven, axillary-arranged hyphae; the hyphae are thin-walled, inamyloid, and irregularly inflated (up to 8.5 μ diam.). Subhymenial layer broad, 8–17 μ diam., subcellular. *Pileus*-surface a hymeniform epicutis, consisting of versiform elements of the *Siccus*-type, 13–24 × 5–13.5 μ, hyaline, thin-walled, with branches bearing digitiform apices. *Caulocystidia* absent. All hyphae provided with clamp-connexions.

Amongst grass debris and fallen twigs. Makerere University College, Uganda. Alt. 4,100 ft. 23 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *71* (holotype); East slopes, Mt. Elgon, Kenya. Late Summer 1964. Legit *Mrs. P. H. Irwin* (paratype).

Marasmius bubalinus may be placed in the section *Leveilliani* Sing. of the genus *Marasmius* Fr. by virtue of the presence of an insititious stipe, epicuticular elements which are of the *Siccus*-type, the non-collariate lamellae, and the absence of pleurocystidia. The micro-characters both of the pileus-surface and of the hymenophore agree very closely with those of *M. leveillianus* (Berk.) Pat., particularly in the epicuticular elements, the cheilocystidia, and the fusoid basidioles. The spores are also very similar in shape and structure, although those of *M. bubalinus*, which were taken from a spore-print, are slightly shorter than the spores of *M. leveillianus* (8.3 × 3.7 μ), a difference reflected in the size of the basidia. Nevertheless there do exist a

number of other differences which suggest that more than one species is involved.

Marasmius leveillianus has a dark reddish-brown, convex pileus which soon becomes expanded, whilst the pileus of *M. bubalinus* is distinctly campanulate, never fully expanded, and is very light brown in colour. The difference in the pileus coloration is very marked in dried material as well as in living collections. It is in the structure of the stipe, however, that the most fundamental differences are found to occur. The stipe of *M. leveillianus* is a very dark brown, with a smooth, shiny and horny surface, and hollow from the start. On soaking up the dried material, no appreciable swelling occurs. In *M. bubalinus*, the stipe is very pale, there is no shiny, horny crust, and on immersing the dried material in water an immediate and substantial swelling occurs. Transverse sections made of these stipes also reveal a number of differences at the cellular level. The stipe of *M. leveillianus* (Fig. 124) is composed of three distinct regions. The surface layer of hyphae are fairly thin-walled but heavily coated by a dark, resinous incrustation, forming an impermeable cuticle. Within this layer is a very broad zone, comprising 60–80 per cent of the stipe material of very thick-walled, closely compacted, parallel-arranged hyphae, their walls staining deeply in aniline blue in lactophenol. The innermost layer is a narrow zone, 10–20 μ wide, of thin-walled, filamentous hyphae which form the lining to the central cavity of the stipe. All the hyphae have clamp-connexions at their septa. A cross-section through the stipe of *M. bubalinus* (Fig. 122) reveals no external cuticle, and no distinctive 'epidermal' zone. The entire stipe is formed of parallel-arranged hyphae, which have only slightly thickened walls and always retain a broad lumen. These hyphae are closely compacted towards the periphery, but large inter-hyphal spaces appear towards the centre of the stipe. If a central cavity is present it is only produced by the gradual break-down and pulling apart of the innermost hyphae, during the latter stages of the sporophore. The lack of a horny cuticle and thick-walled hyphae would explain the immediate revival of the dried material upon soaking.

MARASMIUS FAVOLOIDES P. Henn.—Text-figs. 125–129

Marasmius favoloides P. Henn. *in* Bot. Jb. **22**: 99. 1895.

Pileus 15–30 mm diam., at first convex umbonate, soon expanded to plane or slightly umbilicate, very thin, 'Lilac Gray' to 'Cinereous', sometimes 'Light Cinnamon-Drab' at the disc; smooth, strongly radiately ridged; margin entire, undulate. *Lamellae* adnate to decurrent, cream or with a very pale brownish tint, straight to arcuate, distant but strongly connected by prominent interveining to give a reticulate appearance; edge serrulate. *Stipe* 2–7 cm × 1–3.5 mm, equal or attenuated towards the base, cylindric, hollow, 'Cinnamon-Brown' at the base gradually fading to white at the apex, smooth, white pruinose at the apex, glabrous below; abundant white, basal mycelium. *Context* very thin, concolorous, inamyloid, dextrinoid. *Spores* 5–6.5 × 3–3.7 (5.7 × 3.4) μ, ellipsoid, hyaline, smooth, thin-walled, with rather granular contents; inamyloid. *Spore print* pure white. *Basidia* 20–25 × 3.5–5 μ, elongate claviform, bearing 4 short sterigmata. *Cheilocystidia* and *pleurocystidia* absent. *Hymenophoral trama* subregular, hyaline, consisting of somewhat interwoven, thin-walled hyphae, 2.5–5 μ diam., inamyloid though strongly dextrinoid.

Subhymenial layer well developed, 7.5–10 μ wide, hyaline. *Pileus-surface* strictly hymeniform, consisting of hyaline, vesiculose elements, 10–24 × 8–14 μ, subglobose to pedicellate piriform, occasionally obpiriform or short lageniform; thin-walled, smooth; no pilocystidia. Underlying this layer is a hypodermium of horizontal, parallel-arranged, hyaline hyphae, 2–4 μ diam. *Caulocystidia* abundant towards the apex of the stipe, 16–35 × 8.5–13 μ, hyaline, vesiculose, similar to the elements of the pileus-surface. All hyphae provided with clamp-connexions.

Amongst damp forest litter. Makerere University College, Uganda. 16 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *49*.

Although it has not been possible to trace the type collection of *M. favoloides*, there can be little doubt that the fungus described above represents Hennings' species which was collected in the Cameroun. The Uganda collection agrees with the original diagnosis in every detail, including the spore size, and the reticulate configuration of the hymenophore makes the species easily recognisable. Hennings related the species to *M. umbonatus* Peck, a coniferous species from North America, with a tomentose stipe. However Singer (1943) investigated the structure of Peck's fungus, and reported a repent, filamentous cuticle. It was accordingly transferred to the genus *Collybia*.

The hymeniform pileus-surface, together with the inamyloid context and gill-trama, indicates that this species belongs within the section *Alliacei* Kühn. of the genus *Marasmius*.

MARASMIUS HAEMATOCEPHALUS (Mont.) Fr.—Text-figs. 114, 115

Marasmius haematocephalus (Mont.) Fr., Epicrisis 376. 1838.

This small, common species of *Marasmius* has a widespread pantropical distribution, the following African collections have been received at Kew: On logs. Kipayo, Uganda. Alt. 4,000 ft. April 1915. Legit *R. Dümmer*; On leaf litter, Kigoma District, Tanganyika. 26 Jan. 1964. Legit *K. A. Pirozynski*, no. *M 348*; On dead leaves and twigs. Mpanga 69, Makerere University, Uganda. Alt. 4,300 ft. 9 April 1964. Legit *A. Ojong*. Comm. *E. A. Calder*, no. *29*.

The small sporophores may be recognised by the blood-red to deep purple pigmentation of the pileus; the elongate-fusiform spores, 16–20 × 3–4.5 μ, the cheilocystidia and pilocystidia of the *Siccus*-type; and the projecting, refractive gloeocystidia, 26–47 × 6–17 μ, on the sides of the lamellae.

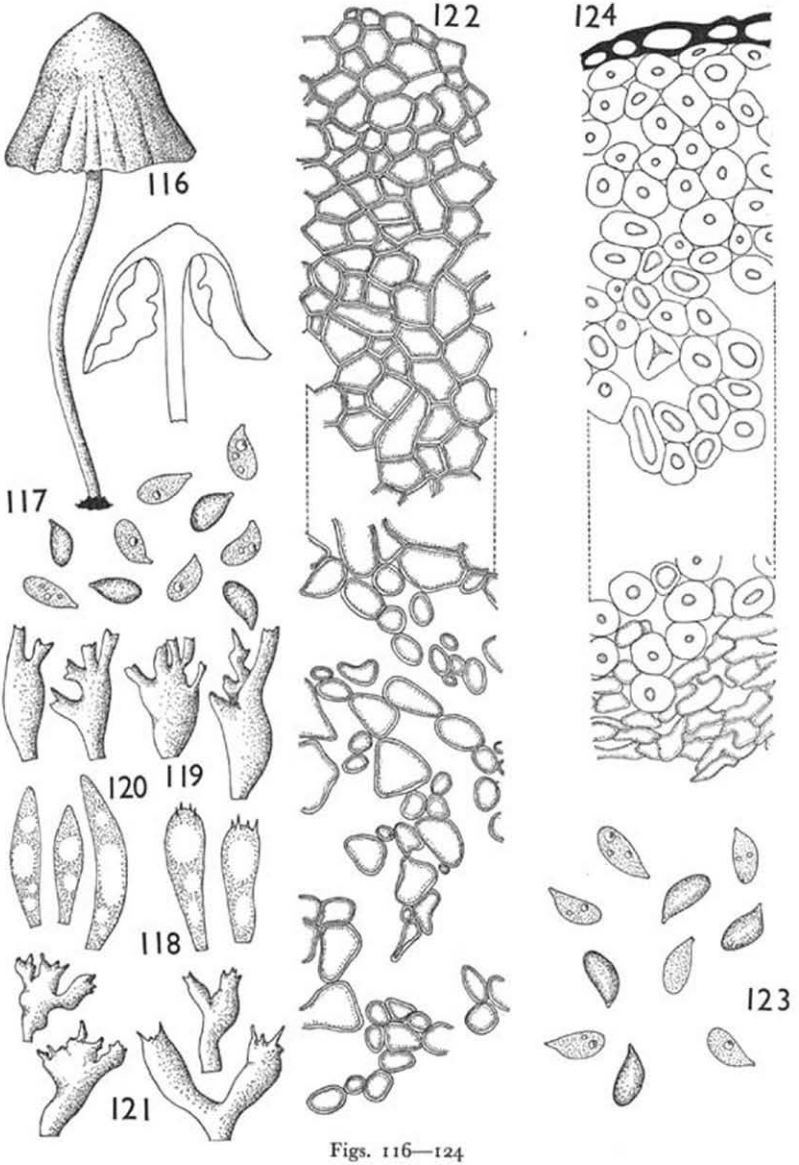
MARASMIUS KROUMIRENSIS (Pat.) Sacc. & Syd.—Text-figs. 130, 131

Androsaceus kroumirensis Pat., Cat. Pl. Cell. Tunis. 32. 1897. — *Marasmius kroumirensis* (Pat.) Sacc. & Syd., Syll. Fung. **14**: 105. 1899.

EXPLANATION OF FIGURES 116–124

Figs. 116–122. *Marasmius bubalinus*. — 116. Habit of sporophore and section (× 2). — 117. Spores. — 118. Basidia. — 119. Cheilocystidia. — 120. Basidioles. — 121. Epicuticular elements. — 122. Radial section through the stipe.

Figs. 123, 124. *Marasmius leveillianus*. — 123. Spores. — 124. Radial section through the stipe. (All × 1000 unless otherwise stated.)



Figs. 116—124

Pileus 1–2 mm diam., strongly convex becoming expanded, broadly umbonate, thin, fuscous, with 5–6 radial grooves; sinuate at the margin. *Lamellae* adnate, white, thin, distant, only 7–8 present, no lamellulae, non-collariate; edge concolorous with the pileus. *Stipe* 7–10 mm long, filiform, cylindric, hollow, reddish-brown, glabrous. *Spores* not recovered. *Basidia* 16.5–19.5 × 5–6 μ, claviform, bearing 4 short sterigmata. *Cheilocystidia* abundant, 12.5–20 × 5.5–12 μ, hyaline or with a pale brown membrane pigment, thin-walled, forming a sterile gill-edge, varying in shape from subglobose to piriform, occasionally more elongate, upper regions heavily ornamented with pronounced conical verrucae (1–3.5 μ long). *Pleurocystidia* numerous, 19.5–36 × 3–5.5 μ, fusiform to lanceolate, often mucronate, hyaline, thin-walled, with a fine, granular incrustation at the apex. *Hymenophoral trama* hyaline, subregular, consisting of thin-walled, inflated hyphae, 2–5 μ diam., with clamp-connexions at the septa. Subhymenial layer subcellular. *Pileus-surface* strictly hymeniform; consisting of subglobose elements of the *Rotalis*-type, which may be catenulate, somewhat agglutinated; individual elements 12–17 × 7–12 μ, verrucose, similar to the cheilocystidia, reddish-brown, walls often thickened considerably (up to 4 μ) in the region of the verrucae.

Amongst decaying leaves. Aïn Darham, Tunisia. July 1895. Legit *N. Patouillard* (FH, type).

The type collection is in an extremely poor condition, consisting of a solitary stipe with a tiny fragment of the pileus, and so it has not been possible to add to the macro-characters anything beyond those supplied by Patouillard. However, it is clear from the microscopical evidence that *M. kroumirensis* is typical of the section *Hygrometrici* Kühn. of the genus *Marasmius* Fr. It is very closely related to *M. echinosphaerus* Sing., described from the Congo, and may subsequently be found to represent the same species.

MARASMIUS LEVEILLIANUS (Berk.) Pat.—Text-figs. 123, 124

Heliomyces leveillianus Berk. *in* Hooker Lond. J. Bot. **6**: 490 bis. 1847. — *Marasmius leveillianus* (Berk.) Pat. *in* Bull. Soc. mycol. Fr. **33**: 55. 1917.
Marasmius umbraculum Berk. & Br. *in* J. Linn. Soc. (Bot.) **14**: 36. 1873.

On decaying wood. Hautane, Ceylon. July 1844. Legit *Gardner*, no. *72* (type of *H. leveillianus*). Peradeniya, Ceylon. Oct.–Dec. 1868. No. *807* (type of *M. umbraculum*). Mpanga Forest, Uganda. Spring 1957. Legit *A. French*, no. *47*.

This species was originally described by Berkeley from Ceylon, and has more recently been recorded from the Congo by Singer (1964a). Examination of the type material has revealed abundant spores which measure 7.2–9.5 × 3.3–4.4 (8.3 × 3.7) μ. Petch (1948) listed *M. umbraculum* Berk. & Br., also described from Ceylon, as a synonym. Subsequent examination by the present author of the type material of this latter species has confirmed this opinion.

For further details concerning the micro-structure of *M. leveillianus*, see under *M. bubalinus*.

Melanoleuca tropicalis Pegler, *sp. nov.*—Text-figs. 132–136

Pileus 20–55 mm latus, convexus dein expansus, leviter umbonatus, subhygrophanus, laevis, glaber, ad discum ochraceo-bubalinus, ad marginem pallidius cremeotinctus involutus.

Lamellae albidae, sinuatae, confertae, ad aciem integrae. Stipes 4–7 cm × 4–7 mm, aequalis, ad basim clavato-bulbosus, primo albidus, dein pileo concolor, glaber. Caro tenuissima. Sporae 7.5–10 × 4.5–5.5 (8.4 × 4.7) μ, ellipsoideae vel ellipsoideo-oblongatae, hyalinae, forte asperulatae (sec. typum VI Singeri), amyloideae. Pleurocystidia moderate numerosa, 34–48 × 4.7–7.5 μ, tenuitunicata, hyalina, subulata vel lagenitormia ad apicem acuta, semper septo transverso praedita, cheilocystidia similia vel nulla. Trama hymenophoralis stricte regularis. Hyphae cuticulae pilei hyalinae, 3–8 μ diam. Hyphae defibulatae.

In pratum. Makerere University College, Uganda. Alt. 4,100 ft. 21 April 1964. Legit *E. A. Calder*, no. *69* (Typus).

Pileus 20–55 mm diam., convex or plano-convex, becoming expanded and then obtusely umbonate, 'Ochraceous Buff' at the centre, fading to 'Cream Color' or 'Cream-Buff' towards the margin, subhygrophanous, smooth, glabrous; margin always remaining incurved. *Lamellae* white to pale cream, sinuate, crowded, up to 5 mm in width; edge entire. *Stipe* 4–7 cm × 4–7 mm, equal with a clavate bulbous base at maturity, white at first becoming concolorous with the pileus, smooth, fibrous fleshy. *Context* very thin, not more than 3–4 mm in thickness; consisting of loosely interwoven hyphae, 2.5–10.5 μ diam., hyaline, septate, broadly inflated. *Spores* 7.5–10 × 4.5–5.5 (8.4 × 4.7) μ ellipsoid to ellipsoid-oblong, hyaline, thin-walled, ornamented by a coarsely warted, strongly amyloid exosporium, the warts forming a type-VI ornamentation (verrucose without anastomes or ridges), prominent apiculus and smooth suprahilar plage. *Spore print* pure white. *Basidia* 25–32 × 7–8 μ, claviform, bearing 4 sterigmata, 2.5–4 μ long. *Pleurocystidia* present, 34–48 × 4.5–7.5 μ, leptocystidioid, thin-walled, hyaline, varying in shape from subulate to lageniform with a long narrow neck, pointed at the apex; always a transverse septum at the base of the neck, no apical incrustations observed; not abundant. *Cheilocystidia* similar to the pleurocystidia but very rare and often absent. *Hymenophoral trama* up to 110 μ wide, strictly regular, except for a very narrow, interwoven mediostratum which disappears in the lower part of the gill; consisting of narrow, hyaline, thin-walled hyphae, 1.5–4.5 μ diam. Subhymenial layer subcellular, 11–17 μ wide. *Pileus-surface* a cutis, of repent, loosely interwoven, hyaline hyphae, 3–8 μ diam., septate, branched, not showing any radial arrangement. All hyphae inamyloid, devoid of clamp-connexions.

On lawn. Makerere University College, Uganda. Alt. 4,100 ft. 21 April 1964. Legit *E. A. Calder*, no. *69* (Type).

The pale cream colours of the pileus and stipe, together with the narrow lamellae, would indicate that this species belongs in the section *Alboflavidae* Sing. of the genus *Melanoleuca* Pat. The overall macroscopic appearance and habit closely approaches that of the European species, *M. strictipes* (Karst.) J. Schaeff. However, the cystidia of *M. strictipes* are lageniform with an obtuse apex to the neck, which is generally covered by a crystalline incrustation, and quite different from those of *M. tropicalis*. The fine, urticoid structure of the cystidia suggest that the intrageneric relationship for this species might be sought in the section *Oreinae* Sing., close to *M. exscissa* (Fr.) Sing. *Melanoleuca exscissa* differs in the darker pigmented pileus, the shorter stipe, the absence of pleurocystidia, and slightly broader spores.

RESUPINATUS APPLICATUS (Batsch ex Fr.) S. F. Gray

See *Pleurotus palmicola*, p. 97.

Xerulina deseynesiana Pegler, *nom. nov.*—Text-figs. 137–141

Clitocybe verruculosa De Seynes, Recherches Hist. nat. Fl. Champ. Congo français **I**: 7, pl. 3, figs. 8–10. 1897; not *Xerulina verruculosa* (Sing.) Sing. *in* Sydowia **15**: 59. 1961.

Pileus 10–25 mm diam., hemispherical to convex becoming expanded at maturity, either broadly umbonate or depressed at the centre, 'Cream Color' to 'Warm Buff', beset with an extensive covering of minute, brown, innate, furfuraceous scales which are sparse towards the margin but coalescent at the centre to produce a 'Chestnut-Brown' disc; margin straight, undulate, entire. *Lamellae* sinuato-adnexed, subventricose, cream to pallid, drying 'Ochraceous-Buff', moderately crowded with lamellulae; edge *sub lente* pruinose. *Stipe* 1.5–2.5 cm × 1–2 mm, equal, cylindric, hollow, concolorous with the pileus, umbrinous towards the base, smooth, arising from a white mycelial, bulbillose base. *Context* comparatively thick, concolorous, inamyloid. *Spores* 3.5–5.8 × 2–3.2 (4.5 × 2.5) μ, oblong-ellipsoid to ellipsoid, hyaline, thin-walled, smooth, inamyloid. *Spore print* pure white. *Basidia* 14–17.5 × 4–5 μ, claviform to subcylindric, bearing 4 sterigmata (up to 4 μ long). *Cheilocystidia* 23–28 × 3–3.5 μ (at base), narrow lageniform, swelling slightly towards the apex, hyaline, thin-walled, smooth, with dense cytoplasmic contents; fairly abundant, intermixed with the basidia, and projecting beyond the hymenium for up to 20 μ. *Pleurocystidia* absent. *Hymenophoral trama* hyaline, regular or nearly so, consisting of thin-walled, hyaline, septate hyphae, inflated up to 8 μ diam. Subhymenial layer well developed, up to 12 μ wide, subcellular. *Pileus-surface* a trichodermial palisade, becoming much fragmented at an early stage. The elements are subglobose to piriform, becoming short cylindric and irregular, 9–20 μ diam.; wall slightly thickened, brown pigmented, and smooth; forming short irregular chains. *Caulocystidia* absent. All hyphae provided with clamp-connexions.

Amongst forest litter, associated with roots. Mpanga 69, Makerere University College, Uganda. Alt. 4,300 ft. 13 April 1964. Legit *E. A. Calder*, no. *40*.

De Seynes (1897) described an agaric from Diélé (Moyen Congo) which he named *Clitocybe verruculosa*. The description and figure were apparently based upon immature material, and the lack of any spore development world support this view. However, the excellence of his accompanying illustrations, particularly those of the micro-characters which include the cystidia and pileus-surface structures, can leave little doubt that the above material from Uganda constitutes the same species.

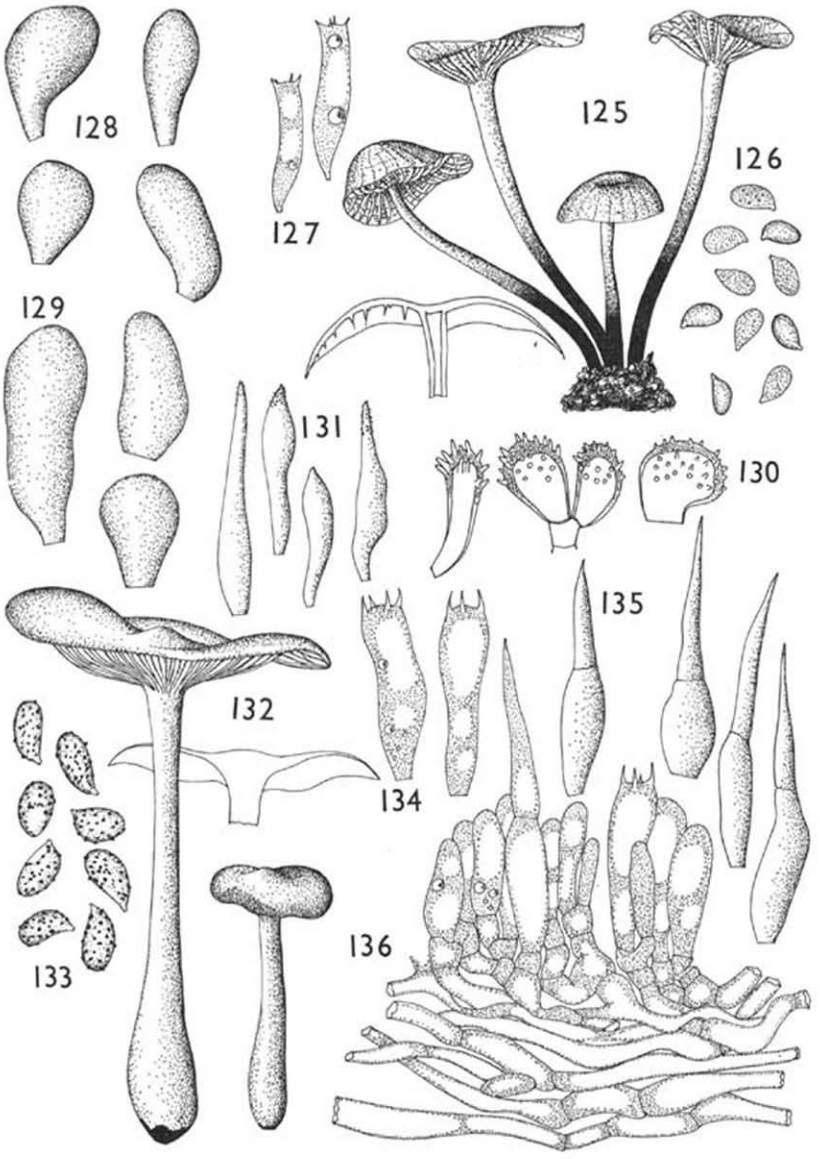
Singer (1953) described *Xerula verruculosa* from the Argentine, subsequently transferring it to his own genus *Xerulina* (1961). He suggested that the species described by De Seynes might be the same, but did not include it in synonymy. It has now become clear from examination of recently collected, fertile material of the tropical African fungus, that it is quite different from the species described by Singer.

EXPLANATION OF FIGURES 125–136

Figs. 125–129. *Marasmius favoloides*. — 125. Habit of sporophore and section (× 1). — 126. Spores. — 127. Basidia. — 128. Epithelial elements. — 129. Caulocystidia.

Figs. 130, 131. *Marasmius kroumirensis*. — 130. Cheilocystidia. — 131. Pleurocystidia.

Figs. 132–136. *Melanoleuca tropicalis*. — 132. Habit of sporophore (× 1). — 133. Spores. — 134. Basidia. — 135. Pleurocystidia. — 136. Hymenium. (All × 1000 unless otherwise stated.)



Figs. 125—136

As the combination *Xerulina verruculosa* is already preoccupied, it therefore becomes necessary to provide a new name.

The vesiculose cheilocystidia, and the very much larger and differently shaped spores, 6.8–8.3 × 5.5–6.8 μ, readily distinguish *X. verruculosa*. *Xerulina deseynesiana* differs from the other species of *Xerulina*, by the minute spores.

XERULINA LACHNOCEPHALA (Pat.) Sing.—Text-figs. 142–146

Xerulina lachnocephala (Pat.) Sing. *in* Sydowia **15**: 59. 1961.

Pileus 20–30 mm diam., convex becoming expanded, ochraceous, surface broken up to form numerous, minute, pyramidal, granular or furfuraceous scales which extend to the margin; margin straight, entire. *Lamellae* adnate to subdecurrent, pallid, moderately crowded with numerous lamellulae and slight interveining; edge entire. *Stipe* 5 cm × 3 mm, expanding towards the apex, cylindric, hollow, concolorous with the pileus, with a loose velvety-tomentose covering. *Context* thin, hyaline, inamyloid. *Spores* 6–8.3 × 4.5–5.7 (7.2 × 4.9) μ, broadly ellipsoid to limoniform, hyaline or slightly stramineous, thin-walled, smooth, inamyloid, with numerous granular contents. *Basidia* 21–26 × 4.5–5.5 μ, claviform, bearing 4 sterigmata. *Cheilocystidia* absent. *Pleurocystidia* few, 27–45 × 9.5–11.5 μ, broadly cylindric to fusiform, hyaline, thin-walled, projecting. *Hymenophoral trama* hyaline, regular or nearly so, consisting of thin-walled hyphae, 1.7–4 μ diam., inflated up to 7 μ. Subhymenial layer subcellular. *Pileus-surface* a trichodermial palisade, much fragmented, consisting of chains of elongate elements, frequently branched at the septa; individual elements 14–40 (–60) × 3.5–11.5 μ, oblong cylindric, with very thick (–4 μ), yellowish-brown walls, and a constricted lumen; terminal elements variable, claviform to lanceolate, sometimes with a nodulose apex. The trichodermium forms a layer up to 140 μ thick. All hyphae provided with clamp-connexions.

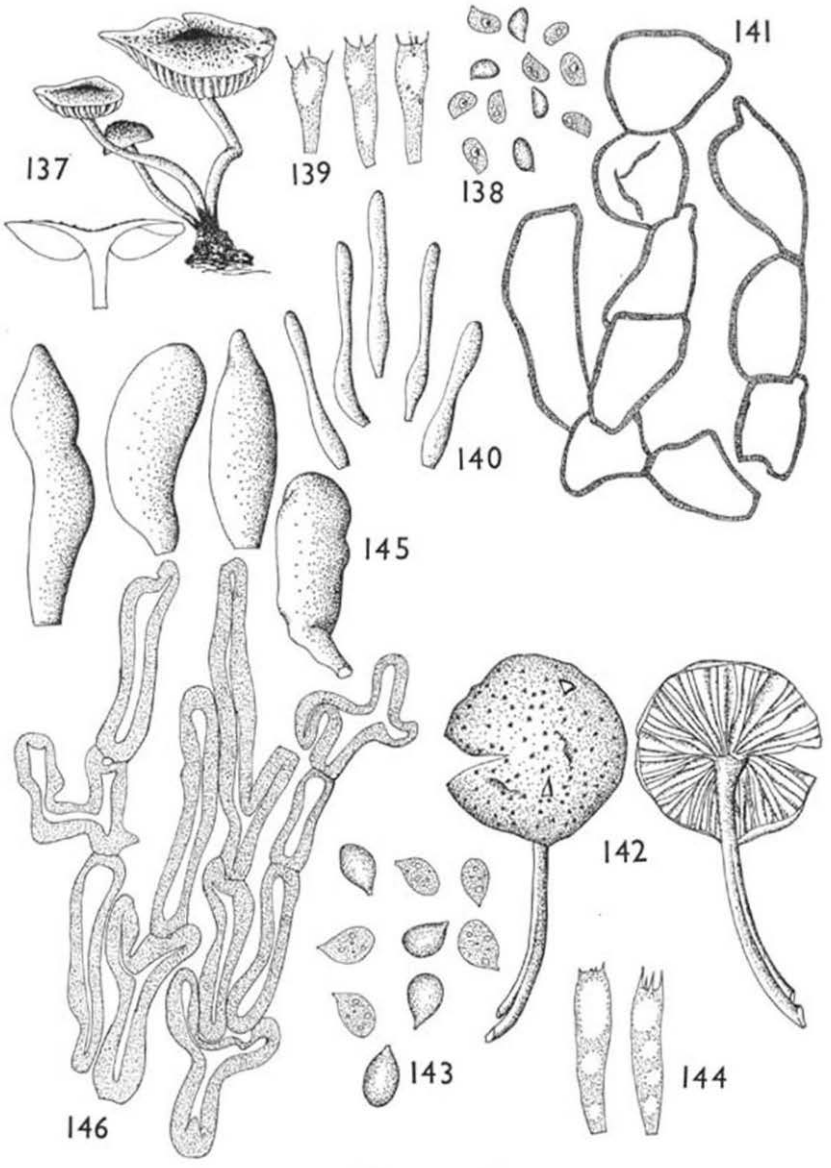
On the ground (?). Missango, Ubangi, Congo. 1891. Legit *M. J. Dybowski* (FH, type).

Patouillard (1902) made no mention of spores when he first described this species as a *Collybia*, but examination of the type specimen by the present author has revealed numerous spores, though many are in a collapsed condition. Singer (1964) indicated that *X. lachnocephala* is very closely related to the tropical American species, *X. chrysopepla* (Berk. & Curt.) Sing., but the former species may be separated on the colour of the sporophore, the smaller and differently shaped spores, and the elements of the trichodermium.

EXPLANATION OF FIGURES 137–146

Figs. 137–141. *Xerulina deseynesiana*. — 137. Habit of sporophore and section (× 1). — 138. Spores. — 139. Basidia. — 140. Cheilocystidia. — 141. Trichodermial elements.

Figs. 142–146. *Xerulina lachnocephala*. — 142. Sketch of type specimen (× 1). — 143. Spores. — 144. Basidia. — 145. Pleurocystidia. — 146. Trichodermial elements. (All × 1000 unless otherwise stated.)



Figs. 137—146

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SIGNIFICANCE OF THE CLAMP-CONNECTION IN THE BASIDIOMYCETES

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(With Plates 6–9)

The cytogenetic phenomena affecting clamp-connection formation and the interpretation of this peculiar type of septum in the classification of the higher Basidiomycetes were reviewed from the literature and discussed. The cytogenetic data available are restricted tó a small number of basidiomycetous species, but the formation of clamp-connection is included among the major phenomena whose genetic control is generalized for the Basidiomycetes.

Clamp-connection formation in heterothallic species is controlled by the factors affecting sexuality. Simple septa appear in the hyphae of clamp-connection bearing species when (1) the simple septa result from independent nuclear division of the dikaryon, with or without subsequent hyphal growth of the newly recovered monokaryon, (2) when there is production and further development of apomictic (asexual) spores containing only one of the nuclear components of the dikaryon, or (3) when there appears any kind of monokaryotic hyphal growth caused by the splitting of the dikaryon. The monokaryotic hyphae are invariably simple-septate. Genetic experiments also show that simple septa appear in successful crosses between monokaryons of tetrapolar heterothallic species carrying homoallelic *A* or *B*, or even both at the same time, incompatibility factors. Therefore, the clamped and simple-septate hyphae of the Basidiomycetes are genetically and cytologically distinct. In homothallic species the control of clamp-connection formation is not well known, but whenever clamp-connections are formed there are nuclear pairings. In pseudohomothallic species the formation of clamp-connections follows the pattern of the heterothallic species, but masked by the dikaryotic nature of the basidiospores.

The taxonomic interpretation of the clamp-connection is somewhat divergent. In many cases the authors did not investigate the cytogenetic condition of the hyphae to formulate their hypothesis. This shows the necessity of the proper evaluation of the pattern of septation of the hyphae before any hypothesis is formulated.

Introduction

The clamp-connection is a character of questioned taxonomic significance because of its inconspicuousness and irregular pattern of occurrence in many Basidiomycetes, especially the Polyporales and Agaricales. In contrast to this erratic occurrence, this peculiar type of septum is both prominent and abundant in mycelia derived from culture of basidiocarp tissues of many species in which the septation is not evident in nature.

The careful study of the septation in the Basidiomycetes has been stressed only recently by a few mycologists, although the cytologic studies involving the formation of clamp-connections are advanced. This manuscript is essentially a review paper. The cytologic preparations used to illustrate this paper and many of the taxonomic studies on polypores are original. The cytogenetic data were all taken from the literature. I hope to bridge the gap between taxonomy and modern genetics of the Basidiomycetes, emphasizing the necessity to define the septation of the species properly.

Material and methods

Cytologic preparations for nuclear demonstration were made by the HCl-Giemsa technique (Ward & Ciuryzek, *1962*) with the tropical wood-rotting polypore, *Polyporus pseudoboletus* Speg. Hyphal studies of fresh and dried specimens (of several species of polypores) were made by Teixeira's technique (*1956*, *1962a*) of sampling and immediate mounting. Semipermanent mounts of unstained material were made in lactophenol-cotton blue medium (Alexopoulos & Beneke, *1962*). Permanent mounts of stained and unstained preparations were made with the use of the water-soluble plastic "Abopon" (Hrushovetz & Harder, *1962*). Additional technique used for herbarium specimens included staining with 0.5 percent aqueous solution of toluidine blue, washing with distilled water and mounting in either distilled water or "Abopon".

Photographies were made with 35 mm black-and-white Adox KB-14 film under bright-field, dark-field, and phase-contrast illuminations. Prints were made on the high contrast Kodabromide F4 and Agfa 6 papers.

Nomenclature of the mycelium and its components

Homokaryotic and monokaryotic are genetic terms for the haploid mycelium of the Basidiomycetes; the corresponding taxonomic term is primary mycelium. The hyphal segments of the primary mycelium are uninucleate or multinucleate (Olive, *1953*) and invariably simple-septate (Figs. 1–5). Two contradictions to this generalization are (1) the presence of true clamp-connections in the primary mycelium of *Stereum hirsutum* (Willd.) ex Fries and *Coprinus narcoticus* (Batsch) ex Fries, respectively claimed by Kniep and Brunswik (Gäumann & Dodge, *1928*; Raper, *1953*), and (2) the presence of incomplete clamp-connections in the primary mycelium of *Itersonilia perplexans* Derx reported by Olive (*1952*). Both cases will be discussed later on.

Heterokaryotic and dikaryotic are genetic terms applied to the diploid-equivalent phase of the life-cycle of the Basidiomycetes. The corresponding taxonomic term is secondary mycelium. The hyphae of the secondary mycelium are usually binucleate, but also multinucleate (Olive, *1953*), and either simple-septate or bearing clamp-connections (Figs. 6–7). In species with both types of septa (either in the mycelia from culture of basidiocarp tissues, or in the mycelium of the basidiocarp

in nature), the simple-septa never appear in hyphal segments of dikaryotic constitution.

Context, dissepiment, trama, hymenium, and so on, are terms used currently in classification. A new terminology has been introduced with the addition of the microstructural criteria in classification. The hyphae that can divide and form new structures such as basidia, cystidia, setae, and any other modified hyphal types are termed generative hyphae (Corner, *1932a*, *1932b*). By its original definition, any dividing hypha could be called generative. Teixeira (*1962a*, *1962b*) limited the definition of the generative hyphae to the totipotent dikaryotic elements of the species. In many Basidiomycetes the generative hyphae are the only constituent of the basidiocarp context. In others, the generative elements differentiate into morphologically and functionally distinct structures, particularly the skeletal and binding hyphae (Corner, *1932a*, *1932b*, *1953*; Cunningham, *1954*, *1963*; Teixeira *1956*, *1962a*, *1962b*). In contrast to the totipotent nature of the generative hyphae, the true skeletal and binding hyphae lose their capacity for cell division and are characterized by having a limited growth. Therefore, the generative hyphae are the structures in which the pattern of septation of the species should be surveyed.

Sexuality and clamp-connection formation

Contemporary research has demonstrated a strict relationship between the genetic factors controlling sexuality and clamp-connection formation in the Basidiomycetes. The sexual processes in this class of fungi (Raper, *1960*) are characterized by (1) a generally haplo-dikaryotic life-cycle; (2) a (a) homothallic, (b) bipolar and tetrapolar heterothallic, or (c) pseudohomothallic or secondary heterothallic patterns of sexuality; and (3) a mechanism of somatic copulation by hyphal fusion followed by nuclear migration.

The first survey of the distribution of these patterns of sexuality among the Basidiomycetes (Whitehouse, *1949a*) showed that, in the sample analysed, only 10 percent of the species was homothallic. Of the remaining 90 percent, 35 percent was bipolar heterothallic and 55 percent tetrapolar heterothallic. This is a biased sample since species with clamp-connections were and still are selected for study. It does indicate, however, the predominance of heterothallism and, within this, of tetrapolarity, a particular attribute of the Basidiomycetes.

In homothallic species, a single, haploid basidiospore completes the entire life-cycle, including karyogamy and meiosis. In the clamped, homothallic species studied, the initial mycelial growth is usually characterized by hyphae possessing simple septa. Clamp-connections appear later on and the hyphae now show paired nuclei (Buller, *1958*; Boidin, *1958*; Berthier, *1963*). The use of the term dikaryon for the secondary mycelium of the homothallic species is misleading because, although association of genetically diverse nuclei (except the mating system, because there is no such a thing in homothallic species) can be established (hybridization), all the nuclei can perform the entire life-cycle "*per se*". Olive (*1953*) proposed the

distinguishing term "homodikaryon" for the secondary mycelium of the homothallic Basidiomycetes.

Bipolar heterothallism in the Basidiomycetes follows the analogous *A*, *a* system of the heterothallic Mucorales and Ascomycetes. Tetrapolar heterothallism is interpreted as the consequence of the addition of a new factor, *B*, located on a different chromosome.

To the classical interpretation of tetrapolarity (Quintanilha, *1933*, *1935*; Buller, *1941*, *1958*; Whitehouse, *1949a*, *1949b*; Papazian, *1950*, *1958*; Raper, *1953*) the concept of compound loci for incompatibility (Papazian, *1951*) has been added. Tetrapolarity is now interpreted as follows; (1) both the *A* and *B* incompatibility factors are formed of at least two subunits; (2) each subunit is composed of a multiple allelomorphic series; (3) the total expression of each factor, either *A* or *B*, results from the individual composition of each subunit; (4) any allelic change at one of the subunits leads to an entire change of expression of the factor affected; and (5) the subunits of both *A* and *B* factors form new combinations by crossing-over and by spontaneous and induced mutations (Raper, Baxter & Middleton, *1958*; Day, *1960*; Raper, Baxter & Ellingboe, *1960*; Parag & Raper, *1960*; Takemaru, *1961*; Parag, *1962*; Finchan & Day, *1963*; Raper, *1963*; Raper & Esser, *1964*).

According to the allelic constitution of the incompatibility loci, four types of heterokaryons can be recognized: (1) heteroallelic *AB* heterokaryon, (2) heteroallelic *A*, homoallelic *B* heterokaryon (common-*B*), (3) homoallelic *A*, heteroallelic *B* heterokaryon (common-*A*), and (4) homoallelic *AB* heterokaryon (common-*AB*). Geneticists usually refer to the first type of heterokaryon as the dikaryon, and to the others simply as heterokaryons.

When primary (homokaryotic) mycelia of clamped, tetrapolar species are paired, true clamp-connections are formed only if the homokaryons carry different alleles at both *A* and *B* loci. If the mates are homoallelic at one or at both incompatibility loci, the heterokaryon eventually formed is limited and unstable, often resolving into its homokaryotic components. In rare instances, however, the heterokaryons may fruit like the dikaryon (Raper, *1963*; Raper & Raper, *1964*). Genetic investigations indicate that the *B* factor controlls extensive nuclear migration leading to heterokaryosis. In some cases the common-*B* heterokaryon has simple septa (unclamped) whereas in others the clamp-connections are replaced by incomplete, false or pseudoclamp-connections (Quintanilha, *1935*; Fulton, *1950*; Papazian, *1950*, *1958*; Raper, *1953*, *1963*; Raper & San Antonio, *1954*; Parag & Raper, *1960*; Swiezynski & Day, *1960a*; Takemaru, *1961*; Parag, *1962*, *1965*; Raper & Esser, *1964*; Raper & Raper, *1964*). In the pseudoclamp-connections the hook may grow insufficiently to reach the eventual penultimate cell, may touch the subterminal cell without fusing with it, or may grow independently as a hyphal branch. The hook of the pseudoclamp-connection fails in transfering the complementary nucleus to the penultimate cell. Therefore, the eventual heterokaryon is restricted to some terminal cells of the hyphae. The *A* locus has a specific control on clamp-

connection formation: in common-*A* heterokaryons neither clamp-connections nor pseudoclamp-connections are ever formed. Only when the *A* factor is heteroallelic are true clamp-connections or pseudoclamp-connections formed (Finchan & Day, *1963*).

A cytoplasmic influence upon clamp-connection formation was claimed by Harder (Papazian, *1958*). He destroyed the terminal cell and its hook before fusion with the subterminal element and reported that true clamp-connections were formed during considerable growth of the newly-formed subterminal, homokaryotic, dicytoplasmic cell. Harder's claims were not confirmed by Aschan (*1952*) and Fries & Aschan (*1952*) who reported neither clamp-connections nor pseudoclamp-connections in the 'neohaplonts', i.e., the homokaryons obtained from the dikaryotic dividing hyphae. The problem of the dicytoplasmic influence on clamp-connection formation was reconsidered recently by Raper & Raper (*1964*).

The specificity of the genetic control of clamp-connection formation is also revealed in homokaryons carrying one or more mutations that disrupt the mechanism of the control of incompatibility (Raper, *1963*). Under these circumstances, the mutant-*B* homokaryon mimics the common-*A* heterokaryon; the mutant-*A* or the modified-*A* homokaryon mimics the common-*B* heterokaryon; and the mutant-*B* modified-*A* homokaryon mimics the dikaryon. The latter mutant-type forms pseudoclamp-connections and eventually fruits, but true clamp-connections are not formed because there is only one nucleus per cell. The necessary participation of two genetically distinct nuclei for formation of true clamp-connections in heterothallic species raises doubts concerning Kniep's and Brunswik's claims of clamped primary mycelia (Gäumann & Dodge, *1928*; Raper, *1953*). The natural occurrence of homokaryons with pseudoclamp-connections (Olive, *1952*) might be tentatively assumed as the consequence of mutations that disrupt the mechanism of incompatibility control in nature. The dependence of septation on proper allelic constitution of the *A* and *B* factors in *Schizophyllum commune* Fries is shown in Table 1 (provisional, tentative and unpublished data kindly given by Dr. John R. Raper, Harvard University, used here with his permission).

Although the reports of clamp-connections in the hyphae of the primary mycelium of heterothallic species are questioned, the special phenomenon termed spontaneous dikaryotization of the homokaryon still remains to be explained. Raper (*1953*) mentioned the possibility of contamination of the homokaryon by spores carrying the opposite mating type, but Papazian (*1951*) claimed unquestionable cases of spontaneous dikaryotization. Papazian (*1958*) stated, however, that the normally behaving homokaryon "might be carrying extra *A* and extra *B* factors which later segregate out into a separate nucleus and produce a dikaryon, but they would have to be carried without their influencing the incompatibility phenotype which is incongruous."

Lange (*1952*) introduced the term 'amphithallism' for the phenomenon of formation of 'homothallic' and 'heterothallic' mycelia from the spores of the same basidiocarp. Lange's reports, as well as the results presented by French authors who

TABLE I

COMPARATIVE SEPTATION AND CLAMP-CONNECTIONS IN NORMAL AND MODIFIED MYCELIA OF SCHIZOPHYLLUM COMMUNE PERCENTAGE

(Provisional, unpublished data obtained by Dr. John R. Raper)

	Homokaryon	Heterokaryons					
	Ax Bc	Common-*A*		Common-*B*		Dikaryon	
		Nor.	Mod.	Nor.	Mod.	Nor.	Mod.
Simple septa	100	97.2	7.3	2.6	20.3	0.6	7.3
True clamp-connections	—	—	—	—	—	98.2	—
Septal pseudoclamps	—						
Non-septate	—	1.1	39.3	11.2	39.5	—	18.4
Non-septate, nucleate	—	0.6	2.5	4.3	0.7	—	1.4
Septate	—	—	21.3	8.6	12.0	—	24.3
Septate, nucleate	—	—	18.0	67.2	8.8	0.6	14.0
Interseptal pseudoclamps							
Non-septate	—	—	1.5	2.6	1.3	0.6	7.3
Non-septate, nucleate	—	—	6.0	3.5	1.3	—	11.0
Septate	—	—	0.7	—	—	—	1.4
Septate, nucleate	—	—	3.3	—	1.3	—	14.7
Sample	149	183	150	116	158	168	136

have accepted the term 'amphithallism' (Kühner, Lamoure & Fichet, *1962*; Lamoure, *1955*, *1957a*, *1957b*, *1957c*, *1959*, *1960*) show that the so-called 'amphithallic' species do form homokaryotic and dikaryotic basidiospores which generate the homokaryotic and dikaryotic mycelia respectively. The production of dikaryotic basidiospores was discussed by Sass (*1929*), Quintanilha, Quintanilha & Vasermanis (*1941*), and Skolko (*1944*), but it was Dodge (*1927*, *1957*) who analysed the consequences of the incorporation of genetically diverse nuclei in the ascospores of *Neurospora tetrasperma* Dodge. The apparent homothallism suggested by the single ascospore cultures of *Neurospora tetrasperma* was named 'pseudohomothallism' by Dodge, and the homologous phenomenon in the Basidiomycetes was called 'secondary heterothallism' by Whitehouse (*1949a*), a terminology that is used in Alexopoulos' (*1962*) textbook of mycology and Raper & Esser's (*1964*) contemporary review of sex and genetics in the fungi. Unless alternatively used for encompassing both typical heterothallism and pseudohomothallism the term 'amphithallism' should be replaced by Dodge's pseudohomothallism.

The fruiting ability in culture as the basis for the interpretation of some species is somewhat complicated by the phenomenon known as the 'haploid fruiting', sometimes erroneously referred to as parthenogenesis. In the haploid fructification the basidiospore progeny is of one mating type, the parental type. Although it may be possible that sister nuclei fuse in the young basidium, it is generally accepted that karyogamy and meiosis do not take place in the haploid fruiting specimen. Before deciding on the validity of clamps as a significant characteristic for the identification of fruiting bodies, the cytogenetic criteria of haploid versus dikaryotic condition must be securely established. This situation appears to have caused no taxonomic problems yet, especially because the extent of the haploid fruiting phenomenon in nature is unknown.

Growth and stability of the mycelium

Both primary and secondary mycelia are distributed commonly in nature (Nobles, *1958b*) and can grow independently of each other. Nuclear divisions in the vegetative hyphae have been interpreted as amitotic, by Bakerspigel (*1959*), as truly mitotic, by Olive (*1953*), Ward & Ciuryzek (*1961*), and Lu (*1964*). Raper & Esser (*1964*) stated that there remains the possibility of two or more basic modes of nuclear divison in general.

The HCl-Giemsa staining technique has been used most often among the cytologic procedures for nuclear demonstration in the fungi. The selection of the proper technique is important in the study of nuclear division. In addition to that, Ward & Ciuryzek (*1961*) indicated that the smallness of the chromosomes is under the resolutional limits of the optical microscope. Regardless of the small size of the nuclei (Fig. 8), nuclear division appears to be very rapid and the majority of the nuclei appears at interphase (Fig. 9). Chromosomal bodies, however, are prominent but difficult to count (Figs. 10–12).

Nuclear migration through the hyphae is a prominent phenomenon in the Basidiomycetes (Figs. 13–14). Despite the small aperture of the septal pores (Moore & McAlear, *1962*), Buller's (*1958*) statement that the entire nucleus migrates through the septal pore of the hyphae has been confirmed genetically by Snider (*1963*). In addition, Bracher & Butler (*1964*) pictured a nucleus of *Rhizoctonia solani* Kühn contracting through a 0.5 μ distended septal pore of a basidiomycetous-type of hyphal septum. No less remarkably is the picture shown by Giesy & Day (*1965*).

The events of conjugate nuclear division and their relationships with clamp-connection formation in the dikaryon were discussed by Bensaude (*1918*), Buller (*1930*, *1958*), Quintanilha (*1935*), Noble (*1937*), Dodge (*1942*), Routien (*1948*), Olive (*1953*) and others. Basically, three phenomena take place during clamp-connection formation: (1) the parent nuclei divide conjugately, (2) a simple septum is formed between each dividing parent nucleus, and (3) the hook derived from the upper cell fuses with the penultimate cell and transfers one nucleus re-establishing the dikaryotic condition. These phenomena may lack a constant time relationship (Noble, *1937*; Routien, *1948*), and the number of nuclei per cell and of clamp-connections formed at the same hyphal height may also vary (Olive, *1953*). Nevertheless, heterokaryosis is preserved even when the nuclei divide with a considerable lapse in time and space (Fig. 9).

Heterokaryosis is not absolute in the dikaryon. Whenever the parent nuclei are separated into different hyphal segments the dikaryon is split and the original homokaryons are recovered. This recovery has been induced experimentally in several ways. Harder (Papazian, *1958*) achieved it by micrurgical technique. Raper & San Antonio (*1954*) macerated the dikaryon in a Waring Blender, plated out on agar medium, and selected the simple-septate growing hyphae. Miles & Raper (*1956*), Da Costa & Kerruish (*1962*), and Kerruish & Da Costa (*1963*) used various toxic chemicals which, in some way, increased the proportion of homokaryons. In many species the spontaneous splitting of the dikaryon is observed commonly in culture by either the sorting out of the nuclei into uninucleate hyphal branches, or into uninucleate apomictic spores produced by the hyphae, with or without a special conidial apparatus.

Homokaryotic hyphal branches result from disturbance of conjugate nuclear division, especially when the parent nuclei of the dikaryon divide independently (Figs. 15–16) or when the spindle of the dividing nuclei are accommodated widely apart (Noble, *1937*).

Apomictic (asexual) spore formation is a major source for recovery of the original homokaryotic components of the secondary mycelium. The apomictic spores have been termed oidia, conidiospores, chlamydospores, ballistospores, secondary spores, gasterospores, etc. To name such spores as asexual spores is not absolutely satisfactory because apomictic basidiospores are produced by the haploid fruiting specimens.

The asexual spores can be produced by both primary and secondary mycelia. In

many cases the spores have been used as additional characteristics for recognition of the species, either in nature or in culture (Cartwright, *1929*, *1932*; Chow, *1934*; Nobles, *1943*; Kühner, *1946*, *1947*; Olive, *1946*, *1947*, *1948*; Kühner, Romagnesi & Yen, *1947*; Rogers, *1947*; Jackson, *1948a*; McKeen, *1952*; Bulat, *1953*; Sarkar, *1959b*; Jacquiot, *1960*; Pantidou, *1961*, *1962*; O. Fidalgo, *1963*).

Genetic and cytologic studies involving the asexual spores show that the primary mycelium may form uninucleate or multinucleate homokaryotic asexual spores (Martens & Vandendries, *1933*; Kaufert, *1935*; Nobles, *1935*, *1937*; Brodie, *1936*; Vandendries, *1937*; Bose, *1943*; Olive, *1950*; Maxwell, *1954*; Doguet, *1956*). These spores (Fig. 17) are formed usually in chains and result from a series of nuclear divisions without immediate formation of cross-walls (Figs. 10–11). They may also arise by budding (Figs. 12 and 19) or by a special conidial apparatus (Nobles, *1935*). Usually released singly or in pairs (Fig. 20), the homokaryotic asexual spores may germinate, giving rise to the primary mycelium, or may function as a dikaryotizing agent (Fig. 21).

The secondary mycelium may form: (1) only homokaryotic, asexual spores (Nobles, *1935*; Brodie, *1936*; Kühner & Yen, *1947*; Aschan, *1952*; Sarkar, *1959a*); (2) only dikaryotic, asexual spores (Kaufert, *1935*; Barnett, *1937*; Nobles, *1937*; Bose, *1943*; Doguet, *1956*; McKay, *1959*; Kühner, Lamoure & Fichet, *1962*); or (3) both kinds (Gilmore, *1926*; Vandendries, *1937*; Kühner, *1949*; Olive, *1952*; Lamoure, *1958*). The germ tube arising from an asexual, dikaryotic spore of a clamped species usually bears clamp-connections from the start (Fig. 22).

Asexual spores have also been reported from nature (Patouillard, *1887*; Heim & Malençon, *1928*; Jackson, *1948b*; O. Fidalgo, *1963*). In some species the asexual spores are produced in conjunction with the basidiospores; in others the asexual spores are formed in quantity to characterize the imperfect stage—the so-called *Ptychogaster*-form—of various species of different genera of Basidiomycetes.

Natural occurrence of clamp-connections

Clamp-connections occur more frequently in nature than is actually recognized. Conspicuous clamp-connections are found in many species, especially those with relatively simple hyphal organization such as the Tremellales (Martin, *1945*), Clavariaceae (Corner, *1950*), many Hydnaceae (Maas Geesteranus, *1962*, *1963a*, *1963b*, *1963c*) and various Thelephoraceae (Cunningham, *1963*). In other species the clamp-connections are not detected easily. This may be due to the construction of the basidiocarp, predominantly formed of skeletal and binding hyphae as in the Polyporaceae, or to the irregular pattern of septation, either in those cases in which clamp-connections and simple septa are found mixed, or in the cases in which septa are not seen. The latter situation—the irregular pattern of septation—is observed commonly in the Agaricaceae. In many cases, however, clamp-connections were not reported because the specimens were not studied carefully. Teixeira (*1960*) and Teixeira & Rogers (*1955*) demonstrated that clamp-connections were present

in species which had been previously reported as lacking clamps. Teixeira (*1962a*, *1962b*) has reported additional errors in descriptions pertaining to the manner of septation in various polypores.

The regular procedure for microscopic examination of the basidiocarp collected in nature is not often satisfactory for species with inconspicuous generative hyphae. Disregarding the errors made by some taxonomists, many mistakes on septal analysis are caused by optical devices of low resolution. Optimum optic conditions can be achieved with phase-contrast illumination and staining with methylene blue or with toluidine blue aqueous solutions. In addition, detection of the proper hyphae for observation of septa usually requires the proper sampling of the basidiocarp (Teixeira, *1956*, *1962a*).

In species with inconspicous septa or with an irregular pattern of septation, examination of the septa is made usually at the base of the hymenial structures such as the basidium, cystidium, setae, pseudoparaphyses, and so on. The absence of hymenial structures and the autolysis of the basidia, however, make such a practice useless. This handicap can be compensated for by the presence of modified generative hyphae as well as the presence of special structures of the pileus cover (Furtado, *1965*). The modified generative hyphae usually undergo changes in breadth, thickness of the wall, coloration, and so on, without losing their ability for cell division. Cell modification may affect contiguous or alternating segments of the generative hyphae. Consequently, the clamp-connection is modified wholly or partially (Figs. 23–24). The presence of clamp-connections can be determined even in separated segments of generative hyphae. Separation of two contiguous segments occurs exactly along the two septa of the clamp-connection. Since the hook originally formed by the terminal cell fuses with the eventual penultimate cell, the basal part of the originally terminal cell is recognized by a kind of lateral truncation which results from the more or less inclined septum formed from nuclear division inside the primitive hook. Furthermore, the two original septa of the clamp-connection form a convex angle at the basal portion of the terminal cell (Fig. 7a). The apical termination of the eventual penultimate cell has a bulge formed by the fusion of the primitive hook from the upper cell with the subterminal cell, and the septa now form a concave angle (Figs. 7a, 15, 23 and 25). The same principles of observation indicate the original direction of hyphal growth: the hook is always directed backward and the presence of the lateral bulge indicates the subterminal cell, therefore opposing the direction of growth. This general statement can be sometimes obscured e.g. by branching immediately from the clamp-connection (Fig. 7b) or by detachment of the segment at one end and reversion of growth direction (Figs. 15 and 23), the latter in need of further observation.

Another, but uncommon, source of hyphae for analysis of septation can be seen in species whose hymenial surface is tubular, plicate, folded, or provided with any irregularity. The generative hyphae can have localized growth and occlude the spaces of the hymenial surface. The generative hyphae that occlude those spaces

should be distinguished from contaminant fungi, either by the conidial apparatus or by the distinguishing staining reactions.

The appearance of simple septa in mycelium of species bearing clamp-connections results, therefore, from (1) disturbance of conjugate nuclear division in the generative hyphae; (2) formation of septa regardless of nuclear division, either by localized deposition of wall material (pseudoseptum), or by breakage of the cytoplasm followed by immediate restoration due to the properties of surface tension and further deposit of wall material (cleavage septum; Fig. 7c). These types of septum should not be compared with the clamp-connection: the simple septa derived from disturbance of nuclear division characterize the homokaryotic (haploid) stage of the life-cycle of the Basidiomycetes, whereas the septa formed without nuclear division are not true septa.

Taxonomic meaning of the clamp-connection

The systems of classification for the Basidiomycetes have been based traditionally on the general features of the prominent basidiocarps. The emphasis has been shifted gradually with the addition of microstructural criteria in classification. But yet there is general disagreement concerning the delimitation of higher taxa, especially the genera. Teixeira's (*1962a*) remarks on the chaotic state of classification of the Polyporaceae can be applied to other groups of Basidiomycetes as well.

Several attempts at a natural system of classification have been made; various types of modified hyphae were introduced as additional features in classification (Lentz, *1954*); an entire system of classification was based primarily upon the microscopic characteristics (Patouillard, *1900*); and many discussions and proposals have been made for different groups of Basidiomycetes (Ames, *1913*; Donk, *1933*, *1964*; Martin, *1945*; Wakefield, *1946*; Heim, *1946*; Cooke, *1949*; Pinto-Lopes, *1952*; Cunningham, *1954*; Bondartzev, *1953*; Nobles, *1958b*; Kotlaba, *1961*; Singer, *1962*; Teixeira, *1962a*; Lowe, *1963*). Nevertheless, the subject is still open to many questions.

The study of the basidiocarp from nature has been greatly enhanced by the introduction of microstructural criteria in classification proposed by Corner (*1932a*, *1953*) and developed by Cunningham (*1954*, *1963*) and especially by Teixeira (*1956*, *1962a*, *1962b*) and O. Fidalgo (*1964*). Among the microstructures of the basidiocarp, the presence or absence of clamp-connections has a position that is both important and contested. Some mycologists search for the pattern of septation habitually; others simply consider the septa to be of no taxonomic value. Between these extremes, there are mycologists who emphasize the septation only in species with prominent generative hyphae.

The position taken on the taxonomic significance of the presence of absence of clamp-connections is generally governed by the investigator's interpretation of the origin of the clamp-connection and of the species with simple-septate hyphae. The hypotheses on the origin of the Basidiomycetes are simply speculative and devoid

of fossil documentation. It is generally agreed, however, that the clamp-connection of the Basidiomycetes is homologous with the crozier of the Ascomycetes (Rogers, *1934*, *1936*; Linder, *1940*; Bessey, *1942*, *1961*; Arnaud, *1951*), although Savile (*1954*, *1955*) and Buller (*1958*) are contrary to the idea.

Various hypotheses tried to explain the origin of the species with simple-septate hyphae. Jackson (*1948b*) proposed the idea of 'homothallic', simple-septate lines derived from 'heterothallic', clamped species. This proposal is somewhat confusing, unless Jackson meant homokaryotic lines derived from clamped heterothallic species. A similar but better formulated hypothesis was presented by Nobles (*1958b*) who suggested that the absence of clamp-connections in the polypores might have arisen through the propagation of homokaryotic generation or through the suppression of formation of clamp-connection in the dikaryotic mycelium. Nobles also suggested that some simple-septate species appear to be homokaryotic counterparts of modern heterothallic species with clamp-connections, or of similar ancestral forms. Singer (*1962*) said that the clamp-connection has been abandoned in agarics in the evolutionary process of losing the clamp-connection as an unnecessary and uneconomical way of cell division, except for a specific organ. Hesler & Smith (*1963*) mentioned that the clamp-connections seem to have dropped out of *Hygrophorus* (Agaricaceae) here and there without regard to relationships of species.

In its pure taxonomic interpretation, the presence or absence of clamp-connections is considered to be significant at the species level by some authors, and at higher taxonomic rank by others. Hesler & Smith (*1963*) de-emphasized the value of the clamp-connections in their treatment of *Hygrophorus* and stressed that the pattern of septation can be used at the species level; Singer (*1962*), however, said that, in the Agaricales, the presence or absence of clamp-connections can be used for larger groups. Nobles (*1958b*) stated that the pattern of septation in the Polyporaceae can be of significant value at the species level, but Pinto-Lopes (*1952*) and Teixeira (*1962a*, *1962b*) mentioned that larger groups can be separated on the basis of the septation of the hyphae. Pinto-Lopes' and Teixeira's points of view have been confirmed in taxonomic studies of K. Fidalgo (*1959–1961*), O. Fidalgo (*1958–1964*), O. & K. Fidalgo (*1962*, *1963*), Teixeira (*1962b*), and Furtado (*1965*).

In the clamped species studied experimentally, clamp-connections are formed only in one specific heterokaryon, the dikaryon. The simple-septate hyphae of the clamped dikaryon are, invariably, homokaryotic counterparts. The coexistence of clamped and clampless hyphae has been reported often in basidiocarps collected in nature. It appears, however, that the only study of the genetical and cytological condition of the simple-septate hyphae found mixed with others with clamp-connections was made by Papazian (*1958*) who cultured the simple-septate, hair-like hyphae from the upper cover of the pileus of a species of *Coprinus* with clamp-connections and obtained homokaryotic mycelia. Otherwise, the mycologists have neglected the study of the cytogenetic condition of the hyphae and simply report the characteristics of the septation. Under these circumstances, the usual 'aberrations' reported are the species in which clamp-connections are found only in special areas

of the fructification such as the hymenium, the base of the stipe, the volva of the agarics, and no septa or simple septa found elsewhere. In other cases, clamp-connections are found throughout the context but the basidia are limited by a basal simple septum. These examples can be included under the general condition of 'irregular pattern of septation'.

The genetical studies are confined to a small number of species, but the genetical control of clamp-connection formation is accepted as a major phenomenon under the strict control of the factors affecting sexuality in pseudohomothallic and bipolar and tetrapolar heterothallic species. Furthermore, it is known that the survival of the heterokaryon (the common-*A*, common-*B*, or even common-*AB*) with simple-septum is difficult because the general tendency is the split of the heterokaryon into the homokaryotic components. These findings indicate how complex it would be for the geneticist to offer any tentative explanation for the idea already introduced by taxonomists of the origin of the species (dikaryon)—especially the heterothallic—with simple-septate hyphae from the clamped ones through the suppression of formation of clamp-connections.

In his discussion on the clamp-connection as a character for classification of the Aphyllophorales (Polyporales), Donk (*1964*) mentioned that "the absence of clamps in a fruitbody may be due, theoretically, to one of at least three factors: (i) the fruitbody being formed by a haploid mycelium, (ii) the species lacking clamps altogether, or (iii) the species in 'diploid' condition occurring in two 'forms', one clampless, one clamp-bearing." The first of Donk's assumption is perfectly possible, but not investigated satisfactorily; the second is totally recognized; but the third could be supported with difficulty on the basis of the cytogenetic data available.

The selection of characteristics which would allow the assemblage of the Basidiomycetes into more natural groups will throw some light on the interpretation of the taxonomic significance of the presence of absence of clamp-connections in the septa of the hyphae. Whether one accepts the traditional system of families of the Basidiomycetes, or the recent splitting of the Aphyllophorales proposed by Donk (*1964*), one verifies that some groups are formed of species with only clamp-connections, others with only simple septa, whereas some have species with both clamp-connections and simple septa. The taxonomic studies of large taxa made by mycologists who adopt the microstructural criteria in classification have also shown such a discrepancy. In his recent treatment of the Thelephoraceae, Cunningham (*1963*) segregated various genera in groups distinguishable additionally on the basis of the presence or absence of clamp-connections, but maintained genera that encompass clamped and clampless species. The coexistence of species with different type of septa within the same genera has not been confirmed in the taxonomic studies of the Polyporaceae by Teixeira (*1962b*), K. Fidalgo (*1959–1961*), O. Fidalgo (*1958–1964*), O. & K. Fidalgo (*1962*, *1963*), Furtado (unpublished).

Segregation of taxa of Basidiomycetes on the basis of microstructures genetically controlled and the behavior of the species in culture are modern and efficient tools in taxonomy. It is important, however, that both conservative and modern taxon-

omists take into consideration the necessity to investigate the cytogenetic condition of the hyphae whenever the pattern of septation is decisive for definition of any taxa or the proposal of any hypothesis.

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EXPLANATION OF PLATES 6—9

PLATE 6

Fig. 1. Simple-septate hyphae that coexist with the clamped ones in culture, × 500.
Figs. 2–5. Uninucleate, monokaryotic condition of the simple-septate hyphae, × 1000.
Fig. 6. Binucleate, dikaryotic nature of the clamped hyphae, × 1000.

PLATE 7

Fig. 7. The dikaryon: (a) the two septa of the clamp-connection, (b) the detachment of the hyphal segment at the level of several clamp-connections, and (c) the cleavage septa, × 1000.

PLATE 8

Fig. 8. Mitosis in a narrow homokaryotic hypha, × 2000.
Fig. 9. Asynchronous clamp-connection formation, × 1200.
Figs. 10–11. Successive mitosis in a homokaryotic hypha preceding the formation of apomictic spores, × 1000 and × 2000 respectively.
Fig. 12. Formation of apomictic spores through the process of budding, × 2000.
Figs. 13–14. Hyphal fusion and nuclear migration in the homokaryon, × 1000.
Figs. 15–16. Coexistence of simple-septa and clamp-connection in the same hypha. —
Fig. 16. Nuclear distribution of the dikaryon that divided independently; both × 1000.

PLATE 9

Figs. 17–22. Apomictic spores. — Fig. 17. Formation in chains, × 400. — Figs. 18–19. Uninucleate, homokaryotic spores, × 1500. — Fig. 20. Bicelled spore, × 1500. — Fig. 21. Dikaryotizing behavior of the apomictic spore, × 1000. — Fig. 22. Clamp-connection formation in a dikaryotic apomictic spore, × 1000.
Figs. 23–25. Clamp-connection in hyphae from basidiocarp collected in nature and preserved in herbarium. — Fig. 23. Detachment of a hyphal segment and inversion of the direction of growth, × 200. — Fig. 24. Generative hypha with clamp-connection, × 1000. — Fig. 25. Modified generative hypha with a broken clamp-connection, × 500.

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CHECK LIST OF EUROPEAN HYMENOMYCETOUS HETEROBASIDIAE

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With this check list an attempt is made to account for the recorded European species of those Basidiomycetes that Patouillard called the "Hétérobasidiés", excluding, however, the Uredinales and Ustilaginales. Therefore, it covers the Septobasidiales, Tremellales (comprising the Auriculariineae and Tremellineae), Tulasnellaceae (Corticiaceae with repetitive basidiospores), Dacrymycetales, and Exobasidiales. Of each species admitted the synonyms at the specific level are listed as are also references to selected descriptions and illustrations. Notes on taxonomy, synonymy, and nomenclature are appended to a considerable number of entries. A final chapter not only recapitulates alphabetically the names appearing in the check list proper: it also deals briefly with such generic and specific names as are considered to be either not validly published or nomina dubia, or else have been given to taxa that must be excluded as foreign elements. New species are *Glomopsis lonicerae* and *Tulasnella curvispora* Donk. New combinations with the following generic names are proposed: *Exidia* (1), *Exobasidiellum* (1), *Helicogloea* (1), *Myxarium* (1), *Saccoblastia*(1), *Septobasidium* (1), and *Tulasnella* (1).

Synopsis of Chapters

Preface

The main chapter of this publication, entitled "Check list of European hymenomycetous Heterobasidiae", exposes a very sick body on the operation table. A great deal of surgery is needed to restore the patient to some measure of health. This must be performed by the joint efforts of competent specialists, several of whom are already engaged on the task.

My own aim has been to present a somewhat personally tinted report on what has been done so far on the systematics of the species. The check list itself is an extract of a card-index for the Hymenomycetes which I have been building up over a

considerable period of time, a card-index of a kind that is compiled *before* beginning monographic treatment. I had no intention to go beyond this stage.

One of my principal objects was to check the literature, especially the references to the protologues of the published specific names, and in conjunction with this to study the protologues themselves. It was a sad experience to note how far this has been neglected by many mycologists of the preceding generations and even in the monographs of various contemporary authors. The transcription of bibilographic errors still makes up a portion of a number of recent publications. I wish to emphasize that every reference not followed by 'n.v.' has been checked. This also applies to those references which consist of only a date, i.e. without any further indication of place of publication.

To achieve a brief title the groups considered in this paper are indicated by the denomination 'hymenomycetous Heterobasidiae'. This means Patouillard's "Hétérobasidiés", with the exclusion of the Uredinales and Ustilaginales and a few other, minor, retouches, while the conception of the 'Hymenomycetes' is that of Fries (1874). The groups thus covered are (i) the Septobasidiales, included by Patouillard in his Auriculariaceae; (ii) the Tremellales, here conceived as a combination of what is now often called the Auriculariales and Tremellales; (iii) the Tulasnellaceae; (iv) the Dacrymycetales; and (v) the Exobasidiales.

It may be stipulated that I do not regard Patouillard's Heterobasidiae in its original conception an acceptable taxon. In my opinion, aside from the Uredinales, it should include only groups (i), (ii), and perhaps (iii). The Tulasnellaceae, as recently defined by Talbot (*1965*), are technically intermediate between the Tremellineae and the Aphyllophorales. This point will be more fully discussed in its appropriate place. As to the Dacrymycetales, notwithstanding the gelatinous fruitbody, this order differs in some features so distinctly from the Heterobasidiae sensu stricto that it can well be kept separate from the latter. Like the Tulasnellaceae it is apparently connected with the Corticiaceae (Aphyllophorales) by some intermediate taxa. These bridges should not be accepted at their face value; like Corner I am of the opinion that the Corticiaceae are, at least for the major part, a grade in which many 'reduced' groups are temporarily assembled until relationships with other families can be established. Several resupinate genera have already been excluded (cf. Donk, "A conspectus of the families of Aphyllophorales" *in* Persoonia **3**: 199–324. 1964).

My aim has also been to provide a basis for those mycologists who desire to view these groups from a strictly taxonomic angle. This basis consists of a compilation of the published names and a brief survey of the available literature on the subject. The appended notes are intended not only to clarify some of the considerations that have helped in shaping this check list, but also to draw attention to various subjects of interest, for the most part those that require further study.

It will soon be seen that I have kept the purely nomenclative references clearly separate from all the others. Moreover, as should be expected of a publication that calls itself a check list, they have been kept as brief as possible. They deal only with

specific names (save for the indispensable exceptions). On the other hand, much attention has been devoted to providing an adequate key to the literature and illustrations relating to each published name, thus furnishing an introduction to the available knowledge of each taxon. This may fill a need where such references have been omitted in recent monographs.

The registration of names is not intended to assign to them any status under the "Code" other than the one they had before this paper appeared. New names and new combinations are indicated unambiguously.

Method of presentation

Europe.

'Europe' is accepted in its traditional sense, without Greenland, but including the Caucasus.

Generic names.

Generic names are listed without the usual references. Variant spellings are not mentioned. For these and other nomenclative details the series "Generic names proposed for Hymenomycetes" (cf., *inter alia*, Donk, *1958b* [1]) should be consulted; references to this are added between square brackets.

EXAMPLE:—"CALOCERA (Fr.) Fr. / 1825 [1958 (Ta 7): 173]. — *Clavaria* subgen. *Calocera* Fr. 1821. — Lectotype: *Clavaria viscosa* Pers. per Fr." is an abbreviated form of

'CALOCERA (Fr.) Fr. 1825 (for place of publication and other nomenclative details, see Donk *in* Taxon **7**: 173. 1958). — *Clavaria* subgen. *Calocera* Fr. 1821, basionym. — Lectotype (selection discussed by Donk, l.c.): *Clavaria viscosa* Pers. per Fr.'

Specific names.

This check list distinguishes between four kinds of specific names: (i) the *basionym* and (ii) the corresponding *recombinations* of its epithet, as well as (iii) the corresponding *new names*, viz. name changes replacing an existing name. These recombinations and new names together form the isonyms of the (ultimate) basionym.

The last category is (iv) the *non-isonymous synonyms* of a correct name, viz. names that upon their publication were not (or not primarily) intended to replace a previously published name. Some of these may later prove to have been based on the same type as another name, in which case they become obligate synonyms (typonyms).

Of a correct name the specific epithet is printed in bold-face type, followed by the author's citation and the date of publication. Then come the basionym and/or the recombinations of the latter, as well as name changes (epithets spaced) as far as they are devalidated names or have been validly published (provided no qualification to the contrary is added); each is likewise followed by the author's citation and the date of publication.

[1] Parts I–IX, XII, XIII were brought together in a photo-reprint edition to which an "Index" was added; Weinheim, J. Cramer, 1966.

Non-isonymous synonyms form separate entries; their epithets are spaced. These entries are arranged in chronological order according to the date of the first-published specific combination—validly published or devalidated. Where nomina anamorphosium are listed these come after the names based on the perfect state. Then follows a selection of misapplications (preceded by the indication "M."), in such cases as these are worth mentioning at all.

References.

It will be seen that there are three kinds of references. One of these comprises references consisting of nothing but a date. These references are not further elucidated and are not taken into consideration in the following explanation.

References consisting of a date not printed in italics and followed by additional information.—In connection with this category a distinction is made between 'books' and 'serials'. 'Books' are cited by a date or by a date and a strongly reduced title (and where necessary the number of the volume, fascicle, &c.) followed by the indication of such items as page, plate, figure, or, in the case of exsiccatae of series with printed labels, number ("No."). Titles of 'serials' (periodicals, journals) are abbreviated to not more than three letters and are usually followed by the number of the volume, both between brackets. In other respects the same pattern used for 'books' is adhered to. Where alternative page numbers are mentioned, the second is that of the reprint.

The abbreviated titles of both the 'books' and the 'serials' are listed and elucidated by their more usual, less strongly abbreviated form in the Chapter "Explanation of strongly reduced bibliographic references".

EXAMPLES:
Batsch 1786: 229 = Batsch, Elench. Fung. Cont. **1**: 229. 1786.
Pers. 1799 O. 2: 14 = Pers., Obs. mycol. **2**: 14. 1799.
L. Tul. 1853 (ASn III 9): 204 = L. Tul. *in* Ann. Sci. nat. (Bot.), sér. III, **9**: 204. 1853.

References to titles listed in the "Bibliography".—These are in the form of dates printed in italics.

Composition of entries.

To each entry of a correct name or of a non-isonymous synonym at least one reference to a description is added. If there is no more than one such reference this indicates that I know of no improved descriptions or illustrations. Usually this one reference is to the protologue of the name. If the protologue was thought to be a useful account of the taxon a reference to it is given separately from the nomenclative information.

The one or more references following the nomenclative information about an entry and separated from it by a dash (—), are those I regard as being of some importance to the knowledge of the taxon. These are arranged in chronological order and usually refer to the more representative descriptions and illustrations of

the taxon, and occasionally also to notes on other subjects, such as nomenclature, distribution, and cytology. The descriptions and notes referred to are not necessarily reliable. For instance, they may have been drawn up for a too-inclusively conceived taxon. They may even be the result of misconceptions that have so far not been recognized as such. Sometimes they contain only a minor addition to previous knowledge of the taxon but in that case very little is known about the latter and the information may conceivably be of some use to future workers.

These references are often followed by a generic or specific name between brackets. They were added to indicate the specific or infra-specific name under which the matter referred to was published, the corresponding epithet not being repeated. In cases where the same name would follow two or more consecutive references this name has been placed only after the last of the series, and it is completely deleted where it is the same for all references as the name given at the beginning of the entry.

The swung dash (~) avoids repetition in full of the preceding name (mostly in the case of homonyms), minus the author's citation.

EXAMPLE of an entry of a correct name:

"**eriophori** Bres. 1891 (Germany). — *Platygloea* Höhn. 1909; *Xenogloea* H. & P. Syd. 1919; ≡ *Septogloeum dimorphum* Sacc. 1892. — Bres. 1891 (Rm 13): 14 *pl.* 113 *fig.*; Höhn. 1909 (SbW 118): 1157 (*Kriegeria*); . . .." is to be read as follows:

"**Kriegeria eriophori** Bres. 1891 (basionym; type locality, Germany). — Synonyms: *Platygloea eriophori* (Bres.) Höhn. 1909; *Xenogloea eriophori* (Bres.) H. & P. Syd. 1919; *Septogloeum dimorphum* Sacc. 1892 (name change). — Descriptions, illustrations, &c.: Bres. *in* Rev. mycol. **13**: 14 *pl.* 113 *unnumbered f.* (as *Kriegeria eriophori*); Höhn. *in* Sber. Akad. Wiss. Wien (Math.-nat. Kl., Abt. I) **118**: 1157. 1909 (as *Kriegeria eriophori*); . . .."

A reference will often be found after the first member of an entry. This is to the author who reduced the name to synonymy. He may not have been the first to do this. Various reasons often make the citation of a later author preferable; he may have seen the type or have recently studied it microscopically. If such a reference fails to mention the taxon to which a name was reduced, this means that the name was reduced to the correct name (basionym or one of the isonyms). In other cases the name of the taxon is mentioned specially.

EXAMPLES of entries of non-isonymous synonyms:

[Aporpium caryae . . ..]

Polyporus argillaceus Cooke 1878 (G 7): 1 (U.S.A., California), not ~ (Murrill) Overh. 1926; fide Teix. & Rog. 1955 (M 47): 413" is to be read as follows:

Polyporus argillaceus Cooke *in* Grevillea **7**: 1. 1878 (basionym; type locality, U.S.A., California), not *Polyporus argillaceus* (Murrill) Overh. 1926; *fide* Teix. & Rog. *in* Mycologia **47**: 413. 1955, a synonym of *Aporpium caryae*."

[Tremellodendropsis tuberosum . . ..]

Clavaria gigaspora Cotton 1907 . . .; fide Coker 1923: 198 = *Lachnocladium semivestitum*. . . ." is to be read as:

Clavaria gigaspora Cotton 1907 . . .; *fide* Coker, Clav. U.S. 198. 1923, a synonym of *Lachnocladium semivestitum*, which in its turn is considered synonymous with *Tremellodendropsis tuberosum*.

Notes.

Numbers in bold-face type between brackets refer to the remarks assembled in the Chapter "Notes".

Special literature.

The references listed under this caption are to the titles in the "Bibliography". With few exceptions the items thus mentioned deal more or less *exclusively* with the subject, or part of the subject, for which they are cited. Papers or other works with a wider scope do not qualify as 'special literature'. For instance, the volume of the "Natürliche Pflanzenfamilien" containing the treatment of the 'Heterobasidiae' as well as that of various other groups is not included in the "Bibliography".

Abbreviations.

The following list does not contain the abbreviations of *titles of books and serials*. These will be found in the special Chapter "Explanation of strongly reduced bibliographic references". The abbreviations mentioned below do not include many of those that are in common use. Abbreviations of authors' names are not explained in this check list.

d.n.	devalidated name
Ft.	Farbtafel
f., *fs.*, *fig.*	figure(s); fig., unnumbered figure
M.	misapplication
No.	number, numéro, &c.
nom. anam.	nomen anamorphosis
nom. conf.	nomen confusum
nom. cons., rej	nomen conservandum, rejiciendum
nom. nud.	nomen nudum
nom prov.	nomen provisorium
n.v.p.	not validly published
pl., *pls.*, *plate*	plate(s); plate, unnumbered plate
repr.	reprint
St.	Schwarztafel
tpl.	text-plate
→	= & see . . .

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Check list of European hymenomycetous Heterobasidiae

SPECIAL LITERATURE (dealing more or less exclusively with all, or most of, the groups treated in this check list).—Barnett, *1937*; Bourdot & Galzin, *1909*, *1924*, *1928*; Brefeld, *1888a*; Christiansen, *1959*; Costa, *1857*; Costantin, *1888*; Donk, *1958b*; Heim, *1948–9*; Kobayasi & Tubaki, *1965*; Lowy, *1960*; Martin, *1942*, *1945*, *1952a*; Möller, *1895*; Neuhoff, *1924*, *1936b*; Pearson, *1928*; Pilát, *1957a*, *1957b*; Raitviir, *1963*, *1964*; E. L. Tulasne, *1853*; E. L. & C. Tulasne, *1871*, *1872*.

SEPTOBASIDIALES Couch ex Donk 1964

Septobasidiineae Rea 1927. Septobasidiaceae Rac. 1909.

SEPTOBASIDIUM Pat.

1892 (nom. cons.) [1958 (Ta 7): 243]. — Lectotype: *Septobasidium velutinum* Pat.

Gausapia Fr. 1825 (nom. rej.) [1958 (Ta 7): 196]. — Monotype: *Thelephora pedicellata* Schw.

Glenospora B. & Desm. 1849 (nom. rej.) [1958 (Ta 7): 197]. — Monotype: *Glenospora curtisii* B. & Desm.

Campylobasidium Lagerh. ex F. Ludw. 1892 (nom. rej.) [1958 (Ta 7): 193]. — Type: no species mentioned by name, perhaps corresponding to *Septobasidium lagerheimii* Couch.

Ordonia Rac. 1909 [1958 (Ta 7): 238]. — Monotype: *Ordonia orthobasidion* Rac.

Mohortia Rac. 1909 [1958 (Ta 7): 207]. — Monotype: *Mohortia tropica* Rac.

SPECIAL LITERATURE.—Couch, *1938*; von Höhnel, *1911*; Olive, *1943*; Patouillard, *1892a*, *1892b*.

alni Torrend 1913 (Portugal). — Couch 1938: 150 *pl. 21*, *pl. 70 fs. 1–5*; R. Heim 1957 C.E. 2: 37 *f. 82*.

cabralii Torrend 1913 (Portugal). — Couch 1938: 293 (Torrend's description).

carestianum Bres. apud Bres. & Sacc. 1897 (Italy). — *Mohortia* Höhn. 1911. — Couch 1938: 155 *pl. 20*, *pl. 74 fs. 1–12*.

cavarae Bres. 1905 (Italy, Sardinia). — Couch 1938: 173 *pl. 53 f. 15*, *pl. 100 fs. 6–7*.

fuscoviolaceum Bres. 1903 (Poland). — *Helicobasidium* Pilát 1957. — Couch 1938: 224 *pl. 45 fs. 4*, *5*, *pl. 107 f. 11*.

galzinii Bourd. 1922 (France). — Bourd. & G. 1928: 8 *f. 5*; Couch 1938: 160 *pl. 44 f. 9*, *pl. 100 fs. 3–5*.

marianii Bres. 1905 (Italy). — Couch 1938: 134 *pl. 17*, *pl. 26*, *pl. 72 fs. 6–11*.

orbiculare (Dur. & Lév.) Donk 1966 (**1**). — *Thelephora* Dur. & Lév. 1846–9: 16 *pl. 33 f. 7* (Tunisia).

Hypochnus michelianus Cald. 1860 (Italy) (n.v.); fide Cald. 1864 (Cci 1): 390. — *Corticium* Fr. 1874; *Septobasidium* Pat. 1897. — Cald. 1864 (Cci 1): 390 & 1864 (Cci 2): *pl. 1 f. 2* (*Hypochnus*); Kühner 1926 (Bot 17): 18 *fs. 2*, *3*; Couch 1938: 194 *pl. 44 fs. 1–4*, *pl. 100 fs. 8–11* (*Septobasidium*).

quercinum (Bagl.) Sacc. 1916 (**2**). — *Hypochnus* Bagl. 1872 (Italy) (n.v.) [cf. 1872 (NGi 4): 233]; ≡ *Corticium bagliettoanum* Fr. 1874; *Hypochnus* Sacc. 1888;

[Septobasidium]

Stereum Pat. 1900; *Septobasidium* Bres. 1905. — Bres. 1905 (Am 3): 164; Bourd. & G. 1928: 7 *f.* 3; Couch 1938: 241 *pl.* 49 *fs.* 4–6, *pl.* 105 *f.* 2 (*Septobasidium bagliettoanum*).

TREMELLALES Dumort. 1829

Auriculariales J. Schroet. 1885.

Aporpiales Bond. & M. Bond. 1960.

AURICULARIINEAE Engl. 1892

Ecchynineae Rea 1922.
Stilbaceae Fr. 1821 (n.v.p.).
Auriculariaceae Fr. 1838.
Stilbaceae Corda 1838, not ~ Kunth 1831.
Phleogenaceae Weese 1920.
Ecchynaceae Rea 1922.
Cystobasidiaceae Gäum. 1926.

Stilboideae S. F. Gray 1821.
Auricularioideae Sacc. 1888, not ~ Fr. 1825.
Platygloeoideae Lindau 1897.
Stypelloideae Lindau 1897.
Stilbeae Fr. 1825.
Auricularieae Fr. 1835 (1836).
Phleogeneae Killerm. 1928.

SPECIAL LITERATURE.—McNabb, *1965f.*

ACHROOMYCES Bon. (3, 4)

1851 [1958 (Ta 7): 165]. — Monotype: *Achroomyces tumidus* Bon.

Platygloea J. Schroet. 1887 [1958 (Ta 7): 240]. — Lectotype: "*Pl*[*atygloea*] *nigricans* (Fries 1822? *Agyrium n*[*igricans*] *a. minus*)" sensu J. Schroet.

Tachaphantium Bref. 1888 [1958 (Ta 7): 244]. — Monotype: *Tachaphantium tiliae* Bref.

SPECIAL LITERATURE.—Bandoni, *1957a*; Boudier, *1887*; von Höhnel, *1904*.

Platygloea **arrhytidiae** L. Olive 1951 (U.S.A., North Carolina). — L. Olive 1951 (BTC 78): 103 *fs.* 1–10; McNabb 1965 (TBS 48): 190.

disciformis (Fr.) Donk 1958 (**3**). — *Tremella* Fr. 1822 (Sweden); *Cryptomyces* Fr. 1849; *Epidochium* Sacc. 1884, misapplied; *Platygloea* Neuh. 1936. — L. Olive 1951 (BTC 78): 105, in obs., *fs.* 19–27: Bandoni 1957 (M 48): 831 *f.* 1; Pilát 1957 (SnP 13): 139 *f.* 3; M. P. Christ. 1959 (DbA 19): 18 *f.* 7 (*Platygloea*).

Dacrymyces pallens Fic. & Sch. 1823: 286 (Germany); fide Donk 1964 (PNA 67): 15.

Stictis tiliae Lasch 1844 (Germany) (**5**). — *Achroomyces* Höhn. 1904. — Höhn. 1904 (Am 2): 272 (*Stictis, Achroomyces*); Neuh. 1924 (BAM 8): 257 *fs.* 2, 4: 11, *tpl.* 1 (*Achroomyces*).

? *Achroomyces tumidus* Bon. 1851 (Germany) (**3**); cf. Höhn. 1904 (Am 2): 271 & Donk 1958 (Ta 7): 165. — *Myxosporium* Sacc. 1884. — Bon. 1851: 135 *pl.* 11 *f.* 231.

Achroomyces pubescens Riess 1853 (Germany); fide Höhn. 1904 (Am 2): 271, 273 = *Achroomyces tiliae* (Lasch) Höhn. — *Myxosporium* Sacc. 1892. — Riess 1853 (BZ 11): 135 *pl.* 3 *fs.* 21–23.

Platygloea nigricans J. Schroet. 1887 (Prussian Silesia, now Poland) (**6**); fide Höhn. 1904 (Am 2): 271, 273 = *Achroomyces tiliae* (Lasch) Höhn.; fide Romell in

[Achroomyces]
herb. & apud Neuh. 1936 (ABS 28[1]): 57 = *Tremella disciformis*. — J. Schroet. 1887: 384.

Tachaphantium tiliae Bref. 1888 (Germany): fide Höhn. 1904 (Am 2): 271, 273 = *Achroomyces tiliae* (Lasch) Höhn. — *Platygloea* Sacc. 1888. — Bref. 1888 U. 7: 79 *pl. 4 fs. 12–15* (*Tachaphantium*); Bourd. & G. 1928: 14 *f. 9* (*Platygloea*).

effusus (J. Schroet.) Mig. 1910–1. — *Platygloea* J. Schroet. 1887 (Prussian Silesia, now Poland). — Wak. & Pears. 1919 (TBS 6): 138 *fig.*; Bourd. & G. 1928: 12; M. P. Christ. 1959 (DbA 19): 19 *f. 9* (*Platygloea*).

Platygloea **fimetaria** (Schum. per Pers.) Höhn. 1917. — *Tremella* Schum. 1803 (Denmark) (d.n.) per Pers. 1822; *Helicobasidium* Boud. 1887; *Exobasidium* Lapl. 1894. — Boud. 1887 (JBM 1): 332 *fig.* (*Helicobasidium*); G. W. Mart. 1952 (SIa 19[3]): 96 *tpl. 3 f. 28*; Bandoni 1957 (M 48): 831; M. P. Christ. 1959 (DbA 19): 18 *f. 6* (*Platygloea*).

Platygloea fimicola J. Schroet. 1887 (Prussian Silesia, now Poland); fide Höhn. 1917 (Am 15): 293. — *Achroomyces* Mig. 1910–1. — J. Schroet. 1887: 384.

Platygloea **micra** Bourd. & G. 1924 (France). — Bourd. & G. 1928: 13 *f. 8.*

Platygloea **microspora** McNabb 1965 (Scotland). — McNabb 1965 (TBS 48): 191 *fs. 1A, B.*

Platygloea **peniophorae** Bourd. & G. 1909 (France). — Bourd. & L. Maire 1920 (BmF 36): 69; Wak. & Pears. 1923 (TBS 8): 219 *f. 5*; Bourd. & G. 1928: 13 *f. 7*; ? G. W. Mart. 1940 (M 32): 688 *f. 5*; L. Olive 1954 (BTC 81): 329 *fs. 5–12*; Bandoni 1957 (M 48): 826 *f. 7*; M. P. Christ. 1959 (DbA 19): 18 *f. 8*; Poelt & Oberw. 1962 (Bba 35): 94 *f. 14.*

Corticium ferax Ell. & Ev. 1897 (AN 31): 339 (Canada) (nom. conf.) (n.v.); fide D. P. Rog. 1949 (Fa 3): 489 = *Platygloea peniophorae* plus its substratum, a resupinate 'thelephoraceous' fungus.

Platygloea **sebacea** (B. & Br.) McNabb 1965. — *Dacrymyces* B. & Br. 1870 (nom. nud.), 1871 (England). — B. & Br. 1871 (AM IV 7): 430 *pl. 18 f. 2* (*Dacrymyces*); McNabb 1965 (TBS 48): 188 *fs. 1C–E* (*Platygloea*).

Platygloea miedzyrzecensis Bres. 1903 (Poland); fide McNabb 1965 (TBS 48): 188. — Bres. 1903 (Am 1): 113 *pl. 3 f. 3*; Bourd. & G. 1928: 13; L. Olive 1947 (M 39): 91 *f. 1.*

Platygloea **vestita** Bourd. & G. 1924 (France). — Bourd. & G. 1928: 14 *f. 10*; A. Pears. 1928 (TBS 13): 69 *f. 1*; M. P. Christ. 1959 (DbA 19): 19 *f. 10*; Reid & Austw. 1963 (GN 18): 332.

ATRACTIELLA Sacc. (7)

1886 [1958 (Ta 7): 167]. — *Atractiella* Sacc. apud Sacc. & Malbr. 1883 (nom. prov.). — Monotype: *Atractium brunaudianum* Sacc. apud Sacc. & Malbr.

brunaudiana (Sacc. apud Sacc. & Malbr.) Sacc. 1886. — *Atractium* Sacc. apud Sacc. & Malbr. 1883 (France). — Sacc. 1886 (SF 4): 579.

AURICULARIA Bull. per Mérat (**8**)

1821 [1958 (Ta 7): 168; 1963 (Ta 12): 165]. — *Auricularia* Bull. 1785 (nom. nud.) ex Juss. 1789, Bull. 1791 (d.n.). — Lectotype: *Auricularia tremelloides* Bull. — Sensu Brongn. 1822 (type) → *Hirneola*; sensu Fr. 1825 = *Stereum*; sensu Wahlenb., in part → *Exidia*.

Agarico-gelicidium Paul. 1793 (d.n.) [1958 (Ta 8): 166]. — Lectotype: *Agarico-gelicidium villosum* Paul.

Zonaria Roussel 1806 (d.n.), not ~ Drap. ex Web. & Mohr 1805 (Dictyotaceae, Phaeophyceae), not ~ Ag. 1817 (Dictyotaceae, Phaeophyceae, nom. cons.) [1958 (Ta 7): 250]. — Lectotype: "Zôn[aire] violette" [= *Auricularia tremelloides* var. *violacea* Bull.].

Oncomyces Kl. 1843 [1958 (Ta 7): 237; 1963 (Ta 12): 166]. — Lectotype: *Phlebia mesenterica* (Dicks. per S. F. Gray) Fr.

Patila Adans. 1763 (d.n.) per O.K. 1891, not *Patella* ~ Wigg. 1780 (d.n.) per Morg. 1902 (n.v.) (Pezizales) [1958 (Ta 7): 238]. — Lectotype: *Agaricum* ordo VIII species 5 Mich.

SPECIAL LITERATURE.—Colin & Quillet, *1932*; Donk, *1952*; Kobayasi, *1942*; Lowy, *1951*, *1952*; Martin *1943*.

mesenterica (Dicks. per S. F. Gray) Pers. 1822 (**9**). — *Helvella* Dicks. 1785 (Great Britain) (d.n.), not ~ Schaeff. 1774 (d.n.), not ~ Holm 1781 (d.n.); *Thelephora* Gmel. 1791 (d.n.); *Merulius* Schrad. 1794, Pers. apud Moug. & Nestl. 1815 (d.n.); *Stereum* (Dicks.) per S. F. Gray 1821; *Thelephora* Schleich. 1821; *Merulius* Steud. 1824; *Phlebia* Fr. 1828; *Oncomyces* Kl. 1832 (nom. nud.), 1843; *Patila* O.K. 1891; ≡ *Auricularia mesenteriformis* Brongn. 1824 ("Link," error?), Link 1833. — Bolt. 1791: 172 *pl. 172* (*Helvella*): Pers. 1801: 571 (*Thelephora*); Fr. 1828 E. 1: 154 (*Phlebia*); Bref. 1888 U. 7: 76 *pl. 4 fs. 1b, 2, 10, 11*; J. Schroet. 1888: 386; Neuh. 1924 (BAM 8): 260 *f. 4: 14*, *tpl. 2 fs. 1–8*; Bourd. & G. 1928: 15; Bres. 1932 (BIm 23): *pl. 1108*; Neuh. 1936 (ABS 28[1]): 56 *pl. 8* (*Auricularia*).

Helvella violacea With. 1776 (d.n.); fide Dicks. 1785 P.c. 1: 20. — [*Agaricus mesentericus violacei coloris* Dill. sensu Ray 1696: 336 & 1724: 22 (England) (**6g**)]; ≡ *Tremella violacea* Relh. 1785: 442 (typonym) (d.n.), not ~ Schrank & Moll 1785 (d.n.), not ~ Pers. 1801 (d.n.) & (Pers. per S. F. Gray) Pers. 1822; not ~ (Bull.) Pers. 1818 (d.n.).

Helvella corrugata With. 1776 (d.n.). — [*Fungus membranaceus expansus* Ray 1696: 334 & 1724: 18 (England)]; ≡ *Tremella corrugata* Relh. 1785 (typonym) (d.n.); *Auricularia* Sow. 1800 (d.n.). — Sensu Sow. 1800: *pl. 290* (*Auricularia*); fide Dicks. 1790 P.c. 2: 28 & Kl. 1832 (Li 7): 195.

Auricularia tremelloides Bull. 1786 (generic name unpublished), 1791 (France) (d.n.); fide Fr. 1828 E. 1: 154. — *Thelephora* DC. 1805 (d.n.); *Thelephora* (Bull.) per St-Am. 1821; *Auricularia* Mérat 1821. — Bull. 1786: *pl. 290*; 1791 H.: 278; Quél. 1888: 24.

Helvella mesenteriformis Vill. 1789: 1046 ("*mezenteriformis*") (France) (d.n.).

Agarico-gelicidium villosum Paul. 1793 T. 2: 96 (descr.), Index (Italy) (d.n.). — [*Agaricum squamosum, & Lichenosum* . . . Mich. 1729: 124 *pl. 66 f. 4*].

Exidia lobata Sommerf. 1827 [cf. Fr. 1828 E. 2: 34]: Fr. 1828 (Norway); fide Quél. 1888: 24 (var.). — *Auricularia* Fr. 1838; *Patila* O.K. 1891. — Mont. 1842 C.: 373; Berk. 1860: 272 *pl. 18 f. 1*; Bref. 1888 U. 7: 78 *pl. 4 f. 1a* (*Auricularia*).

CYSTOBASIDIUM (Lagerh.) Neuh.

1924 (BAM 8): 274, 277 [1958 (Ta 7): 176]. — *Iola* subgen. *Cystobasidium* Lagerh. 1898. — Monotype: *Iola lasioboli* Lagerh.

SPECIAL LITERATURE.—Lagerheim, *1898*.

lasioboli (Lagerh.) Neuh. 1924. — *Iola* Lagerh. 1898 (Norway). — Lagerh. 1898 (BsV 24[4]): 15 *pl. 3 fs. 8–13* (*Iola*).

EOCRONARTIUM Atk.

1902 ≡ *Eucronartium* Sacc. & D. Sacc. 1905 [1958 (Ta 7): 195]. — Monotype: *Eocronartium typhuloides* Atk.

Protopistillaria J. Rick 1933 [1958 (Ta 7): 241]. — Monotype: *Protopistillaria muscigena* J. Rick.

Musciclavus Velen. 1939 (nom. prov.) [1958 (Ta 7): 207]. — Monotype: *Clavaria falcatispora* Velen.

SPECIAL LITERATURE.—Atkinson, *1902*; Fitzpatrick, *1918a*, *1918b*; von Höhnel, *1909*; Stanley, *1940*.

muscicola (Pers. per Fr.) Fitzp. 1918. — *Clavaria* Pers. 1799 (Germany) (d.n.); *Pistillaria* (Pers.) per Fr. 1821; *Clavaria* Pers. 1822; *Typhula* Fr. 1838; *Ceratella* Big. & Guill. 1913. — Sensu Fr. 1838: 585 ("Nostra . . . tuberculo radicali caret") (*Typhula*); Fitzp. 1918 (Ph 8): 197, 212 *fs. 1–4*, *pl. 1*; 1918 (AJB 5): 397 *pls. 30–32*, cytology; Lloyd 1922 (LMW 7): 1108 *pl. 189 f. 2041*, notes; D. P. Rog. 1933 (SIa 15[3]): 17; Stanley, *1940* (n.v.); L. Olive 1948 (M 40): 586 *fs. 2: 1–11*; Y. Kobay. 1954 (Nag 4): 43 *f. 35*; Pilát 1957 (SnP 13): 133 *pl. 17* (*Eocronartium*).

Clavaria muscigena P. Karst. 1868 (NfF 9): 373 (Finland), not ∼ Schum. per Pers. 1822; fide Fitzp. 1918 (Ph 8): 211, 212. — *Typhula* P. Karst. 1881; *Eocronartium* Höhn. 1909. — Höhn. 1909 (SbW 118): 1462, 1463 (*Clavaria*, *Eocronartium*).

Anthina muscigena Speg. 1882 (South America); fide G. W. Mart. 1952 (SIa 19[3]): 87. — *Atractiella* Speg. 1910. — Speg. 1910 (ABA 20): 447 *f. 67* (*Atractiella*).

Eocronartium typhuloides Atk. 1902 (U.S.A., New York); fide Höhn. 1909 (SbW 118): 1463 = *Clavaria muscigena* P. Karst.; fide Fitzp. 1918 (Ph 8): 212. — *Helicobasidium* Pat. 1920. — Atk. 1902 (JM 8): 107.

Typhula bresadolae Sacc. & Dalla C. apud Sacc. 1916: 1256 (Italy).

Clavaria falcatispora Velen. 1939: 166 (Czechoslovakia); fide Pilát 1957 (SnP 13): 134 & Donk 1958 (Ta 7): 207.

Protopistillaria muscigena J. Rick 1933 (Eg 18): 210 (Brazil); fide G. W. Mart. 1952 (SIa 19[3]): 87.

HELICOBASIDIUM Pat. (**10**)

1885 ≡ *Helicobasis* Clem. & Sh. 1931 [1958 (Ta 7): 200]. — Monotype: *Helicobasidium purpureum* Pat.

[Helicobasidium]

Stypinella J. Schroet. 1887 [1958 (Ta 7): 244]. — Monotype: *Hypochnus purpureus* L. Tul.

Rhizoctonia DC. 1815 (nom. anam.) (d.n.) per Fr. 1821 [1962 (Ta 11): 97]. — Lectotype: *Sclerotium crocorum* Pers.

Thanatophytum Nees 1816 (nom. anam.) (d.n.) per S. F. Gray 1821 [1962 (Ta 11): 101]. — Monotype: *Sclerotium crocorum* Pers.

SPECIAL LITERATURE.—Boyer, *1895*; Buddin & Wakefield, *1924*, *1927*, *1929*; de Candolle, *1815*; Costantin, *1924*; Duggar, *1915*; Eriksson, *1915*; Faris, *1921*; Hering, *1962*; van der Lek, *1917*; Patouillard, *1885*; Peyronel, *1939*; Rostrup, *1886*; *Watson*, *1929*; *Whitney*, *1954*.

brebissonii (Desm.) Donk 1958 (**10**). — *Protonema* Desm. 1834 (France). — Desm. 1834 P.c.: No. 651; 1836 (ASn II 6): 242 (*Protonema*).

Hypochnus purpureus L. Tul. 1865 (France); fide L. Tul. 1865 (ASn V 4): 295 & Donk 1958 (Ta 7): 164. — *Stypinella* J. Schroet. 1887, not ~ (Pat.) Neuh. 1924; *Helicobasidium* Lind 1908 ["(Tul.) Pat."], not ~ Pat. 1885; *Helicobasis* Clem. & Sh. 1931. — Tul. 1872 (ASn V 15): 227 *pl. 10 fs. 1, 2* (*Hypochnus*); J. Schroet. 1887: 384 (*Stypinella*); Buddin & Wak. 1927 (TBS 12): 122 *pls. 11–14*; Vienn.-B. 1949: 1179 *fs. 536–538* (*Helicobasidium*).

Helicobasidium purpureum Pat. 1885 (France), not ~ (L. Tul.) Lind 1908; cf. Donk 1958 (Ta 7): 164, 201. — *Stypinella* Neuh. 1924, not ~ (L. Tul.) J. Schroet 1887; ≡ *Exobasidium asari* Quél. 1886 (not accepted as a distinct sp., cf. Quél. 1886: viii). — G. Boyer 1895 (AEM 8): repr. *pls. 8, 9*; Bourd. & G. 1928: 9; G. W. Mart. 1952 (SIa 19[3]): 98 *f. 31*; M. P. Christ. 1950 (Fr 4): 90 *f. 2*; 1959 (DbA 19): 20 *f. 11*.

Corticium lilacinum (Quél.) Big. & Guill. 1913, not ~ B. & Br. 1873, not ~ (J. Schroet.) Sacc. 1888. — *Corticium sanguineum* var. Quél. 1886 (n.v.p.), 1888: 9 (France).

Thelephora rhizoctoniae Frank 1897 (ZlH): 167–168 (n.v.) [cf. 1897 (CBa 4): 781] (Germany).

Hypochnus violaceus Erikss. 1913 (RgB 25): 28 *f. 4* (Sweden); fide Dugg. 1915 (AMo 2): 408 = *Rhizoctonia crocorum*. — The description covers (perhaps not even sterile) fruitbodies rather than the imperfect (or *Rhizoctonia*) state.

Tuber parasiticum Bull. 1789 (France) (nom. anam.) (d.n.); ≡ *Sclerotium crocorum* Pers. 1801 (d.n.); *Rhizoctonia* DC 1815 (d.n.); *Thanatophytum* Nees 1816 (d.n.); *Rhizoctonia* (Pers.) per Mérat 1821: Fr. 1822; *Thanatophytum* S. F. Gray 1821; *Sclerotium* Spreng. 1827; ≡ *Rhizoctonia violacea* Tul. 1851. — Bull. 1789: *pl. 456*; 1791 H.: 81 (*Tuber parasiticum*); Tul. 1851: 188 *pl. 8 f. 4*, *pl. 9*, *pl. 20 fs. 3–4*; Prillieux 1891 M. 2: 144 *fs. 282–287*; Lek 1917 (MRL 12): 49 *pls. 1–9* (*Rhizoctonia violacea*); Dugg. 1915 (AMo 2): 404 *fs. 1–4*; Faris 1921 (Ph 11): 414 (*Rhizoctonia crocorum*).

Tuber croci Dubois 1803: 150 (France) (nom. anam.) (d.n.); fide DC. 1815: 111 = *Rhizoctonia crocorum*.

[Helicobasidium]

Rhizoctonia medicaginis DC. 1815: 111 (France) (nom. anam.) (d.n.); fide Tul. 1851: 188 = *Rhizoctonia violacea*. — *Rhizoctonia* DC. per Mérat 1821: Fr. 1822; *Sclerotium* Spreng. 1827, not ~ Biv. 1816 (root-tubercles). — DC. 1815 (MMP 2): 216 *pl. 8*; Kühn 1858: 236, 245, xix *pl. 7 fs. 3–16*; Erikss. 1915 (ABS 14^{12}): 2 *fs. 1–3*, exclusive of perithecial 'state'.

Rhizoctonia rubiae Decaisne 1837: 55 (nom. anam.); fide Dugg. 1915 (AMo 2): 408 = *Rhizoctonia crocorum*.

Helminthosporium rhizoctonon Rab. 1854 (n.v.p.), 1855 Kl.: No. 1970 [cf. 1855 (BZ 13): 299 & 1855 (Fl 38): 271] (nom. anam. & ? conf.) (**11**); fide Mont. [cf. Kühn 1858: 245] = *Rhizoctonia medicaginis*. — ≡ *Rhizoctonia dauci* Rab. 1855 Kl. II: No. 74; fide Dugg. 1915 (AMo 2): 408, 409 = *Rhizoctonia crocorum*. — Kühn 1856 (BZ 14): 107.

Rhizoctonia asparagi Fuck. ex Erikss. 1915 (ABS 14^{12}): 16 *fs. 7–12* (Germany) (nom. anam.) (**12**); fide Dugg. 1915 (AMo 2): 408 = *Rhizoctonia crocorum*. — *Rhizoctonia asparagi* Fuck. 1865, 1870 (nom. nud.).

M.—*Rhizoctonia solani* Kühn sensu Thüm. 1881 M.u.: No. 1797; fide Dugg. 1915 (AMo 2): 409 = *Rhizoctonia crocorum*.

Incertae sedis

holospirum Bourd. 1922 (France). — Boud. & G. 1928: 10 *f. 6*.

Helicobasidium **sp.** — *Stypinella hypochnoides* Höhn. 1905 (Am 3): 324 (nom. conf.); fide D. P. Rog. 1950 (Fa 4): 38 = fruitbody of *Pellicularia flavescens* (Bon.) D. P. Rog. [sensu D. P. Rog. = *Uthatobasidium* spp.] overgrown by a species of *Helicobasidium* [sensu lato]. — *Helicobasidium* (Höhn.) Höhn. 1907, Lind 1908, Sacc. & Trott. 1912.

HELICOGLOEA Pat. apud Pat. & Lag. (**13**)

1892 [1958 (Ta 7): 201]. — Monotype: *Helicogloea lagerheimii* Pat. apud Pat. & Lag.

SPECIAL LITERATURE.—Baker, *1936*, *1946*; Boedijn, *1937*; Linder, *1929*.

graminicola (Bres.) G. E. Bak. 1936. — *Saccoblastia* Bres. 1903 (Poland). — G. E. Bak. 1936 (AMo 23): 90 *pl. 13 f. 74*.

lagerheimii Pat. apud Pat. & Lag. 1892 (Ecuador) (**14**, **22**). — *Platygloea* Sacc. & Syd. 1899. — G. E. Bak. 1936 (AMo 23): 72, 92 *pls. 7–12*, *pl. 13 fs. 77*, *78*, *pl. 14*; G. W. Mart. 1952 (SIa 19^3): 93; L. Olive 1948 (M 40): 587 *fs. 1: 8–20*; 1958 (BTC 85): 15; M. P. Christ. 1959 (DbA 19): 15 *f. 4*; McNabb 1964 (NZB 2): 405 *fs. 1d–g*.

Helicobasidium inconspicuum Höhn. 1908 (SbW 117): 1021 (Austria); fide G. E. Bak. 1946 (M 38): 631, 632.

Saccoblastia sebacea Bourd. & G. 1909 (France); fide G. E. Bak. 1936 (AMo 23): 92. — Wak. & Pears. 1923 (TBS 8): 218 *f. 4*; Bourd. & G. 1928: 5; D. P. Rog. 1933 (SIa 15^3): 18 *tpl. 2 fs. 23–26*.

[Helicogloea]

subardosiaca (Bourd. & G.) Donk 1966 (**14**). — *Saccoblastia sebacea* subsp. *S. subardosiaca* Bourd. & G. 1928 (France); *Saccoblastia* Linder 1929. — Bourd. & G. 1928: 5 (*Saccoblastia sebacea* subsp. ~).

HERPOBASIDIUM Lind (**15**)

1908 [1958 (Ta 7): 201]. — Holotype: *Gloeosporium filicinum* Rostr.

? *Glomerularia* Peck 1880 (RNS 32): 43 (nom. anam.), not ~ H. Karst. 1849 (BZ 7): 368 (Deuteromycetes, Moniliales); ≡ *Glomopsis* D. M. Hend. 1961 (NEd 23): 500. — Monotype: *Glomerularia corni* Peck. — (**16**).

SPECIAL LITERATURE.—Boudier, *1900*; Gould, *1945*; Jackson, *1935*; Lind, *1908*; Reimers, *1958*.

deformans Gould 1945 (U.S.A., Iowa). — Gould 1945 (IaJ 19): 317 *fs. 1–48*; G. W. Mart. 1952 (SIa 19[3]): 90 *tpl. 3 f. 29*; McNabb 1964 (NZB 2): 403 *fs. 1a–c.*

Glomopsis lonicerae (Dearn. & House) ex Donk 1966 (U.S.A., New York) (nom. anam.) (**16**); fide Gould 1945 (IaJ 19): 316. — *Glomerularia* Dearn. & House 1923 (nom. nud. & anam.); *Glomopsis* D. M. Hend. 1961 (nom. prov. & nud.).

filicinum (Rostr.) Lind 1908. — *Gloeosporium* Rostr. 1881 (Denmark); *Helicobasidium* Killerm. 1928. — Lind 1908 (ABS 7[8]): 7 *pls. 1, 2*; 1913: 343 *f. 28*; H. S. Jacks. 1935 (M 27): 554 *fs. 1, 3, 4*: Dennis & Wak. 1946 (TBS 29): 143 *f. 2*; Pilát 1957 (SnP 13): 136 *f. 2*; M. P. Christ. 1959 (DbA 19): 13 *f. 2*.

Exobasidium brevieri Boud. 1900 (BmF 16): 15 *pl. 1 f. 1* (France); fide Lind 1908 (ABS 7[8]): 2, 7.

struthiopteridis (Rostr.) Lind 1913. — *Gloeosporium* Rostr. 1889 (Denmark) (nom. anam.); *Uredinopsis* Lind 1908, misapplied, not ~ C. Störmer 1895 (Uredinales). — Lind 1913: 345 *pl. 6 fs. 72, 73*; M. P. Christ. 1959 (DbA 19): 13 *f. 3*.

HIRNEOLA Fr. (**8**)

1848 (nom. cons. prop.), not ~ Fr. 1825 ('Stereaceae'), not ~ Velen. 1939 ('Agaricales') [1958 (Ta 7): 202]. — Holotype: "*Peziza nigra* Sw." [= *P. nigricans* Sw. per Fr.].

Conchites Paul. 1791, 1793 (d.n.) [1958 (Ta 7): 174; 1963 (Ta 12): 166]. — Lectotype: "*Conchites auricula judae*".

Laschia Fr. 1830: Fr. 1832 (nom. rej. prop.), not ~ Jungh. 1838 ('Polyporaceae') [1958 (Ta 7): 206]. — Monotype: *Laschia delicata* Fr.

Seismosarca Cooke 1889 [1958 (Ta 7): 243]. — Monotype: *Seismosarca hydrophora* Cooke. — Sensu Lloyd = *Ductifera* Lloyd (extra-European).

Auriculariella (Sacc.) Clem. 1909 [1958 (Ta 7): 172]. — *Laschia* subgen. *Auriculariella* Sacc. 1888. — Lectotype: *Laschia delicata* Fr.

M.—*Auricularia* Bull. sensu Paul. 1808, Brongn. 1822 [1958 (Ta 7): 170; 1963 (Ta 12): 165].

SPECIAL LITERATURE.—Banerjee, *1956*, *1957*; de Brondeau, *1845*; Buchwald, *1928*; Donk, *1952*; Green, *1925*; Hauerslev, *1956*; Le Goc, *1913*, *1914*; Lowy, *1951*, *1952*.

auricula-judae (Bull. per St-Am.) Berk. 1860 (**17**, **18**). — *Tremella* Bull. 1788, (d.n.); *Peziza* Bull. 1791 (d.n.) per St-Am. 1821; *Tremella* Nocca & Balb. 1821,

[Hirneola]

Schleich. 1821; *Exidia* Fr. 1822, misapplied at least in part; *Auricularia* Wettst. 1885; ≡ *Tremella auricula* L. 1753 (Italy) (d.n.); *Peziza* L. 1767 (d.n.), not ~ Batsch 1783 (d.n.); *Merulius* Roth 1789 (d.n.); *Helvella* Schrank 1789 (d.n.); *Tremella* L. per Hook. 1821; *Peziza* Mérat 1821; *Exidia* Wallr. 1833; *Hirneola* H. Karst. 1880 (n.v.); *Auricularia* Underw. apud A. R. Northrop 1902; ≡ *Helvella sambucina* Scop. 1772 ("*sambuccina*") (d.n.); *Auricularia* (Scop.) per Sacc. 1873 ["(Scop.) Mart."], not ~ Mart. per Fic. & Sch. 1823, synisonym; ≡ *Auricularia tremellae* Wibel 1799 (d.n.); ≡ *Auricularia sambucina* Mart. 1817 (d.n.) per Fic. & Sch. 1823, Opiz 1823, not ~ (Scop.) per Sacc. 1873, synisonym; ≡ *Gyraria auricularis* S. F. Gray 1821; *Auricularia* G. W. Mart. 1943; *Hirneola* Donk 1949, not ~ (Fr.) Fr. 1848; ≡ *Auricularia sambuci* Pers. 1822; ≡ *Auricularia judae* Wahlenb. 1826, at least in part. — Bull. 1788: *pl. 427 f. 2* (*Tremella auricula-judae*); Corda 1839 I. 3: 35 *pl. 9 f. 137* (*Exidia a.-j.*); Berk. 1860: 289 *pl. 18 f. 7*; Bary 1866: 116 *f. 47*, basidia (*Hirneola a.-j.*); Bref. 1888 U. 7: 70 *pl. 4 fs. 3–9* (*Auricularia sambucina*); Sapp.-Tr. 1896 (Bot 5): 53 *fs. 3–5, 6C*; Bourd. & G. 1928: 15 (*Auricularia a.-j.*); Bres. 1932 (BIm 23): *pl. 1109* (*Hirneola auricula*); Banerjee 1956 (PSI 22): 318 *pl. 28 fs. 1, 2* (*Auricularia a.-j.*); Poelt & Jahn 1963: *pl. 26* (*Auricularia auricula*). — Sensu Fr., at least in part → *Exidia glandulosa* (forma).

Tremella caraganae (Pers.) ex H. Mart. [1812? (n.v.)], 1817 (d.n.). — [*Tremella auricula-judae* var. "*β. Trem. Caraganae*" Pers. 1801: 625 (Germany?)].

Merulius cucullatus Brond. 1828: 11 *pl. 2* (France), not ~ Jungh. 1838; fide Brond. 1845 (AlB 14): 123 = *Auricularia sambucina* Mart. (var.). — *Cantharellus* Duby 1830: Fr. 1832; *Auricularia* Quél. 1886; ≡ *Guepinia dubyi* Oud. 1920.

Auricula judae O.K. 1891 (n.v.p.) (Italy). — [*Fungus membranaceus* . . . "Auricula Judae vulgo". Batt. 1755: 25 *pl. 3 f. F*].

Auricularia lactea (Quél.) Big. & Guill. 1913. — *Auricularia auricula-judae* var. Quél. 1886: 207 (France).

KRIEGERIA Bres.

1891, not ~ Rab. 1878 (nom. prov.) ex Höhn. 1914 ("Winter") [1958 (Ta 7): 206]; ≡ *Xenogloea* H. & P. Syd. 1919 [1958 (Ta 7): 250]. — Monotype: *Kriegeria eriophori* Bres.

SPECIAL LITERATURE.—Bresadola, *1891*; Kao, *1956*.

eriophori Bres. 1891 (Germany). — *Platygloea* Höhn. 1909; *Xenogloea* H. &. P. Syd. 1919; ≡ *Septogloeum dimorphum* Sacc. 1892. — Bres. 1891 (Rm 13): 14 *pl. 113 fig.*; Höhn. 1909 (SbW 118): 1157 (*Kriegeria*); G. W. Mart. 1952 (SIa 19[3]): 88; Kao 1956 (M 48): 288 *fs. 1–40* (*Xenogloea*).

MYCOGLOEA L. Olive (**19**)

1950 [1958 (Ta 7): 207]. — Holotype: *Mycogloea carnosa* L. Olive.

SPECIAL LITERATURE.—von Höhnel, *1917*; Olive, *1950*.

[Mycogloea]

macrospora (B. & Br.) McNabb 1965 (**20**). — *Dacrymyces* B. & Br. (England). — B. & Br. 1873 (AM VI 11): 343 *pl. 7 f. 1* (*Dacrymyces*); McNabb 1965 (TBS 48): 187 *fs. 1F–H* (*Mycogloea*).

Fusisporium obtusum Cooke 1876 (G 5): 58 (Scotland); fide Höhn. 1917 (Am 15): 294 = *Mylittopsis carpinea* [sensu Höhn.] & McNabb 1965 (TBS 48): 187. — *Fusarium* Sacc. 1886.

M.—*Tremella fragiformis* var. *carpinea* A. & S. sensu Höhn. 1917 (*Mylittopsis carpinea*) (**20**). — Höhn. 1917 (Am 15): 294 (*Tremella fragiformis* var. *carpinea; Mylittopsis*).

PHLEOGENA Link

1833 [1958 (Ta 7): 239; 1963 (Ta 12): 166]. — Monotype: *Onygena faginea* Fr. per Fr.

Botryochaete Corda 1854 [1958 (Ta 7): 172], not ~ J. Rick 1959. — Holotype: *Onygena faginea* Fr. per Fr.

Ecchyna Fr. 1849 (nom. prov.) ex Boud. 1885 ("*Echyna*") [1958 (Ta 7): 173, 178]. — Monotype: an unnamed fungus.

M.—*Pilacre* Fr. [1958 (Ta 7): 239] sensu Bref. 1888.

SPECIAL LITERATURE.—Beckwith, *1929*; Boudier, *1888*; Shear & Dodge, *1925*; Weese, *1920*.

faginea (Fr. per Fr.) Link 1833 (**21**). — *Onygena* Fr. 1818 (Sweden) (d.n.) per Fr. 1829; *Pilacre* B. & Br. 1850; *Botryochaete* Corda 1854; *Ecchyna* Fr. 1857 (generic name n.v.p.), Boud. 1885. — B. & Br. 1850 (AM II 5): 365 *pl. 11 f. 5* (*Pilacre*); Corda 1854 I. 6: 47 *pl. 9 f. 95* [plate distributed 1846] (*Botryochaete*); Lloyd 1923 (LMW 7): 1207; 1925 (LMW 7): 1356, 1360 *pl. 336 fs. 3191, 3192, pl. 341 fs. 3231, 3232*; Shear & Dodge 1925 (JaR 30): 407 *tpl. 2* (*Pilacre*); Bourd & G. 1928: 16 (*Ecchyna*); Y. Kobay. 1954 (Nag 4): 45 *fs. 30C, 36*; Pilát 1957 (SnP 13): 146 *f. 6, pl. 18 f. b*; Reid & Austw. 1963 (GN 18): 332; McNabb 1964 (NZB 2): 408 (*Phleogena*).

Onygena decorticata Pers. 1799 (Germany) (d.n.) per Schw. 1822; cf. Fr. 1829: 209. — *Phleogena* G. W. Mart. 1944; ≡ *Cribaria onygena* Schum. 1803 (d.n.). — Pers. 1799 O. 2: 72 *pl. 6 f.* [9]; Hornem. 1806 (Fd 8 / F. 22): 8 *pl. 1309 f. 2*, Schumacher's drawing (*Onygena decorticata*); G. W. Mart. 1944 (SIa 18[3]): 69 *tpl. 3 f. 27* (*Phleogena decorticata*).

? *Pilacre divisa* Berk. 1855 N.Z.: 197 (New Zealand); cf. McNabb 1964 (NZB 2): 409.

Pilacre petersii B. & C. apud B. & Br. 1859 (U.S.A., Alabama); cf. L. Tul. 1865 (ASn V 4): 293–294. — *Ecchyna* Pat. 1900. — L. Tul. 1865 (ASn V 4): 293; Tul. 1872 (ASn V 15): 235 *pl. 12 fs. 5, 6* & cf. p. 228; Bref. 1888 U. 7: 27 *pls. 1–3*; Overh. 1911 (M 3): 165 *fs. 1–4, pl. 9 f. 4*.

? *Pilacre poricola* Richon 1878 (France). — *Ecchyna* Richon 1889. — Richon 1878 (BbF 24): 151 (*Pilacre*); 1889: 472 (*Ecchyna*).

PILACRELLA J. Schroet.

1887 [1958 (Ta 7): 240]. — Monotype: *Pilacrella solani* Cohn & Schroet. apud J. Schroet.

solani Cohn & Schroet. apud J. Schroet. 1888 (Prussian Silesia, now Poland). — *Pilacre* Sacc. 1892; *Ecchyna* Pat. 1900. — Cohn & Schroet. apud J. Schroet. 1888: 385.

SACCOBLASTIA A. Möll. (**22**)

1895 [1958 (Ta 7): 242]. — Lectotype: *Saccoblastia ovispora* A. Möll., often incorrectly identified with *Helicogloea lagerheimii* Pat. apud Pat. & Lag., fide Donk 1958 (Ta 7): 242.

SPECIAL LITERATURE.—Baker, *1936*, *1946*.

farinacea (Höhn.) Donk 1966 (**23**). — *Helicobasidium* Höhn. 1907 (Austria); *Helicogloea* D. P. Rog. apud G. W. Mart. 1944. — G. W. Mart. 1952 (SIa 19[3]): 94; M. P. Christ. 1959 (DbA 19): 16 *f. 5* (*Helicogloea*).

Saccoblastia pinicola Bourd. & G. 1909 (France); fide D. P. Rog. apud G. W. Mart. 1944 (SIa 18[3]): 66. — *Helicogloea* G. E. Bak. 1936. — Bourd. & G. 1928: 4 *f. 1* (*Saccoblastia*); G. E. Bak. 1936 (AMo 23): 89 *pl. 12 fs. 72*, *73*; 1946 (M 38): 632 (*Helicogloea*).

Stypinella killermannii Bres. apud Killerm. 1922 (Dba 15): 34 *pl. 1 f. 11* (Germany); fide L. Olive 1958 (BTC 85): 14. — *Helicobasidium* Bourd. & G. 1928, Killerm. 1928. — Pilát 1957 (SnP 13): 132 *pl. 15 f. b* (*Helicobasidium*).

STILBUM Tode per Mérat

1821: Fr. 1832 [1958 (Ta 7): 244; 1963 (Ta 12): 244]. — *Stilbum* Tode 1790 (d.n.). — Lectotype: *Stilbum vulgare* Tode.

SPECIAL LITERATURE.—Juel, *1898*.

vulgare Tode per Mérat 1821: Fr. 1832. — *Stilbum* Tode 1790 (Germany) (d.n.); *Botryonipha* O.K. 1891. — Sensu Corda 1837 I. 1: 20 *pl. 5 f. 272B*; Juel 1898 (BsV 24[9]): 13 *pl. (1)*.

TREMELLINEAE J. Schroet. 1885

Tremellaceae Fr. per Fr. 1821.
Hyaloriaceae Lindau 1897.
Sirobasidiaceae Lindau 1897.
Aporpiaceae Bond. & M. Bond. 1960.
Tremelloideae S. F. Gray 1821.
Tremellodontoideae P. Karst. 1876.
Sebacinoideae C. W. Dodge 1928.
Protomerulioideae C. W. Dodge 1928.
Tremelleae Fr. 1825.
Exidieae Rab. 1844.
Exidiopsideae Lindau 1897.
Stypelleae Lindau 1897.
Protohydneae Lindau 1897.
Sirobasidieae Killerm. 1928.
Hyalorieae Killerm. 1928.

SPECIAL LITERATURE.—Bandoni, *1959*; Bjørnekaer, *1944*; Cooke, *1891*; Costa, *1857*; Neuhoff, *1935–8*; Schieferdecker, *1942*, *1948*; Wells, *1957*.

APORPIUM Bond. & Sing. ex Sing.

1944 [1958 (Ta 7): 166]. — *Aporpium* Bond. & Sing. 1941 (nom. nud.). — Holotype: *Poria canescens* P. Karst.

SPECIAL LITERATURE.—Bondartsev & Bondartseva, *1960*; Macrae, *1956*; Teixeira & Rogers, *1955*.

caryae (Schw.) Teix. & Rog. 1955. — *Polyporus* Schw. 1832 (U.S.A., Pennsylvania); *Poria* Cooke 1886. — Overh. 1923 (M 15): 211 *fs. 6–7*, *pl. 21 f. 6*, *pl. 22 f. 1* (*Poria*); Teix. & Rog. 1955 (M 47): 410 *fs. 1–9*; Macrae 1956 (M 47): 813 *fs. 1–18*; Aoshima & al. 1962 (TmJ 4): 50 *fs. 1, 2*; Domański 1962 (Ffg 8): 510 *f. 1*; 1965 (Grz): 18 *fs. 1, 2*, *pl. 1 f. 1*, *pl. 8 fs. 1, 3*; McNabb 1964 (NZB 2): 411 *fs. 1j, k* (*Aporpium*).

? *Polyporus fendzleri* B. & C. 1868 ("*Fendleri*") (Venezuela); fide Lowe 1963 (M 55): 476. — *Polystictus* Cooke 1886; *Microporus* O.K. 1898; *Poria* Lowe 1947. — Lowe 1947 (Ll 10): 50.

Polyporus argillaceus Cooke 1878 (G 7): 1 (U.S.A., California), not ~ (Murrill) Overh. 1926; fide Teix. & Rog. 1955 (M 47): 413. — *Poria* Cooke 1886.

Poria canescens P. Karst. 1887 (Finland); fide Teix. & Rog. 1955 (M 47): 410. — *Aporpium* Bond. & Sing. ex Sing. 1944. — Bres. 1897 (AAR III 3): 79; Baxt. 1940 (PMi 25): 161 *pl. 5*.

Poria cordylina G. Cunn. 1947 (BPZ 72): 23, 39 *f. 17* (New Zealand); fide Teix. & Rog. 1955 (M 47): 411, 414.

Poria pilatii Bourd. 1932 ("Tchécoslovaquie", now U.S.S.R., Ukraine); fide Teix. & Rog. 1955 (M 47): 411, 414. — *Aporpium* Bond. & Sing. ex Bond. 1953. — Bourd. 1932 (BmF 48): 230 *pl. 25*; Pilát 1942 (ACE 3): 408 *f. 177*, *pl. 260*.

M.—*Poria gilvescens* Bres. sensu Overh. 1942; fide Teix. & Rog. 1955 (M 47): 414 & Lowe 1959 (Ll 21): 104. — Overh. 1942: 46; Lowe 1946: 35.

BASIDIODENDRON J. Rick

1938 [1958 (Ta 7): 172]. — Monotype: *Basidiodendron luteogriseum* J. Rick.

SPECIAL LITERATURE.—Luck-Allen, *1963*; Rogers, *1935*; Wells, *1960*; Whelden, *1935c*.

caesiocinereum (Höhn. & L.) Luck 1963. — *Corticium* Höhn. & L. 1908 (Germany); *Gloeocystidium* Bourd. & G. 1913; *Sebacina* D. P. Rog. 1935; *Bourdotia* Bourd. & G. 1928 (nom. prov.), Lundell 1938, Pil. & Lindtn. 1938. — Höhn. & L. 1908 (SbW 117): 1116 *f. 9* (*Corticium*); Bourd. & G. 1928: 261 (*Gloeocysti-*

[Basidiodendron]

dium); McGuire 1941 (Ll 4): 41 *fs. 106–108* (*Sebacina*); M. P. Christ. 1950 (Fr 4): 93 *f. 6*; Malenç. 1954 (BmF 70): 121 *f. 1D* (*Bourdotia*); M. P. Christ. 1959 (DbA 19): 25 *f. 15* (*Sebacina*); Wells 1960 (M 51): 552 *f. 5* (*Bourdotia*); Luck 1963 (CJB 41): 1036 *fs. 10–15* (*Basidiodendron*); Oberw. 1963 (Bba 36): 43 *f. 7* (*Bourdotia*).

Sebacina cinerella Bourd. 1922 (France); fide Donk apud D. P. Rog. 1935 (SIa 17): 37. — *Bourdotia* Bourd. & G. apud Bourd. & L. Maire 1920 (generic name n.v.p.), Bourd. & G. 1928. — Bourd. & L. Maire 1920 (BmF 36): 71; Bourd. & G. 1928: 49 *f. 27* (*Bourdotia*); D. P. Rog. 1933 (SIa 15[3]): 12 *tpl. 1 fs. 10–12* (*Sebacina*).

cinereum (Bres.) Luck 1963. — *Sebacina* Bres. 1900 (Italy); *Thelephora* Sacc. & Syd. 1902, not ~ (Pers.) per Fr.1821; *Bourdotia* Bourd. & G. 1928. — Bres. 1900 F.t. 2: 99 *pl. 210 f. 2* (*Sebacina*); Bourd. & G. 1928: 49 *f. 26* (*Bourdotia*); D. P. Rog. 1933 (SIa 15[3]): 12 *tpl. 1 fs. 4–6*; McGuire 1941 (Ll 4): 37 *fs. 91–94*; D. P. Rog. 1947 (PS 1): 96 (*Sebacina*); Wells 1957 (Ll 20): 56 *f. 8* (*Bourdotia*); L. Olive 1958 (BTC 85): 24; M. P. Christ. 1959 (DbA 19): 24 *f. 14* (*Sebacina*); Wells 1960 (M 51): 552 (*Bourdotia*); Luck 1963 (CJB 41): 1043 *fs. 36A–46* (*Basidiodendron*); Oberw. 1963 (Dba 36): 46 *f. 5* (*Bourdotia*).

Exidiopsis cystidiophora Höhn. 1905 (Am 3): 323 (Austria); fide Bourd. & G. 1928: 49.

Sebacina gloeocystidiata Kühner 1926 (France); fide Bourd. & G. 1928: 724. — Kühner 1926 (Bot 17): 26 *f. 1*.

Sebacina murina Burt 1926 (AMo 13): 337 (Mexico); fide D. P. Rog. 1935 (SIa 17): 41 & Luck 1963 (CJB 41): 1043, 1045.

Aleurodiscus guttulatus J. Rick 1934 (Bro 3): 165 (Brazil); fide Wells apud Lemke 1964 (CJB 42): 758.

Seismosarca stratosa Viégas 1945 (Bra 5): 243 *tpl. 7* (Brazil); fide Wells 1957 (Ll 20): 56, 58 & 1958 (M 50): 415. — *Sebacina* L. Olive 1954. — L. Olive 1954 (BTC 81): 334 (*Sebacina*).

Sebacina farinacea D. P. Rog. 1947 (PS 1): 97 *f. 1* (Hawaii); fide Wells 1957 (Ll 20): 56, 58.

deminutum (Bourd.) Luck 1963. — *Sebacina* Bourd. 1922 (France); *Bourdotia* Bourd. & G. 1928. — Bourd. & G. 1928: 50 *f. 28* (*Bourdotia*): D. P. Rog. 1933 (SIa 15[3]): 13 *tpl. 1 fs. 13–16*; 1935 (SIa 17): 41; Whelden 1935 (M 27): *503 f. 1*; McGuire 1941 (Ll 4): 39 *fs. 95–99* (*Sebacina*); Luck 1963 (CJB 41): 1041 *fs. 30–36* (*Basidiodendron*); Oberw. 1963 (Bba 36): 45 *f. 1* (*Bourdotia*).

Corticium involucrum Burt 1926 (AMo 13): 271 (U.S.A., Vermont); fide D. P. Rog. 1935 (SIa 17): 41, 43.

Bourdotia mucosa Bourd. & G. 1928: 51 (France); fide Luck 1963 (CJB 41): 1041.

eyrei (Wakef.) Luck 1963. — *Sebacina* Wakef. 1915 (England); *Gloeocystidium* Sacc. & al. apud Trott. 1925; *Bourdotia* Bourd. & G. 1928. — Wakef. 1915 (TBS 5):

[Basidiodendron]

126 (*Sebacina*); Bourd. & G. 1928: 50 (*Bourdotia*); D. P. Rog. 1933 (SIa 15[3]): 13 *tpl. 1 fs. 7–9*; McGuire 1941 (Ll 4): 40 *fs. 100–105*; L. Olive 1958 (BTC 85): 24; M. P. Christ. 1959 (DbA 19): 25 *f. 16* (*Sebacina*); Wells 1960 (M 51): 555 *f. 7* (*Bourdotia*); Luck 1963 (CJB 41): 1034 *fs. 1–9* (*Basidiodendron*); Oberw. 1963 (Bba 36): 45 *f. 3* (*Bourdotia*).

Gloeocystidium croceotingens Wakef. apud Bres. 1920 (Am 18): 48 (England); fide Bourd. & G. 1928: 50.

? *Basidiodendron luteogriseum* J. Rick 1939 (Bro 7): 74 (Brazil); cf. Luck 1963 (CJB 41): 1032.

grandinioides (Bourd. & G.) Luck 1963. — *Bourdotia* Bourd. & G. 1928 (France); *Sebacina* D. P. Rog. 1935. — Bourd. & G. 1928: 51 *f. 29* (*Bourdotia*); D. P. Rog. 1935 (SIa 17): 40 *tpl. 3 f. 18*; McGuire 1941 (Ll 4): 42 *fs. 109–112* (*Sebacina*); Wells 1960 (M 51): 558 *f. 8* (*Bourdotia*); Luck 1963 (CJB 41): 1039 *fs. 25–29* (*Basidiodendron*).

rimulentum (Bourd. & G.) Luck 1963. — *Bourdotia* Bourd. & G. 1928 (France). — Luck 1963 (CJB 41): 1037 *fs. 16–24*.

Bourdotia poeltii Oberw. 1963 (Germany). — Oberw. 1963 (Bba 36): 45 *f. 4*.

BOURDOTIA (Bres.) Trott.

1925 [1958 (Ta 7): 173]. — *Sebacina* subgen. *Bourdotia* Bres. 1908. — Monotype: *Sebacina galzinii* Bres.

SPECIAL LITERATURE.—Wells, *1960*.

galzinii (Bres.) Trott. 1925. — *Sebacina* Bres. 1908 (France); *Bourdotia* Bres. & Torr. apud Torrend 1913 (generic name n.v.p.), Trott. 1925; *Bourdotia pululahuana* subsp. *B. galzinii* Bourd. & G. 1928; *Exidiopsis* Killerm. 1928. — A. Pears. 1928 (TBS 13): 72 *f. 4* (*Sebacina*); Bourd. & G. 1928: 48 *f. 25* (*Bourdotia pululahuana* subsp. ~); McGuire 1941 (Ll 4): 33 *fs. 80–82* (*Sebacina*); Malenç. 1954 (BmF 70): 124 *f. 1F*; Wells 1960 (M 51): 546 *f. 1*; Oberw. 1963 (Bba 36): 43 *f. 11* (*Bourdotia*).

Bourdotia caesia Bres. & Torr. ex Trott. 1925 (Portugal); fide Wells 1960 (M 51): 546. — *Bourdotia* Bres. & Torr. apud Torrend 1913 (generic name n.v.p.); *Bourdotia pululahuana* subsp. *B. caesia* Bourd. & G. 1928; *Sebacina* Killerm. 1928, not ~ (Pers. per Fr.) Tul. 1871, not ~ Pat. 1889. — Bourd. & G. 1928: 48 (*Bourdotia pululahuana* subsp. ~); Donk 1931 (MmV 18–20): 106 (*Bourdotia*).

M.—*Tremella pululahuana* Pat. apud Pat. & Lag. sensu Bourd. & G. 1928: 48 (*Bourdotia*), as to European subspecies.

CRATEROCOLLA Bref. (**24**)

1888 [1958 (Ta 7): 176]. — Monotype: *Tremella cerasi* [Schum. sensu] Tul.

M.—*Ombrophila* Fr. sensu Quél. 1883 [1958 (Ta 7): 237], in part, not ~ Quél. 1892 (**26**).

[Craterocolla]

Ditangium P. Karst. 1867 (nom. anam.) [1962 (Ta 11): 83] (**24**). — Monotype: *Ditangium insigne* P. Karst.

Poroidea Göttinger ex Wint. 1884 (nom. anam.) [1962 (Ta 11): 95] (**24**). — Monotype: *Poroidea pithyophila* Göttinger ex Wint.

cerasi (Tul.) Bref. 1888 (**25**). — *Tremella* Tul. 1871 (France), excl. of basionym (viz. *Tremella cerasi* Schum. 1803, d.n., cited by error?); *Ditangium* Cost. & Duf. 1891; *Ombrophila* Lapl. 1894; *Exidia* Rick. 1918. — Tul. 1871 (JLS 13): 39; 1872 (ASn V 15): 229 *pl. 11* (*Tremella*); Bref. 1888 U. 7: 99 *pl. 6 fs. 9–21* (*Craterocolla*); Neuh. 1935 (PM 2a): 3 *Fl. 1 fs. 1–7*, *St. 1 f. 6D*, *St. 2 fs. 1, 2, 4*; 1936 (ABS 28[1]): 4; Schieferd. 1942 (ZP 21): *pl. 3 (2) figs.* & 1942 (ZP 21): 10 (*Ditangium*).

Ditangium insigne P. Karst. 1867 F.F.: No. 656 (Finland) (nom. anam.) (**24, 27**); fide Neuh. 1935 (PM 2a): 5 (forma). — Jo. Erikss. 1958 (Sbu 16[1]): 41, including perfect state; Donk 1962 (Ta 11): 83, nomenclature.

Dacrymyces conglobatus Peck 1880 (RNS 32): 37 *pl. 1 fs. 1–4* (U.S.A., New York) (nom. anam.); fide Peck 1887 (BNS 1[2]): 27, "apparently" *Ombrophila rubella* sensu Quél., Pat.; fide Neuh. 1935 (PM 2a): 4, 5 & L. Kenn. 1958 (M 50): 913.

Poroidea pithyophila Göttinger ex Wint. 1882 (RKF 1[1]): 275 *fs. 1–4* on p. 271 (*"pityophila"*) (Austria) (nom. anam.). — *Poroidea* Göttinger apud Saut. 1874 (nom. num.) (n.v.).

M.—*Ombrophila violacea* Fr. sensu Quél. 1873 (MMb II 5): 412 (**26**).

M.—*Helvella lilacina* Wulf. sensu Quél. 1873 (MMb II 5): 413 *pl. 5 f. 12* (*Ombrophila*) (**26**); fide Neuh. 1935 (PM 2a): 4.

M.—*Pezina rubella* Pers. sensu Quél. 1883 (Crf 11): 402 *pl. 11 f. 17* (*Ombrophila*) (**26**); fide Neuh. 1935 (PM 2a): 6. — Pat. 1883 T.a. 1: 68 *f. 157*, poor & only imperfect state (*Ombrophila*); Peck 1888 (BNS 1[2]): *pl. 1 fs. 1–4*, cf. pp. 27–28 (*Ombrophila*); Bourd. & G. 1928: 27 (*Ditangium*).

EICHLERIELLA Bres. (**28**)

1903 [1958 (Ta 7): 194; 1963 (Ta 12): 166]. — Lectotype: *Eichleriella incarnata* Bres.

SPECIAL LITERATURE.—Wells, *1962*.

alliciens (B. & C.) Burt 1915 (**28**). — *Stereum* B. & C. 1876 (Brazil); *Exidiopsis* Wells 1962. — Burt 1915 (AMo 2): 746 *pl. 27 f. 10* (*Eichleriella*); Wells 1962 (M 53): 354 *f. 13* (*Exidiopsis*).

Eichleriella incarnata Bres. 1903 (Poland); fide Wells 1962 (M 53): 354, 356. — *Hirneolina* Bres. apud Sacc. & D. Sacc. 1905. — Bres. 1903 (Am 1): 116 *pl. 3 f. 1*; 1932 (BIm 23): *pl. 1118 f. 1*.

Hirneolina crocata Pat. 1924 (BmF 40): 31 (Tonkin = North Viet-Nam); fide Wells 1962 (M 53): 354, 355.

[Eichleriella]

Eichleriella mexicana Burt 1926 (AMo 13): 334 (Mexico); fide Wells 1962 (M 53): 354, 355.

Hirneolina ubatubensis Viégas 1945 (Bra 5): 242 *tpl. 6* (Brazil); fide Wells 1962 (M 53): 354, 355.

[*Sebacina* **calcea** (Pers. per St-Am.) Bres. (**28**), see *Sebacina*.]

deglubens (B. & Br.) Lloyd 1913 (not accepted: n.v.p.), D. Reid 1957 (incomplete ref.: n.v.p.) (**29**). — *Radulum* B. & Br. 1875. — D. Reid 1957 (KB 12): 131, in obs.

Radulum kmetii Bres. 1897 (Hungary, now Czechoslovakia). — *Eichleriella* Bres. apud Bourd. & G. 1909; *Hirneolina* Sacc. & Trott. 1912. — Bres. 1897 (AAR III 3): 102; Lloyd 1915 (LMW 5, Rad.): 10 *f. 980* (*Radulum*); Bourd. & G. 1909 (BmF 25): 30 (*Eichleriella*).

M.—*Radulum spinulosum* B. & C. apud Berk. sensu Burt 1915 (AMo 2): 747 *pl. 27 f. 11* (*Eichleriella*), as to European specimens only; fide D. Reid 1957 (KB 12): 131. — Bourd. & G. 1928: 47 *f. 24*; Malenç. 1952 (BmF 68): 302 *fs. 1C, D*; M. P. Christ. 1959 (DbA 19): 33 *f. 25* (*Eichleriella*).

leucophaea Bres. 1903 (Poland). — *Hirneolina* Bres. apud Sacc. & D. Sacc. 1905; *Exidiopsis* Wells 1962. — Bres. 1903 (Am 1): 116 *pl. 3 f. 2*; Bourd. & G. 1928: 47; Bres. 1932 (BIm 23): *pl. 1118 f. 2* (*Eichleriella*); Wells 1962 (M 53): 352 *f. 12* (*Exidiopsis*).

Eichleriella schrenkii Burt 1915 (U.S.A., Texas); fide Wells 1962 (M 53): 353, 354. — *Hirneolina* Sacc. & Trott. apud Trott. 1925. — Burt 1915 (AMo 2): 744 *pl. 27 f. 8*.

EXIDIA Fr. (**30**)

1822 [1958 (Ta 7): 195; 1963 (Ta 12): 166]. — Lectotype: *Exidia glandulosa* (Bull. per St-Am.) Fr.

Spicularia Chev. 1826, not ~ Pers. 1822 (Moniliales) [1958 (Ta 7): 243]. — Lectotype: *Exidia glandulosa* (Bull. per St-Am.) Fr.

Ulocolla Bref. 1888 [1958 (Ta 7): 249]. — Lectotype: *Exidia saccharina* Fr.

Tremellochaete Raitv. 1964 (EAT 13[1]): 29. — Holotype: *Exidia japonica* Lloyd.

M.—*Auricularia* Bull. sensu Wahlenb. 1826: 993, in part [1958 (Ta 7): 171].

SPECIAL LITERATURE.—Neuhoff, *1926*; Silbernagel, *1937*, *1942*; Whelden, *1935b*.

albida (Huds. per Hook.) Bref. 1888, P. Karst. 1889 (**31**, **32**). — *Tremella* Huds. 1778 (England) (d.n.) per Hook. 1821: Fr. 1822, misapplied; *Gyraria* S. F. Gray 1821. — Sm. 1810 (EB 30): *pl. 2117*; Berk. 1836: 216 (*Tremella*); Bref. 1888 U. 7: 94 *pl. 5 f. 14*; Neuh. 1935 (PM 2a): 24 *Ft. 4 fs. 1–12*; 1936 (ABS 28[1]): 8, 18 (*Exidia*). — Sensu Fr. → *Exidia cartilaginea*; sensu Bon. → *Myxarium hyalinum*; sensu Berk. 1873 = *Ductifera pululahuana* (Pat.) Donk (extra-European); sensu Bourd. & G. 1909 → *Tremella candida*.

? *Tremella glauca* Pers. 1794 (NMB 1): 111 / 1797 T.: 31 (Germany) (d.n.) (**32**). — Schum. 1803: 438.

[Exidia]

Tremella thuretiana Lév. 1848 (France); fide Bres. 1908 (Am 6): 45 & Neuh. 1935 (PM 2a): 24, 26. — *Exidia* Fr. 1874. — A. Pears. 1921 (TBS 7): 55; Bourd. & G. 1928: 32; Donk 1931 (MmV 18–20): 113; Pilát 1953 (SnP 13): 98 *fs. 98–102*; Malenç. 1954 (BmF 70): 118 *f. 1B*; Reid & Austw. 1963 (GN 18): 330 (*Exidia*).

Tremella viscosa Fr. 1874: 691 (Great Britain) (**33**); fide Neuh. 1935 (PM 2a): 24, but cf. Reid & Austw. 1963 (GN 18): 330.

? *Exidia populina* (P. Karst.) Oud. 1920. — *Exidia albida* var. P. Karst. 1891 (Mfe 18): 73 (Finland).

M.—*Corticium viscosum* Pers. sensu B. & Br. 1854 (*Tremella*) (**33**); fide Neuh. 1935 (PM 2a): 24 = *Exidia albida*, but cf. Reid & Austw. 1963 (GN 18): 330. — B. & Br. 1854 (AM II 13): 406 *pl. 15 f. 4*; Boud. 1904–11: 93 *pl. 180* (*Tremella*); Rea 1922: 735 (*Exidia*). — Sensu Schum. = *Thelephora viscosa* Pers. 1822 (nomen dubium), not ~ (Pers.) per Fr. 1821 (**33**).

badio-umbrina (Bres.) Killerm. 1928, Neuh. 1936. — *Ulocolla* Bres. 1903 (Poland). — Neuh. 1936 (ABS 28[1]): 7, 14; 1936 (PM 2a): 47 *Ft. 7 fs. 4, 5* (*Exidia*).

brunneola P. Karst. 1889 (BFi 48): 450 (Finland).

cartilaginea Lund. & Neuh. apud Neuh. 1935 (Germany) (**31**). — Neuh. 1935 (PM 2a): 19 *Ft. 3 fs. 1–13, St. 3 fs. 1, 2*; 1936 (ABS 28[1]): 15 *pl. 3*; Raitv. 1963 (TÜT 136): 207 *f. 1: 4, fs. 3, 6.*

M.—*Tremella albida* Huds. sensu Fr. 1822: 215, as to description (**31**). — P. Karst. 1876 (BFi 25): 347.

cinnamomescens Raitv. 1963 (U.S.S.R., Komi). — Raitv. 1963 (TÜT 136): 208 *f. 1: 1, f. 2.*

Heterochaete **europaea** Höhn. 1903 (Am 1): 393 (Yugoslavia). — Bodm. 1952 (Ll 15): 230. — Cf. Neuh. 1936 (PM 2a): 22, 25, a possible synonym of either *Exidia villosa* or *E. albida.*

fulva Bres. & Torr. apud Torrend 1913 (Bro 11): 89 (Portugal).

glandulosa (Bull. per St-Am.) Fr. 1822 (**34**). — *Tremella* Bull. 1788 (France) (d.n.) per St-Am. 1821; *Exidia* Fr. 1822, in part; *Auricularia* Wahlenb. 1826; *Spicularia* Chev. 1826. — Sensu originario, Bull. 1788: *pl. 420 f. 1* & 1791 H.: 220 (*Tremella*) [fide Neuh. 1936 (ABS 28[1]): 10 & 1936 (PM 2a): 37, 41 = *Exidia truncata*]; Gillet *pl. 515*; Pat. 1900: 23 *f. 15* (*Exidia*). — Sensu Fr. 1822, in part → *Exidia plana.*

Tremella arborea Huds. 1778 (England) (d.n.) per Hook. 1821 (**37**). — *Exidia* Sacc. 1916. — Sm. 1812 (EB 34): *pl. 2448.*

Tremella atra O. F. Müll. 1782 (Denmark) (d.n.) (**38**); fide Neuh. 1936 (PM 2a): 41 (as to figure 2). — *Tremella* O. F. Müll. per Spreng. 1827, not ~ Schrank 1789 (d.n.); ≡ *Tremella rubra* Gmel. 1791 (d.n.; presumably an error). — O. F. Müll. 1782 (Fd 5 / F. 15): 5 *pl. 884*, in part (as to figure 2 only).

Tremella spiculosa Pers. 1799 (Germany) (d.n.); fide Pers. 1799 O. 2: 99 (citing *T. glandulosa* as syn.); fide Neuh. 1936 (PM 2a): 41 ("im wesentlichen") = *Exidia truncata.* — *Gyraria* (Pers.) per S. F. Gray 1821; *Tremella* Schleich. 1821,

[Exidia]

Pers. 1822; *Exidia* Sommerf. 1826. — L. Tul. 1853 (ASn III 19): 200 *pl. 11 fs. 2–8, pl. 12 f. 1* (*Exidia*). — Sensu Sommerf. = *Exidia plana*.

Tremella flaccida Sm. 1812 (England) (d.n.) per Steud. 1824; fide Neuh. 1936 (PM 2a): 41 = *Exidia truncata*. — Sm. 1813 (EB 35): *pl. 2452* (*Tremella*).

Tremella papillata Kunze 1817 (Germany) (d.n.) per Fic. & Sch. 1823; fide Neuh. 1936 (PM 2a): 41 = *Exidia truncata*. — *Auricularia* Fuck. 1875; *Exidia* Wint. 1882. — Kunze 1817 (MH 1): 86 (*Tremella*).

Tremella impressa Pers. 1822: 102 (Germany); fide Neuh. 1936 (PM 2a): 41. 43 = *Exidia truncata*. — *Exidia* Fr. 1822. — Sensu Bourd. & G. → *Exidia recisa*.

Exidia truncata Fr. 1822 (Sweden) (**34**). — *Tremella* Spreng. 1827; *Auricularia* Fuck. 1870. — Fr. 1822: 224; P. Karst. 1876 (BFi 25): 348; Bref. 1888 U. 7: 92 *pl. 5 f. 18*; Bourd. & G. 1928: 30; Bres. 1932 (BIm 23): *pl. 1111 f. 1*; Neuh. 1936 (ABS 28[1]): 6, 10; 1936 (PM 2a): 40 *Ft. 6 fs. 1–12, St. 4 fs. 2, 3*; Schieferd. 1942 (Her 3): 293 *pl. 2 f. 1* [= *2*]; Pilát 1957 (SnP 13): 191 *pl. 31, pl. 32 f. a, pl. 33 f. a* (*Exidia*).

Exidia strigosa (P. Karst.) P. Karst. 1889 (BFi 48): 451; fide Neuh. 1936 (PM 2a): 41 = *Exidia truncata*. — *Exidia glandulosa* subsp. *E. strigosa* P. Karst. 1876 (Finland).

Exidia grambergii Neuh. 1926 (ZP 5): 187, 188 (former East Prussia, now U.S.S.R., Russia); fide Neuh. 1936 (ABS 28[1]): 6 = *Exidia truncata* (forma). — Rea 1932 (TBS 17): 48 (*Exidia*); Neuh. 1936 (ABS 28[1]): 6; 1936 (PM 2a): 43 *Ft. 6 f. 12* (*Exidia truncata* f.).

M.—*Tremella auricula-judae* Bull. sensu Fr. 1822: 221 (*Exidia*), at least in part; fide Donk 1941 (BBu III 17): 161 & 1950 (Ta 7): 171 = *Exidia* sp. — Cf. *Exidia grambergii* Neuh. which was later on condisered a synonym of *E. truncata* (= *E. glandulosa*) by its author.

M.—*Tremella recisa* Ditm. sensu Bref. 1888 U. 7: 92 *pl. 5 f. 19* (*Exidia*); fide Neuh. 1935–6 (PM 2a): 8, 41 = *Exidia truncata*.

pithya (A. & S.) per Fr. 1822. — *Tremella auricula-judae* var. A. & S. 1805 ("*pitya*") (Germany) (d.n.). — Fr. 1822: 226; Neuh. 1924 (BAM 8): 269 *tpl. 4 fs. 1–11*, cytology; 1936 (ABS 28[1]): 5, 14; 1936 (PM 2a): 38 *Ft. 6 fs. 13–17, St. 3 fs. 3, 4* (*Exidia*).

Exidia friesiana P. Karst. in Thüm. 1878 M.u.: No. 1111 (with description); fide Neuh. 1936 (ABS 28[1]): 6 & 1936 (PM 2a): 38, 39.

Tremella olivaceo nigra Britz. 1895 (BCb 62) : 313 [*pl. 760 f. 28*], wrong spores (Germany); fide Neuh. 1936 (PM 2a): 38.

M.—*Tremella plana* Wigg. sensu Schleich. apud Secr. 1833 (**35**); fide Neuh. 1936 (PM 2a): 38 & Donk. — Secr. 1833 M. 3: 284.

plana (Wigg.per Schleich.) Donk 1966 (**35**). — *Tremella* Wigg. 1780 (Germany) (d.n.) per Schleich. 1821. — Wigg. 1780: 95 (*Tremella*). — Sensu Secr. → *Exidia pithya*.

Tremella nigricans With. 1776: 732 (d.n.) (**37**), not ~ (Bull. 1789 per Mérat). G. F. Re 1827, not ~ Poir. 1808 (generic name n.v.p.), not ~ (Fr.) Sacc.

[Exidia]

1888; ≡ *Tremella picea* Latourr. 1785 (d.n.) (typonym), not ~ Mass. 1901. — [*Tremella arborea nigricans, minus pinguis & fugax* Dill. 1741: 54 *pl. 10 f. 15* (England)].

? *Tremella atra* Schrank 1789: 562 (Germany) (d.n.), not ~ O. F. Müll. 1782 (d.n.).

Lichen fugax Wulf. 1789 (CoJ 3): 141 *pl. 12 f. 2* (Austria) (d.n.) (**37**). — *Parmelia* Ach. 1803 (d.n.); *Collema* Ach. 1810 (d.n.).

Tremella umbrina Schum. 1803: 438 (Denmark) (d.n.); fide Neuh. 1936 (PM 2a): 34 = *Exidia glandulosa* Neuh.

Exidia applanata Schw. 1832: 185 (U.S.A., Pennsylvania) (**36**).

? *Exidia spiculata* Schw. 1832 (U.S.A., Pennsylvania) (**36**); fide Neuh. 1936 (PM 2a): 33 = *Exidia glandulosa* Neuh. — Burt 1921 (AMo 8): 372; L. Olive 1947 (M 39): 96 *f. 5*.

Exidia plicata Kl. 1839: *pl. 475* (Germany); fide Neuh. 1935 (PM 2a): 33 = *Exidia glandulosa* Neuh. — *Tremella* Bail 1858. — Bail 1858: 17, 94 *pl. 22 fig.* (*Tremella*); Bref. 1888 U. 7: 91 *pl. 5 f. 5* (*Exidia*).

Tremella nigra Bon. 1851: 151 (Germany); fide Neuh. 1936 (PM 2a): 33 = *Exidia glandulosa* Neuh.

Tremella cinerea Bon. 1851 (Germany); fide Neuh. 1936 (PM 2a): 33 = *Exidia glandulosa* Neuh. — Bon. 1864 (AbH 8): 119.

? *Tremella myricae* B. & Cooke apud Cooke 1878 (G 6): 133 (U.S.A., Florida); fide Neuh. 1936 (PM 2a): 33 = *Exidia glandulosa* Neuh.

Exidia tenax Cooke 1879 (G 8): 57 (New Zealand); fide McNabb 1964 (NZB 2): 410 = *Exidia glandulosa* [sensu McNabb].

Exidia neglecta J. Schroet. 1888: 393 (Prussian Silesia, now Poland); fide Neuh. 1936 (ABS 28[1]): 6 & 1936 (PM 2a): 36 = *Exidia glandulosa* Neuh. (forma).

? *Exidia epapillata* Bref. 1888 U. 7: 87 *pl. 5 f. 1* (Germany); fide Neuh. 1936 (ABS 28[1]): 11 & 1936 (PM 2a): 33 = *Exidia glandulosa* Neuh.

Tremella faginea Britz. 1895 (BCb 62): 313 [*pl. 760 f. 29*] (Germany); fide Neuh. 1936 (MP 2a): 33, 34 = *Exidia glandulosa* Neuh.

Exidia glandulosa Neuh. 1936 (Sweden) (n.v.p.) (**34**). — Neuh. 1936 (ABS 28[1]): 6, 11; 1936 (PM 2a): 32 *Ft. 5 fs. 3–16, St. 4 fs. 1, 4.*

M.—*Tremella arborea* Huds. sensu Hoffm. 1787 V.c. 1: 37 *pl. 8 f. 1*; fide Neuh. 1936 (PM 2a): 34 = *Exidia glandulosa* Neuh.

M.—*Tremella atrovirens* Bull. sensu Schum. 1803: 438; fide Neuh. 1936 (PM 2a): 34 = *Exidia glandulosa* Neuh.

M.—*Tremella glandulosa* Bull. per St-Am. sensu Fr. 1822: 224 (*Exidia*), in part. — Bref. 1888 U. 7: 88 *pl. 5 fs. 2–4*; Bres. 1932 (BIm 23): *pl. 1112*; Schieferd. 1942 (Her 3): 293 *pl. 1 f. 1* (*Exidia*).

M.—*Tremella intumescens* Sm. sensu Bon. 1864 (AbH 8): 120.

M.—*Exidia repanda* Fr. sensu Bref.; fide Neuh. 1935 (PM 2a): 16, 18, 33 = *Exidia glandulosa* Neuh. — Bref. 1888 U. 7: 91 *pl. 5 fs. 6–11.*

[Exidia]

recisa (Ditm. per S. F. Gray) Fr. 1822 (**39**). — *Tremella* Ditm. 1813 (d.n.) per S. F. Gray 1821; ≡ *Peziza gelatinosa* Bull. 1789 (France) (d.n.) per Mérat 1821; *Exidia* Duby 1830, Wettst. 1885, not ∼ (Scop. per Fr.) Crouan 1867; ≡ *Tremella fungiformis* Roth 1802 (d.n.). — Bull. 1789: *pl. 460 f. 2*; 1791 H.: 239; Pers. 1801: 633 (*Peziza gelatinosa*); Roth 1802: 315 (*Tremella fungiformis*); Ditm. 1813 (StP 1): 27 *pl. 13* (*Tremella recisa*); Fr. 1822: 223; L. Tul. 1853 (ASn III 19): 200 *pl. 12 f. 2*; Bourd. & G. 1928: 29; Neuh. 1935 (PM 2a): 7 *Ft. 1 fs. 8–15*, *St. 2 f. 5*; 1936 (ABS 28[1]): 7, 9 *pl. 2 f. A*; Pilát 1957 (SnP 13): 193 *pl. 33 f. b*, *pl. 34 f. a* (*Exidia recisa*). — Sensu Bref. → *Exidia glandulosa*.

Tremella sagarum Retz. 1769 (SVH 30): 249 (Sweden) (d.n.); fide Fr. 1822: 223. — *Auricularia* (Retz.) per Wahlenb. 1826; *Exidia* Sacc. 1916. — Sensu Wigg. 1780: 95 = *Exidia glandulosa* [sensu stricto], fide Fr. 1832[Ind.]: 193.

Tremella boletiformis Sm. 1807 (England) (d.n.) per Purt. 1821; fide Fr. 1822: 223 & Neuh. 1935 (PM 2a): 8. — Sm. 1807 (EB 25): *pl. 1819*.

Tremella salicum Pers. 1822: 102 (Germany); fide Fr. 1822: 223 & Neuh. 1935 (PM 2a): 8. — Fic. & Sch. 1823: 315.

Exidia straminea Berk. 1851 (HJB 3): 19 *pl. 1 f. 4* (France); fide Neuh. 1935 (PM 2a): 7, 10.

M.—*Tremella impressa* Pers. sensu Bourd. & G. 1928: 30 (*Exidia*); fide Neuh. 1935 (PM 2a): 7 & 1936 (ABS 28[1]): 9.

repanda Fr. 1822 (Sweden). — *Tremella* Spreng. 1827; *Ulocolla* Bres. 1932. — Fr. 1822: 225; P. Karst. 1876 (BFi 25): 350; Bourd. & G. 1928: 31; Neuh. 1935 (PM 2a): 16 *Ft. 2 fs. 12–22*, *St. 2 fs. 3*, *8*; 1936 (ABS 28[1]): 7, 15; G. W. Mart. 1952 (SIa 19[3]): 81; Pilát 1957 (SnP 13): 194 *pl. 35*, *pl. 36 f. a* (*Exidia*). — Sensu Bref. → *Exidia plana*.

saccharina (A. & S.) per Fr. 1822. — *Tremella spiculosa* var. A. & S. 1805 (Germany) (d.n.); *Tremella* Bon. 1851, misapplied; *Ulocolla* Bref. 1888. — Fr. 1822: 225 (*Exidia*); Bref. 1888 U. 7: 95 *pl. 6 fs. 1*, *3–8* (*Ulocolla*); Bourd. & G. 1928: 32; Neuh. 1935 (PM 2a): 13 *Ft. 2 fs. 1–11*, *St. 2 f. 7*; 1936 (ABS 28[1]): 7, 8; Bjørnek. 1944 (Fr 3): 13 *fig.*: G. W. Mart. 1952 (SIa 19[3]): 81 (*Exidia*). — Sensu Bon. → *Dacrymyces saccharinus*.

M.—*Tremella foliacea* Pers. sensu Bref. 1878 U. 3: 183 *fs. 5*, *6*; fide Bres. 1900 F.t. 2: 98 & Neuh. 1935 (PM 2a): 13, 15 = *Ulocolla*/*Exidia saccharina*. — Bref. 1888 U. 7: 98 *pl. 6 f. 2* (*Ulocolla*).

umbrinella Bres. 1900 (Italy) (**40**). — Bres. 1900 F.t. 2: 98 *pl. 209 f. 2*; Bourd. & G. 1928: 30; Bres. 1932 (BIm 23): *pl. 1110*, Neuh. 1935 (PM 2a): 10 *Ft. 1 fs. 16–20*, *St. 2 f. 6*; 1936 (ABS 28[1]): 7; Pilát 1957 (SnP 13): 192 *pl. 28 f. b*.

villosa Neuh. 1935 (Germany). — Neuh. 1935 (PM 2a): 22 *Ft. 3 fs. 14–21*; 1936 (ABS 28[1]): 8, 17; Schieferd. 1942 (ZP 21): *pl. 3 fig.* & 1942 (ZP 21): 10; 1942 (Her 3): 294. — Cf. *Heterochaete europaea* Höhn. (under *Exidia*).

HETEROCHAETE Pat. apud Pat. & Lag. (**41**)

1892, not *Heterochaeta* DC. 1836 (Compositae) [1958 (Ta 7): 201]. — Lectotype: *Heterochaete andina* Pat. & Lag.

? *Hirneolina* (Pat.) Bres. apud Sacc. & D. Sacc. 1905 [1958 (Ta 7): 203]. — *Sebacina* sect. *Hirneolina* Pat. 1900. — Monotype: *Sebacina hirneoloides* Pat.

SPECIAL LITERATURE.—Bodman, *1952*.

macrochaete Bres. & Torr. apud Torrend (Portugal) (**42**). — Torrend 1913 (Bro 11): 86 *f.* 7; Bodm. 1952 (Ll 15): 219.

Cf. *Sebacina strigosa* Bourd. & G.

HETEROCHAETELLA (Bourd.) Bourd. & G. (**44**)

1928 [1958 (Ta 7): 202]. — *Sebacina* subgen. *Heterochaetella* Bourd. 1920. — Lectotype: *Heterochaete dubia* Bourd. & G.

SPECIAL LITERATURE.—Luck-Allen, *1960*.

brachyspora Luck 1960 (France). — Luck 1960 (CJB 38): 566 *fs. 37–47*; Oberw. 1963 (Bba 36): 48 *f. 8*.

dubia (Bourd. & G.) Bourd. & G. 1928. — *Heterochaete* Bourd. & G. 1909 (France); *Sebacina* Bourd. 1922. — Bourd. & G. 1928: 51 *f. 30* (*Heterochaetella*); D. P. Rog. 1933 (SIa 15[3]): 11 *tpl. 1 fs. 1–3*; McGuire 1941 (Ll 4): 31 *fs. 73, 74*; D. P. Rog. 1947 (PS 1): 96; L. Olive 1958 (BTC 85): 90; M. P. Christ. 1959 (DbA 19): 23 *f. 12* (*Sebacina*); Luck 1960 (CJB 38): 564 *fs. 23–36*; Oberw. 1963 (Bba 36): 46 *f. 8* (*Heterochaetella*).

Sebacina **psilochaete** (Bourd. & G.) L. Olive 1958. — *Heterochaetella dubia* var. Bourd. & G. 1928 (France). — Bourd. & G. 1928: 52 (*Heterochaetella dubia* var.). — Fide Luck 1960 (CJB 38): 569, a doubtful species of *Heterochaetella*.

MYXARIUM Wallr. (**43, 44**)

1833 [1958 (Ta 7): 207]. — Monotype: *Myxarium nucleatum* Wallr.

SPECIAL LITERATURE.—Wells, *1964a*, *1964b*.

hyalinum (Pers.) Donk 1966 (**45, 46**). — *Tremella* Pers. 1822: 105 (Germany); *Dacrymyces* Quél. 1888, not ~ Lib. 1837. — Sensu Quél. apud Bourd. & G. → *Dacrymyces caesius*; sensu Lloyd → ? *Dacrymyces tortus*.

Myxarium nucleatum Wallr. 1833: 260 (Germany); not *Tremella nucleata* Schw. 1822 ≡ *Exidia nucleata* (Schw.) Burt.; fide Neuh. 1936 (PM 2a): 29 = *Exidia gemmata*.

Tremella gemmata Lév. 1842 [cf. Neuh. 1936 (PM 2a): 30] (France) (**45**). — *Naematelia* Fr. 1874; *Exidia* Bourd. & L. Maire 1920. — Bourd. & L. Maire 1920

[Myxarium]

(BmF 36): 69 (*Exidia*); Kühner 1926 (Bot 17): 23 *fs. 4, 5* (*Tremella*); Neuh. 1936 (PM 2a): 29 *Ft. 4 fs. 13–25, Ft. 5 fs. 1, 2*; 1936 (ABS 28[1]): 8, 18; Schieferd. 1942 (ZP 21): *pl. 2 fig.* & 1948 (ZP 21): 9; 1942 (Her 3): 293 *pl. 1 f. 2* (*Exidia*).

Dacrymyces lilacinus Quél. 1888: 17 ("Quél. Ass. fr. 1884", apparently erroneous reference) (France); fide Quél., l.c. = *Tremella violacea* Pers. sensu L. Tul. (cited as syn.).

Exidia corrugativa Bref. 1888 U. 7: 93 *pl. 5 fs. 15–17* (**45**); fide Neuh. 1936 (PM 2a): 29, 31 = *Exidia gemmata.*

Tremella ilicis Boud. 1904–11 (France); fide Neuh. 1936 (PM 2a): 29, 31 = *Exidia gemmata.* — Boud. 1904–11: 92 *pl. 179.*

Exidia alboglobosa Lloyd 1925 (LMW 7): 1356 *pl. 336 f. 3195* (France); fide Neuh. 1936 (PM 2a): 31 = *Exidia gemmata* (forma).

M.—*Tremella albida* Huds. per Hook. sensu Bon. 1851: 151 *pl. 12 f. 246*; fide Neuh. 1936 (PM 2a): 29 = *Exidia gemmata.*

M.—*Tremella violacea* Pers. sensu L. Tul. 1853 (**69**); fide Neuh. 1936 (PM 2a): 29, 31 & 1936 (ABS 28[1]): 19 = *Exidia gemmata* (forma). — L. Tul. 1853 (ASn III 19): 198 *pl. 12 fs. 3–12.*

M.—*Tremella nucleata* Schw. sensu Berk. 1860: 290 (*Naematelia*), as to European material (**46**); fide Neuh. 1936 (PM 2a): 29, 31 = *Exidia gemmata.* — L. Tul. 1853 (ASn III 19): 204 (unnamed species compared with *Naematelia nucleata*); Rea 1922: 735; Bourd. & G. 1928: 33; Donk 1931 (MmV 18–20): 114 (*Exidia*).

M.—*Naematelia globulus* Corda sensu Lloyd 1922 (LMW 7): 1149 *pl. 213 f. 2226*; fide Neuh. 1936 (PM 2a): 29, 31 = *Exidia gemmata.*

PROTODONTIA Höhn. (**44**, **47**)

1907 [1958 (Ta 7): 241]. — Monotype: *Protodontia uda* Höhn.

SPECIAL LITERATURE.—Martin, *1932*, *1953*; Whelden, *1937*.

? **fascicularis** (A. & S. per Fr.) Pilát 1957 (incomplete ref.: n.v.p.) (**48**). — *Hydnum* A. & S. 1805 (d.n.) per Fr. 1821, not *H. fascicularia* B. & C. apud Berk. 1873 (also spelt "fasciculare"); *Mucronia* Fr. 1861; *Mucronella* Fr. 1874; *Hericium* Banker 1906; *Protohydnum* Bres. 1920. — A. & S. 1805: 269 *pl. 10 f. 9* (*Hydnum*); Fr. 1874: 629 (*Mucronella*); sensu Bres. 1920 (Am 18): 63; 1932 (BIm 23): *pl. 1117* (*Protohydnum*).

? **filicina** Parm. 1962 (Estonia) (**49**). — Parm. 1962 (BMs 15): 125 *fs. 1, 2.*

piceicola (Kühner ex Bourd.) G. W. Mart. 1952. — *Protohydnum* Kühner 1926 (as a var. of *P. lividum:* n.v.p.) ex Bourd. 1932 (France). — Kühner 1926 (Bot 17): 30 *fs. 6, 7*; Bourd. 1932 (BmF 48): 205; Neuh. 1936 (ABS 28[1]): 26 *pl. 5* (*Protohydnum*); G. W. Mart. 1952 (SIa 19[3]): 63; Pilát 1957 (SnP 13): 201 *f. 10* (*Protodontia*).

subgelatinosa (P. Karst.) Pilát 1957. — *Hydnum* P. Karst. 1882 (Finland); *Proto-*

[Protodontia]

hydnum Lundell 1947. — Lundell 1947 (LNF 29–30): 21 No. 1433 (*Protohydnum*).

Protohydnum lividum Bres. 1903 (Poland): fide Lundell 1947 (LNF 29–30): 21 No. 1433. — Bourd. & G. 1928: 34; Bourd. 1932 (BmF 48): 205.

uda Höhn. 1907 (Austria). — Höhn. 1907 (SbW 116): 83; Wak. & Pears. 1920 (TBS 6): 69 *fig.* — Sensu G. W. Mart. 1932 (M 24): 508 *fs. 1, 2*; 1952 (SIa 19[3]): 63 *f. 15*; American material, perhaps a different sp. fide Donk apud G. W. Mart. 1953 (JWS 43): 18.

PSEUDOHYDNUM P. Karst.

1868 [1958 (Ta 7): 241]. — Monotype: *Hydnum gelatinosum* Scop. per Fr.

Hydnogloea Currey apud B. & Br. 1871 [1958 (Ta 7): 204]. — Monotype: *Hydnum gelatinosum* Scop. per Fr.

Tremellodon (Pers.) Fr. 1874 [1958 (Ta 7): 248; 1963 (Ta 12): 167]. — *Hydnum* sect. *Tremellodon* Pers. 1825. — Monotype: *Hydnum gelatinosum* Scop. per Fr.

SPECIAL LITERATURE.—Currey, *1861*; Hagerup, *1944*; Whelden, *1937*.

gelatinosum (Scop. per Fr.) P. Karst. 1868. — *Hydnum* Scop. 1772 (Yugoslavia, Carniola) (d.n.) per Fr. 1821, not ~ Latourr. 1785 (d.n.); *Steccherinum* S. F. Gray 1821; *Exidia* Crouan 1867, not ~ (Bull. per Mérat) Duby 1830; *Hydnogloea* Currey ex Berk. 1873("*Hydnogloeum*"); *Tremellodon* Fr. 1874; ≡ *Hydnum spongiosum* D. Dietr. 1847 D.F. 8: 89 *pl. 282*. — Currey 1861 (JLS 5): 181 *fig.* (*Hydnum*); J. Schroet. 1888: 397; A. Möll. 1895 (BMS 8): 133 *pl. 5 f. 34*; Boud. 1904–11: 91 *pl. 178*; Coker 1920 (JMS 35): 152 *pl. 43, pl. 59 f. 4*; Bres. 1932 (BIm 23): *pls. 1115, 1116* (*Tremellodon*); G. W. Mart. 1948 (Ll 11): 117; Pilát 1957 (SnP 13): 204 *fs. 11, 12, pl. 38 f. b, pl. 37*; Poelt & Jahn 1964: *pl. 24 fig.*: McNabb 1964 (NZB 2): 412 *fs. 1l, m* (*Pseudohydnum*).

Hydnum crystallinum O. F. Müll. 1777 (d.n.); fide Fr. 1821: 407. — *Tremellodon* (O. F. Müll.) per Quél. 1888 (*"cristallinum"*); [≡ *Echinus crystallinus gelatinosus* Haller 1768 (Switzerland)]; ≡ *Hydnum gelatinosum* Latourr. 1785 (d.n.) (typonym), not ~ Scop. 1772 (d.n.). — O. F. Müll. 1777 (Fd 4 / F. 12): 6 *pl. 717 (Hydnum)*; Bourd. & G. 1928: 33 (*Tremellodon*).

Hydnum auriculatum Fr. 1838: 513 (Sweden); fide Neuh. 1936 (ABS 28[1]): 26. — *Tremellodon* Fr. 1874.

Auricula totarae Lloyd 1920 (LMW 6): 935 *pl. 150 fs. 1708, 1709* (generic name n.v.p. [cf. Donk 1957 (Ta 6): 21]) (New Zealand); fide McNabb 1964 (NZB 2): 412, 413.

SEBACINA Tul. (**50**)

1871 [1958 (Ta 7): 242]. — Lectotype: *Corticium incrustans* Pers.

Exidiopsis (Bref.) A. Möll. 1895 [1958 (Ta 7): 196] (**50**). — *Exidia* subgen. *Exidiopsis* Bref. 1888. — Monotype: *Exidiopsis effusa* Bref.

SPECIAL LITERATURE.—Ervin, *1957*; McGuire, *1941*; Oberwinkler, *1963*, *1964*; Rogers, *1936*; Wells, *1959*, *1962*; Whelden, *1935c*; Wittlake, *1938*.

[Sebacina]

banatica Pil. & Lindtn. 1938 (Yugoslavia). — Pilát 1957 (SnP 13): 156 *pl. 21 f. a.*

caesia Pat. 1889 (France), not/an ~ (Pers. per Fr.) Tul. 1871, not ~ Killerm. 1928; (**51**). — Pat. 1889 T.a. 2: 67 *f. 681.*

M.—*Corticium caesium* Pers. sensu Bourd. & G. 1928: 41 (*Sebacina laciniata* subsp. *S. caesia*) (**51**). — Cf. A. Pears. 1921 (TBS 7): 55.

caesia (Pers. per Fr.) Tul. sensu M. P. Christ. 1959 (**51**). — M. P. Christ. 1959 (DbA 19): 27 *f. 19.*

calcea (Pers. per St-Am.) Bres. 1898 (**28**, **52**). — *Thelephora* Pers. 1801 (d.n.) per St-Am. 1821, Pers. 1822: Fr. 1828, in part ("c. albido-fuscescens"); *Auricularia* Mérat 1821; *Corticium* Fr. 1838; *Exidiopsis* Wells 1962. — Bres. 1898 F.t. 2: 64 *pl. 175*; Wakef. 1915 (TBS 5): 126; Bourd. & G. 1928: 44; Bres. 1932 (BIm 23): *pl. 1124*; Wittlake 1938 (SIa 17): 351 *tpls. 20, 21*; McGuire 1941 (Ll 4): 23 *fs. 5, 6, 46–49*; Malenç. 1954 (BmF 70): 120 *f. 1C* (*Sebacina*); Wells 1962 (M 53): 348 *f. 11* (*Exidiopsis*); Oberw. 1963 (Bba 36): 49 *f. 19* (*Sebacina*). — Sensu Bourd. & G. (as "*C*[*orticium*] *calceum* Fr.") = *Corticium suecicum* Litsch. = *Sistotremastrum suecicum* Jo. Erikss.

Xerocarpus farinellus P. Karst. 1882 (BFi 37): 139 (Finland); fide Romell 1895 (BoN): 72 = *Corticium abietis* ("vix dubie hujus loci"); & fide Bres. 1898 F.t. 2: 64, Höhn. & L. 1906 (SbW 115): 1567, & Burt 1915 (AMo 2): 760. — *Corticium* Sacc. 1888.

Sebacina letendreana Pat. 1885 (France); fide Bourd. & G. 1928: 45. — *Thelephora* Sacc. 1888; *Heterochaete* J. Rick 1933. — Pat. 1885 (Rm 7): 152.

Corticium abietis (Fr.) Romell 1895; fide Bres. 1898 F.t. 2: 64 & Burt 1915 (AMo 2): 760. — *Thelephora acerina* forma Fr. 1821 (Sweden). — Romell 1895 (BoN): 72 (*Corticium*).

calospora (Bourd. & G.) Bourd. & G. 1928. — *Exidiopsis* Bourd. & G. 1924 (France). — Bourd. & G. 1928: 46 *f. 23*; McGuire 1941 (Ll 4): 22 *fs. 41–43*; G. W. Mart. 1931 (SIa 13[5]): 9 *tpl. 1 fs. 2–6*; Boid. 1957 (BTl 92): 279 *f. 2* (*Sebacina*); Wells 1962 (M 53): 328 *f. 1* (*Exidiopsis*); Warc. & Talb. 1962 (TBS 45): 498 *f. 1* (*Sebacina*).

carneola Bres. 1926 (Str II 7): 64 (France). — Insufficiently described.

Hypochnus **cinereus** Bon. 1851: 159 *pl. 12 f. 249* (Germany). — Insufficiently described. Cf. *Sebacina grisea.*

crozalsii Bourd. & G. 1928: 38 (France). — Delécluse 1953 (BmF 53): 135 *fs. 1–4*; Wells 1962 (M 53): 360. — Fide Wells, l.c. = *Sebacina podlachica.*

dimitica Oberw. 1963 (Germany). — Oberw. 1963 (Bba 36): 53 *f. 22.*

effusa (Bref. ex Sacc.) Pat. 1900 (**53**). — *Exidiopsis* Bref. 1888 (as a sp. of *Exidia*: n.v.p.) (Germany); *Thelephora* (Bref.) ex Sacc. 1888; *Exidiopsis* A. Möll. 1895. — Bref. 1888 U. 7: 94 *pl. 5 fs. 20–22* (*Exidiopsis*); Maire 1902 (BmF 18, S.): 67 *pl. 1 fs. 5–15*; M. P. Christ. 1959 (DbA 19): 32 *f. 23*; Oberw. 1963 (Bba 36): 52 *f. 17* (*Sebacina*).

Sebacina quercina (Vuill.) ex Maire 1902 (BmF 18, S.): 66; fide Bourd. & G.

[Sebacina]

1928: 44 = *Sebacina uvida* [sensu Bres.]. — *Exidiopsis* Vuill. 1890 (France) (generic name n.v.p.).

? *Sebacina peritricha* Bourd. & G. 1909 (France) (**53**). — *Exidiopsis* Sacc. & Trott. 1912. — Bourd. & G. 1928: 44 (*S. uvida* subsp. ~).

M.—*Thelephora uvida* Fr. sensu Bres. 1891 (*Sebacina*); fide Ludell 1947 (LNF 29–30): 20 No. 1432. — Bourd. & G. 1909 (BmF 25): 26; 1928: 44 (*Sebacina*).

epigaea (B. & Br.) Neuh. 1931. — *Tremella* B. & Br. 1848 (England); *Sebacina* Lloyd 1925 (n.v.p.). — B. & Br. 1848 (AM II 2): 266 *pl. 9 f.* 3 (*Tremella*); Bourd. & G. 1928: 39 *f. 19* (*Sebacina laciniata* subsp. ~); Rea 1932 (TBS 17): 48; Whelden 1935 (M 27): 503 *f. 3*; McGuire 1941 (Ll 4): 16 *fs. 3, 4, 15–21*; L. Olive 1947 (M 39): 100 *f. 7*; Lundell 1954 (LNF 45–46): 20 No. 2242; Malenç. 1958 (BmF 73): 290 *f. 1*; M. P. Christ. 1959 (DbA 19): 26 *f. 18*; Oberw. 1963 (Bba 36): 53 *f. 21* (*Sebacina*).

Sebacina ambigua Bres. 1903 (Poland); fide McGuire 1941 (Ll 4): 16, 29. — *Thelephora* Sacc. & D. Sacc. 1905. — Bres. 1903 (Am 1): 116 (*Sebacina*); Bourd. & G. 1928: 40 (*S. laciniata* subsp. ~).

Sebacina atrata Burt 1915 (AMo 2): 765 *f. 7, pl. 27 f. 21* (U.S.A., Massachusetts); fide McGuire 1941 (Ll 4): 16, 17.

Sebacina cokeri Burt 1926 (U.S.A., North Carolina); fide McGuire 1941 (Ll 4): 16, 17. — Coker 1920 (JMS 35): 157 *pl. 47, pl 61 fs. 1–5* (*Sebacina* sp.).

fugacissima Bourd. & G. 1909 (France). — *Exidiopsis* Sacc. & Trott. 1912, Ervin 1957. — A. Pears. 1921 (TBS 7): 56; Bourd. & G. 1928: 42; McGuire 1941 (Ll 4): 30 *fs. 54–57* (*Sebacina*); Wells 1962 (M 53): 337 *f. 5* (*Exidiopsis*).

Exidiopsis **glaira** (Lloyd) Wells 1957. — *Tremella* Lloyd 1919 (Sweden). — Wells 1962 (M 53): 331 *f. 3* (*Exidiopsis*).

Sebacina opalea Bourd. & G. 1924 (France); fide Wells 1962 (M 53): 331, 332. — Bourd. & G. 1928: 42 *f.* [*21*]; Neuh. 1936 (ABS 28[1]): 28; McGuire 1941 (Ll 4): 20 *fs. 26–34*; M. P. Christ. 1959 (DbA 19): 28 *f. 20*.

gloeophora Oberw. 1964 (Germany). — Oberw. 1964 (NH 7): 495 *pl. 33 fs. 8–13*.

grisea (Pers.) Bres. 1908 (**53**). — *Thelephora* Pers. 1822 (Europe); *Exidiopsis* Bourd. & L. Maire 1920. — Sensu Bres. 1908 (Am 6): 45 (*Sebacina*); Bourd. & L. Maire 1920 (BmF 36): 71 (*Exidiopsis*); Bourd. & G. 1928: 45; M. P. Christ. 1959 (DbA 19): 32 *f. 24* (*Sebacina*); Wells 1962 (M 53): 341 *f. 8* (*Exidiopsis*); Oberw. 1963 (Bba 36): 52 *f. 16* (*Sebacina*).

helvelloides (Schw.) Burt 1915. — *Thelephora* Schw. 1822 (U.S.A., North Carolina): Fr. 1828; *Corticium* Mass. 1890. — Fr. 1828 E. 1: 193 (*Thelephora*); Burt 1915 (AMo 2): 756 *pl. 27 f. 14*; McGuire 1941 (Ll 4): 13 *fs.* 2, *10–14* (*Sebacina*).

Corticium basale Peck 1890 (RNS 43): 69 (U.S.A., New York); fide Burt 1915 (AMo 2): 757 & Mc Guire 1941 (Ll 4): 13.

Sebacina chlorascens Burt 1915 (AMo 2): 756 *f. 1, pl. 27 f. 15* (U.S.A., Florida): fide McGuire 1941 (Ll 4): 13, 14, 16.

[Sebacina]

Sebacina alutacea Wakef. 1922 (BmI): 162 *fig.* (India); fide Wells 1962 (M 53): 359.

inclusa Oberw. 1964 (Germany). — Oberw. 1964 (NH 7): 496 *pl. 33 fs. 14–19.*

incrustans (Pers. per Fr.) Tul. 1871 (**54**). — *Corticium* Pers. 1796 (Germany) (d.n.); *Thelephora* Pers. 1801 (d.n.) per Fr. 1821; *Corticium* P. Karst. 1868. — Fr. 1828 E. 1: 214 (*Thelephora*); Tul. 1872 (ASn V 15): 225 *pl. 10 fs. 6–10*; Pat. 1883 T.a. 1: 67 *f. 155*; Bref. 1888 U. 7: 103 *pl. 6 f. 22*, exclusive of so-called conidial state depicted in *fs. 23, 24*, cf. Arnaud 1951 (BmF 67): 195 & Donk 1962 (Pe 2): 219; Bres. 1897 (AAR III 3): 117; Lloyd 1917 (LMW 5): 744 *f. 1115*; 1925 (LMW 7): 1361 *pl. 342 fs. 3238, 3240*; Delécluse 1937 (BmF 53): 139 *f. 6*; McGuire 1941 (Ll 4): 12 *fs. 1, 7–9*; Pilát 1957 (SnP 13): 155 *pls. 19, 20*; M. P. Christ. 1959 (DbA 19): 26 *f. 17*; Oberw. 1963 (Bba 36): 53 *f. 20* (*Sebacina*). — Fide Pers. 1822: 135 = *Thelephora sebacea* ("fungus adultum sistit"); fide Bres. 1903 (Am 1): 116 ("Tul.") = *Sebacina laciniata* [sensu Bres.].

Merisma penicillatum Pers. 1797 C.: 228/96 (Germany) (d.n.); fide Bres. 1897 (AAR III 3): 117. — *Thelephora* (Pers.) per Fr. 1821; *Merisma* Wallr. 1833, misapplied; ≡ *Clavaria incrustans* Poir. 1811 (d.n.). — Sensu Fr. 1828 = *Thelephora* sp.

Merisma cristatum Pers. 1797 C.: 228/96 (Germany) (d.n.) (**54**); fide Bres. 1897 (AAR III 3): 117. — *Thelephora* (Pers.) per Fr. 1821; *Merisma* S. F. Gray 1821, Pers. 1822; *Corticium* P. Karst. 1882; *Cristella* Pat. 1887 (nom. nud.: n.v.p.), 1900, misapplied; *Sebacina* Lloyd 1925 (n.v.p.). — Lloyd 1925 (LMW 7): 1361 *pl. 342 f. 3241* (*Sebacina*). — Sensu Pat. = *Cristella fastidiosa* (Pers. per Fr.) Brinkm.

Merisma serratum Pers. 1797 (Germany) (d.n.); fide Fr. 1828 E. 1: 214 & Bres. 1897 (AAR III 3): 117. — *Clavaria* Poir. 1811 (d.n.); *Merisma* Pers. per Pers. 1822; *Thelephora* Hornem. 1827. — Pers. 1797 C.: 239/106 *pl. 4 f. 4.*

Thelephora sebacea Pers. 1801: 577 (Germany) (d.n.); fide Fr. 1828 E. 1: 214 & Bres. 1897 (AAR III 3): 117. — *Thelephora* Pers. per Pers. 1822; *Corticium* Quél. 1886, Mass. 1890.

Corticium deglubens B. & C. apud Berk. 1873 (U.S.A., Alabama); fide Rog. & Jacks. 1943 (Fa 1): 327. — *Sebacina* Burt 1915. — Burt 1915 (AMo 2): 755 (*Sebacina*).

Irpex hypogaeus Fuck. 1873 (Jna 27–28): 88 (Germany); fide Bres. 1920 (Am 18): 70 = *Sebacina laciniata* [sensu Bres.].

Thelephora gelatinosa Saut. 1876 (H 15): 152 (Austria); fide Keissl. 1917 (AW 31): 112 = *Thelephora sebacea.*

Dacrymyces albus Lib. ex Roum. 1880 (Rm 2): 24 (Belgium); fide Lloyd 1921 (LMW 6): 1051. — ≡ *Tremella culmorum* Cooke 1880 (typonym).

Clavaria rivalis Britz. 1890 (Germany) (**54**). — Britz. 1890 (BnS 30): 33 [*pl. 742 f. 49*].

? *Sebacina amesii* Lloyd 1916 (LMW 5): 576 *fs. 810–812* (U.S.A., New York); cf. McGuire 1941 (Ll 4): 12, 13.

? *Sebacina spongiosa* Lloyd 1918 (LMW 5): 779 *f. 1174* (West Indies, Bahama Islands); cf. McGuire 1941 (Ll 4): 16 ("probably the purplish form of

[Sebacina]

S. helvelloides") & Wells 1962 (M 53): 366 ("probably ... *Sebacina incrustans*").

Ptychogaster subiculoides Lloyd 1922 (LMW 7): 1143 *pl. 206 f. 2181* (Canada); fide G. W. Mart. 1952 (SIa 19[3]): 53.

Sebacina bresadolae Lloyd 1925 (LMW 7): 1362 *pl. 342 f. 3243* (as a form of *S. incrustans:* n.v.p.) (Italy) (**54**).

M.—*Clavaria laciniata* Schaeff. sensu Bull. (**54**); fide Pers. 1801: 583, Fr. 1821: 434, & Bres. 1897 (AAR III 3): 117. — Bull. 1788: *pl. 415 f. 1*; 1791 H.: 208 (*Clavaria*); Bres. 1903 (Am 1): 116; Bourd. & G. 1928: 39; Bres. 1932 (BIm 23): *pl. 1123*; Neuh. 1936 (ABS 28[1]): 27 *pl. 6* (*Sebacina*).

M.—*Thelephora byssoides* Pers. sensu Bon. 1870: 52; fide Donk 1963 (Ta 12): 167.

? M.—*Corticium caesium* Pers. sensu Tul. 1871 (JLS 13): 37; 1872 (ASn V 15): 226 (*Sebacina*). — Cf. *Sebacina caesia.*

interna Poelt & Oberw. apud Oberw. 1964 (Germany). — Oberw. 1964 (NH 7): 496 *pl. 33 fs. 20–25.*

invisibilis Oberw. 1963 (Germany). — Oberw. 1963 (Bba 36): 49 *f. 9.*

laccata Bourd. & G. 1924 (France). — *Exidiopsis* Luck apud Wells 1962. — Bourd. & G. 1928: 41 *f. 20* (*Sebacina*); Wells 1962 (M 53): 340 *f. 7* (*Exidiopsis*).

Sebacina mesomorpha Bourd. & G. 1924 (France); fide Luck apud Wells 1962 (M 53): 340, 341. — Bourd. & G. 1928: 41; Wells *1959*, cytology.

livescens Bres. 1898 (Italy). — *Thelephora* Sacc. & Syd. 1902; *Exidiopsis* Bourd. & L. Maire 1920. — Bres. 1898 F.t. 2: 64 *pl. 174 f. 1* (*Sebacina*); Bourd. & L. Maire 1920 (BmF 36): 71 (*Exidiopsis*); Bourd. & G. 1928: 41; Bres. 1932 (BIm 23): *pl. 1125 f. 1*; Neuh. 1936 (ABS 28[1]): 28; McGuire 1941 (Ll 4): 43; Oberw. 1963 (Bba 36): 54 *f. 23* (*Sebacina*).

microbasidia Christ. & Hauersl. apud M. P. Christ. 1959 (Denmark). — M. P. Christ. 1959 (DbA 19): 30 *f. 22A.*

molybdea McGuire 1941 (U.S.A., Iowa). — *Exidiopsis* Ervin 1957. — McGuire 1941 (Ll 4): 17 *fs. 22–25*; L. Olive 1944 (JMS 60): 22 *pl. 6 fs. 12–16* (*Sebacina*); Wells 1962 (M 53): 332 *f. 4* (*Exidiopsis*).

Sebacina atra McGuire 1941 (U.S.A., Iowa); fide Wells 1962 (M 53): 332, 333. — McGuire 1941 (Ll 4): 27 *fs. 67–72.*

plumbea Bres. & Torr. apud Torrend 1913 (Portugal) (**53**), not ~ Burt 1915. — Bres. & Torr. apud Torrend 1913 (Bro 11): 87 *f. 8*; Bourd. & G. 1928: 45.

podlachica Bres. 1903 (Poland). — *Exidiopsis* Ervin 1957. — Bourd. & G. 1928: 45; McGuire 1941 (Ll 4): 28 *fs. 58–61*; L. Olive 1947 (M 39): 101 *f. 9*; 1948 (M 40): 598 (*Sebacina*); Wells 1957 (Ll 20): 49 *f. 3* (*Exidiopsis*); Oberw. 1963 (Bba 36): 53 *f. 15* (*Sebacina*).

Sebacina subhyalina A. Pears. 1928 (England); fide Wells 1962 (M 53): 367. — A. Pears. 1928 (TBS 13): 70, 71 *f. 3*; M. P. Christ. 1959 (DbA 19): 30 *f. 22*; Wells, l.c.

strigosa Bourd. & G. 1909 (France) (**42**). — Bourd. & G. 1928: 38 *f. 18*; Delécluse 1937 (BmF 53): 137 *f. 6*; Wells 1962 (M 53): 366.

[Sebacina]

sublilacina G. W. Mart. 1934 (U.S.A., Iowa). — *Exidiopsis* Ervin 1957. — G. W. Mart. 1934 (M 26): 262 *pl. 31 fs. 3–10*; McGuire 1941 (Ll 4): 30 *fs. 62–66*; L. Olive 1946 (JMS 62): 68 *pl. 11 fs. 10–18*; G. W. Mart. 1952 (SIa 19[3]): 61 *f. 11*; M. P. Christ. 1959 (DbA 19): 29 *f. 21*; Wells 1962 (M 53): 321, 367; Reid & Austw. 1963 (GN 18): 331 (*Sebacina*).

M.—*Sebacina fugacissima* Bourd. & G. sensu G. W. Mart. apud Whelden 1935 (M 27): 503 *f. 2*; fide McGuire 1941 (Ll 4): 30.

tuberculosa Torrend 1913 (Portugal). — Torrend 1913 (Bro 11): 88; Bourd. & G. 1928: 43; Pilát 1957 (SnP 13): 159 *pl. 22 f. a.*

umbrina D. P. Rog. 1935 (U.S.A., Iowa) (**53**). — *Bourdotia* Pilát 1957. — D. P. Rog. 1935 (SIa 17): 39 *f. 19*; Mc Guire 1941 (Ll 4): 32 *fs. 75–79*; ? M. P. Christ. 1959 (DbA 19): 24 *f. 13*; Wells 1960 (M 51): 561; Oberw. 1963 (Bba 36): 49 *f. 10.*

vermifera Oberw. 1964 (Germany). — Oberw. 1964 (NH 7): 495 *pl. 33 fs. 1–7.*

SIROBASIDIUM Lag. & Pat. (**55**)

1892 [1958 (Ta 7): 243]. — Lectotype: *Sirobasidium sanguineum* Lag. & Pat.

SPECIAL LITERATURE.—Bandoni, *1957b*; Kobayasi, *1962*; Lagerheim & Patouillard, *1892*; Lowy, *1956.*

brefeldianum A. Möll. 1895 (Brazil) f. *microsporum* Maire 1945 (France) (**56**). — Maire 1945 (BAN 36) : 38 *f. 8.*

STYPELLA A. Möll. (**44**, **57**)

1895 [1958 (Ta 7): 224]. — Lectotype: *Stypella papillata* A. Möll.

Gloeosebacina Neuh. 1924 [1958 (Ta 7): 198]. — Lectotype: *Stypella papillata* A. Möll.

SPECIAL LITERATURE.—Martin, *1934*; Svrček, *1950.*

papillata A. Möll. 1895 (Brazil) (**57**). — *Sebacina* Pat. 1900. — Sensu G. W. Mart. 1934 (SIa 16): 144 *f. 1*; Oberw. 1963 (Bba 36): 54 *f. 13* (*Stypella*).

? *Protomerulius farlowii* Burt 1919 (AMo 6): 175 *f. 1* (U.S.A., New Hampshire); fide G. W. Mart. 1952 (SIa 19[3]): 61 (from description).

Sebacina crystallina Bourd. 1922, in obs., Rea 1922 (France) (**57**); fide Luck 1960 (CJB 38): 560, 568. — *Heterochaetella* Bourd. 1921 (as a sp. of *Sebacina*: n.v.p.), Bourd. & G. 1928. — Bourd. 1921 (TBS 7): 53 *f. 2*; Bourd. & G. 1928: 52; Svrček 1950 (ČM 4): 39 *fig.*; Reid & Austw. 1963 (GN 18): 330 (*Heterochaetella*).

TREMELLA Pers. per St-Am.

1821: Fr. 1822, not ~ L. 1753 (d.n.; 'Nostocaceae heterocysteae'), not ~ S. F. Gray 1821 (Tremellaceae), not ~ Arth. 1901 (Uredinales), &c. [1958 (Ta 7): 247]. — *Tremella* Pers. 1801 (d.n.). — Lectotype: *Tremella mesenterica* Pers.

[Tremella]

Gyraria Nees 1816 (provisional alternative name) ex S. F. Gray 1821 [1958 (Ta 7): 200]. — Lectotype: *Tremella mesenterica* Pers.

Naematelia Fr. per Fr. 1822 (nom. conf.) [1958 (Ta 7): 236; 1963 (Ta 12): 166] (**60**). — *Naematelia* Fr. 1816 (nom. nud.), 1818 (d.n.). — Lectotype: *Tremella encephala* Pers. per Pers.

Encephalium (Link per Pers.) Brongn. 1824 (nom. conf.) [1958 (Ta 7): 195]. — *Encephalium* Link 1816 (d.n.); *Tremella* sect. *Encephalium* (Link) per Pers. 1822. — Monotype: *Encephalium aurantiacum* Link.

Epidochium Fr. 1849 [1958 (Ta 7): 195]. — Lectotype: *Agyrium atrovirens* Fr.

Phaeotremella Rea 1912 [1928 (Ta 7): 238]. — Monotype: *Phaeotremella pseudofoliacea* Rea.

? *Dermatangium* Velen 1926 [1958 (Ta 7): 250].— Monotype: *Dermatangium laevisporum* Velen.

? *Nakaiomyces* Y. Kobay. 1939 (nom. conf.) [1958 (Ta 7): 237]. — Holotype: *Nakaiomyces nipponicus* Y. Kobay.

Hormomyces Bon. 1851 (nom. anam.) [1962 (Ta 11): 86]. — Monotype: *Hormomyces aurantiacus* Bon.

SPECIAL LITERATURE.—Bandoni, *1961*, *1963a*; Christiansen, *1954*; Dangeard, *1895*; Kobayasi, *1939a*; Looney, *1933*; Neuhoff, *1931*, *1933*; Pilát, *1953*; Velenovský, *1926*; Whelden, *1934*, *1935a*.

candida Pers. per Pers. 1822 (**58**), not ~ Lloyd 1919. — *Tremella* Pers. 1801 (Germany) (d.n.), not ~ Timm 1788 (d.n.).

M.—*Tremella albida* Huds. sensu Bourd. & G. 1909. — Bourd. & G. 1928: 21 *f. 13*; ? Bres. 1932 (BIm 23): *pl. 1121 f. 1*; Schieferd. 1942 (ZP 21): *pl. 3 fig.* & 1948 (ZP 21): 9; 1942 (Her 3): 295 *pl. 4 f. 1*.

cerebrina Bull. per St-Am. 1821 (**59**). — *Tremella* Bull. 1788 (France) (d.n.); *Ulocolla* Bres. 1920. — Bull. 1788: *pl. 386*; 1791 H.: 221. — Cf. *Tremella frondosa* sensu Quél.

encephala Pers. per Pers. 1822 (**61**, **62**); fide Bandoni 1961 (AMN 66): 322 based on two distinct fungi forming a compound fruitbody, viz. *Stereum sanguinolentum* (A. & S. per Fr.) Fr. parasitized by a species of *Tremella*. — *Tremella* Pers. 1801 (d.n.); *Naematelia* Fr. 1818 (d.n.); *Naematelia* (Pers. per Pers.) Fr. 1822; ≡ *Tremella encephaliformis* Willd. 1788 (Germany) (nom. conf.?) (d.n.); *Naematelia* (Willd.) per Coker 1920; *Tremella* Jaap 1922; ≡ *Tremella encephaloides* Gmel. 1791 ("*ancephaloides*") (d.n.); ≡ *Encephalium aurantiacum* Link 1816 (d.n.); ≡ *Tremella encephaloidea* Spreng. 1827, not/an *T. encephalodes* Schum. 1803 (d.n.). — A. & S. 1805: 301; Bref. 1888 U. 7: 127 *pl. 8 fs. 20–24* (*Tremella*); Lloyd 1922 (LMW 7): 1149 *pl. 213 fs. 2223, 2224, 2227* (*Naematelia*); Bourd. & G. 1928: 24 *f. 15* (*Tremella*); Neuh. 1938 (PM 2a): 55 *pl. 8 fs. 1–12*, unfinisned; Y. Kobay. 1939 (SRT 4): 6 *f. 4* (*Naematelia*); Pilát 1957 (SnP 13): 176 *pl. 22 f. b*, *pl. 25* (*Tremella*);— all with the epithet 'encephala'.

Tremella fragiformis Pers. 1801 (Germany) (nom. conf.?) (d.n.); fide Höhn. 1917 (Am 15): 294 & Neuh. 1936 (ABS 28[1]): 23, 1938 (PM 2a): 56. — *Dacrymyces* Mart. 1817 (d.n.); *Tremella* Pers. per Pers. 1822; *Dacrymyces* Fr. 1822; *Naematelia* Lloyd 1922 (n.v.p.). — Pers. 1804 I.p.: 23 *pl. 10 f. 1* (*Tremella*).

[Tremella]

Tremella alabastrina Bref. 1888 (Germany) (nom. conf. ?); fide Donk 1931 (MmV 18–20): 110 & Neuh. 1936 (ABS 28[1]): 23, 1938 (PM 2a): 56. — Bref. 1888 U. 7: 129 *pl. 8 fs. 29–33.*

Naematelia japonica Lloyd 1915 (LMW 4, L. 54): 5 *fig.* on p. 7 (Japan) (nom. conf.); fide Y. Kobay. 1939 (SRT 4): 7. — *Tremella* (Lloyd) apud Yas. 1915 (typonym).

M.—*Naematelia rubiformis* Fr. sensu Bourd. & G. 1928: 25; fide Neuh. 1938 (PM 2a): 56.

exigua Desm. 1846 (France) (**71**). — Desm. 1847 (ASn III 8): 191; Gillot & Luc. 1891 (BAt 4): 453. — Fide Fr. 1849: 471 = *Epidochium atrovirens.*

Agyrium atrovirens Fr. 1822. — *Epidochium* Fr. 1849; *Tremella* Sacc. 1888, not ~ Bull. 1783 (d.n.), not ~ Secr. 1833. — Sacc. 1888 (SF 6): 790; Bourd. & G. 1928: 25 *f. 16*; Neuh. 1931 (ZP 10): 75; Donk 1931 (MmV 18–20): 111; Lund. & Nannf. 1936 (LNF 5–6): 30 No. 262 (*Tremella*).

? *Naematelia virescens* Corda 1839 I. 3: 35 *pl. 6 f. 90* (Austria); fide Sacc. 1888 (SF 6): 790 & Neuh. 1936 (ABS 28[1]): 21 = *Tremella atrovirens.* — *Tremella* Bres. 1932, misapplied?, not ~ (Schum. per Fr.) Bref. 1888. — A very doubtful synonym.

Exidia minutula Sacc. 1879 (Mi 1): 502 (France); fide Sacc. 1880 (Mi 2): 43 = *Epidochium atrovirens.*

Tremella genistae Lib. ex Roum. 1880 (Belgium); fide Sacc. 1888 (SF 6): 790 & Donk 1931 (MmV 18–20): 111 = *Tremella atrovirens.* — Bref. 1888 U. 7: 123 *pl. 8 fs. 7–13.*

foliacea (Pers. per S. F. Gray) Pers. 1822: Fr. 1822 (**63**). — *Tremella* Pers. 1799 (Germany) (d.n.): *Gyraria* (Pers.) per S. F. Gray 1821; *Naematelia* Bon. 1864; *Ulocolla* Bref. 1888, misapplied; *Exidia* P. Karst. 1889, misapplied. — Sensu Fr. 1822: 212; Bres. 1900 F.t. 2: 97 *pl. 209 f. 1*; Bourd. & G. 1928: 20; Neuh. 1933 (SZP 11): 97 *pl. 23 fig.*; 1936 (ABS 28[1]): 19; 1938 (PM 2a): *Ft. 9*; Pilát 1957 (SnP 13): 177 *pls. 26, 27, pl. 28 f. a.* — Sensu Bref. → *Exidia saccharina.*

Tremella verticalis Bull. 1785: *pl. 272* (France) (d.n.) (**63**); fide Fr. 1822: 212 = *T. fimbriata* ("optime"); fide Neuh. 1936 (ABS 28[1]): 20 = *Tremella foliacea* sensu Bres. — *Tremella* Bull. per Sacc. 1916.

Tremella undulata Hoffm. 1787 (Germany) (d.n.) (**63**). — *Tremella* Hoffm. per Pollini 1824, not ~ Paul. 1812–1835 (n.v.p.?). — Hoffm, 1787 V.c. 1: 32 *pl. 7 f. 1*; J. Schroet. 1888: 396; A. Möll. 1895 (BMS 8): 111 *pl. 2 f. 1*, on pl. as *T. undulata* f. *brasiliensis.*

Merulius lichenoides Schrank 1789: 575 (Germany) (d.n.); fide Strauss 1850: 48 & Donk.

Tremella fimbriata Pers. 1799 O. 2: 97 (Germany) (d.n.) (**63**). — *Tremella* Pers. per Pers. 1822: Fr. 1822. — Fr. 1822: 212.

Tremella ferruginea Sm. 1805 (EB 21): *pl. 1452* (England) (d.n.), not ~ Schum.

[Tremella]

1803 (d.n.); fide Fr. 1874: 690 (var. obscurior). — *Tremella* Sm. per Hook. 1821, not ~ Schum. per Pers. 1822; *Gyraria* S. F. Gray 1821.

Tremella grandis Roth 1806 (Germany) (d.n.). — *Tremella* Roth per Steud. 1824 ("Retz.", error). — Roth 1806: 348.

Tremella violacea (Bull.) Pers. 1818 (d.n.) (**63**), not ~ Relh. 1785 (d.n.) & (Pers. per S. F. Gray) Pers. 1822. — *Tremella mesenteriformis* var. Bull. 1791 H.: 230 [*pl. 499 f. 6X*] (France); ≡ *Tremella tinctoria* Pers. 1822.

Tremella succinea Pers. 1822: 101 ("*succina*") (Europe) (**63**); fide Neuh. 1931 (ZP 10): 73 (var.); 1936 (ABS 28[1]): 21 *pl. 4 f. A* (forma).

? *Tremella badia* Chev. 1826: 95 *pl. 7 f. 8* (France); fide Berk. 1836: 215 = *Tremella ferruginea.*

Phaeotremella pseudofoliacea Rea 1912 (England) (**63**). — Rea 1912 (TBS 3): 377 *pl. 20 fig.*; 1922: 733.

Ulocolla mesenteriformis Sacc. 1916: 1277 (France), not *Tremella mesenteriformis* Jacq. per St-Am. 1821. — [*Tremella mesenteriformis* Jacq. sensu Bull. 1788: *pl. 406*, in part, viz. *f. A.*] — Fide Fr. 1822: 213 ("Bull. . . . t. 406 f. A, a") & Bres. 1900 F.t. 2: 97 ("Bull. . . . tab. 406").

M.—*Tremella frondosa* Fr. sensu Tul. 1872 (**64**). — Tul. 1872 (ASn V 15): 220; Bref. 1888 U. 7: 120 *pl. 7 f. 19, pl. 8 fs. 1–6*; Coker 1920 (JMS 35): 141 *pl. 39, pl. 56 fs. 10, 11*; Looney 1933 (SIa 15[1]): 24 *tpl. 1.*

frondosa Fr. 1822: 212 (Sweden) (**64**), not ~ Roth 1806 (generic name n.v.p.; Chlorophyceae). — *Naematelia* Bon. 1851, misapplied. — Sensu Quél. 1888: 23; Bourd. & G. 1928: 19; ? Neuh. 1936 (ABS 28[1]): 22. — Sensu Bon. 1851 → *Tremella mesenterica*; sensu Tul. → *Tremella foliacea*; sensu Quél., cf. *Tremella cerebrina.*

globulus Bref. 1888 U. 7: 126 *pl. 8 fs. 14–19* (Germany), not ~ (Corda) Quél. 1888. — Insufficiently described.

hispanica Lloyd 1919 (Spain). — Lloyd 1919 (LMW 5): 872 *fs. 1487, 1488.* — Cf. Bandoni 1959 (Ll 21): 145: dubious as to species.

indecorata Sommerf. 1826 (Norway): Fr. 1828 (**71**). — *Exidia* P. Karst. apud P. Karst. & al. 1890, misapplied. — Fr. 1828 E. 2: 33; Bourd. & G. 1928: 22; Neuh. 1931 (ZP 10): 74; Schieferd. 1942 (ZP 21): *pl. 2 fig.* & 1948 (ZP 21): 9; 1942 (Her 3): 295 *pl. 3 f. 2.* — Sensu P. Karst. = *Exidia* sp.

intumescens Sm. per Hook. 1821: Fr. 1822 (**65**). — *Tremella* 1808 (England) (d.n.); *Gyraria* (Sm. per Hook.) S. F. Gray 1821; *Exidia* P. Karst., 1889, misapplied, Rea 1922, mixtum. — Sm. 1808 (EB 26): *pl. 1870.* — Sensu Bon. → *Exidia plana*; sensu Britz. = *Exidia* sp.; sensu P. Karst. = *Exidia* sp.

Tremella nigrescens Fr. 1849 (Sweden) (**65**). — *Exidia* P. Karst. 1889, misapplied. — Fr. 1863 M. 2: 283; 1874: 690; Bourd. & G. 1928: 20. — Fide Neuh. 1936 (PM 2a): 37 = a form of *Tremella foliacea*; sensu P. Karst. = *Exidia* sp.

lutescens (Pers. per Pers.) Fr. 1822 (**66**). — *Tremella* Pers. 1800 (Germany) (d.n.); *Tremella mesenterica* var. Pers. 1822. — Pers. 1800 I.D. 2: 33 *pl. 8 f. 9*; Bourd. & G. 1928: 20 (a distinct species ?); Neuh. 1931 (ZP 10): 73; 1936 (ABS 28[1]): 22. —

[Tremella]

Often fused with *T. mesenterica*. — Sensu Quél. → *Guepiniopsis buccina*; sensu Bref. → *Tremella mesenterica*.

? *Tremella flavidula* Lloyd 1924 (LMW 7): 1276 *pl. 289 f. 2827* (U.S.A Massachusetts). — Bandoni 1959 (Ll 21): 144 *f. 15*.

mesenterica Retz. per Hook. 1821: Fr. 1822 (**66**). — *Tremella* Retz. 1769 (d.n.), not ~ Steud. 1824; [*Nostoc luteum, mesenterii forma* Vaill. 1727: *pl. 14 f. 4* (France)]; ≡ *Helvella mesenterica* Schaeff. 1774 (d.n.), not ~ Holm 1781 (d.n.), not ~ Dicks. 1785 (d.n.); ≡ *Tremella mesenteriformis* Jacq. 1778 (d.n.) per St-Am. 1821, Web. 1778 (d.n.), Brot. 1804 (d.n.), not/an ~ Gilib. 1792 (d.n.); ≡ *Tremella mesenteroides* Paul. 1793 (d.n.); ≡ *Tremella mesenterica* Pers. 1801 (≡ *T. mesenteriformis* Jacq.) (d.n.); *Gyraria* (Pers.) per S. F. Gray 1821; *Tremella* Pers. 1822; ≡ *Tremella undulata* Paul. 1812–35: *pl. 186 f. 3* (d.n.?), not ~ Hoffm. 1787 (d.n.) per Pollini 1824. — Jacq. 1778 (MaJ 1): 142 *pl. 13* (*Tremella mesenteriformis*); Sm. 1800 (EB 10): *pl. 709*; L. Tul. 1853 (ASn III 19): 195 *pl. 10, pl. 11 f. 1*; Bref. 1888 U. 7: 118 *pl. 7 fs. 13–18*; Rolland 1910: 91 *pl. 105 f. 237*; Bourd. & G. 1928: 21; Neuh. 1938 (PM 2a): *pl. 8*, text not published; Y. Kobay. 1939 (SRT 4): 17 *fs. 11, 12, pl. 3 fs. A–C*; Bjørnek. 1944 (Fr 3): 23 *3 figs.*; Schieferd. 1942 (Her 3): 295 *pl. 3 f. 1*; G. W. Mart. 1952 (SIa 19[3]): 75 *tpl. 2 f. 17, tpl. 4 f. 32*; Bandoni *1963b* (*Tremella mesenterica*).

Tremella chrysocoma Bull. 1783: *pl. 174* (France) (d.n.); fide Fr. 1822: 214. — ≡ *Tremella expansa* Chev. 1826.

? *Tremella auriformis* Hoffm. 1787 V.c. 1: 31 *pl. 6 f. 4* (Germany) (d.n.), not ~ (Schw.) Spreng. 1827; fide Fr. 1822: 214.

Tremella quercina Pollini 1816 (Italy) (d.n.) (**64**). — *Tremella* Pollini per Pollini 1824. — Pollini 1817: 20 *pl. 7 f. 10*.

Tremella mesenterica Steud. 1824, not ~ Retz. per Fr. 1822. — [*Tremella mesenterica* Retz. sensu Hoffm. 1787 (Germany). —] Hoffm. 1787 V.c. 1: 35 *pl. 7 f. 3*.

M.—*Tremella frondosa* Fr. sensu Bon. 1851: 152 *pl. 11 f. 232*.

M.—*Tremella lutescens* Pers. sensu Bref. 1888; fide Neuh. 1936 (ABS 28[1]): 22. — Bref. 1888 U. 7: 109 *pl. 7 fs. 1–12*; Neuh. 1924 (BAM 8): 267 *pl. 3 f. 15*; Looney 1933 (SIa 15[1]): 28 *tpls. 2, 3*; L. Olive 1947 (M 39): 95.

Hormomyces aurantiacus Bon. 1851: 150 *pl. 11 f. 234* (Germany) (nom. anam.); fide Sacc. 1916: 1281 & Bres. 1932 (BIm 23): text to pl. 1120 f. 1 ("forma conidica").

moriformis Sm. per Purt. 1821, Berk. 1860 (**67**). — *Tremella* Sm. 1812 (England) (d.n.); *Dacrymyces* Fr. 1822. — Sm. 1812 (EB 34): *pl. 2446*; Coker 1920 (JMS 35): 148; L. Olive 1958 (BTC 85): 98; Bandoni 1959 (Ll 21): 148 *f. 4*. — Sensu Quél. 1872 (MMb II 5): 315; Bourd. & G. 1928: 23 *f. 14*; Podzimek 1929 (MP 6): 20 *fig.*; Bres. 1932 (BIm 23): *pl. 1121 f. 2*; ? J. Favre 1960 (EsN II 6): 362 *f. 4*.

Tremella colorata Peck 1873 (BBf 1): 62 & 1873 (RNS 25): 83 (U.S.A., New York); fide Coker 1920 (JMS 35): 148.

[Tremella]

Tremella atroglobosa Lloyd 1922 (LMW 7): 1148 *pl. 212 f. 2220* ("*aterglobosa*") (Brazil); fide Bandoni 1959 (Ll 21): 148.

M.—*Tremella violacea* Pers. sensu Bourd. & G. 1928 (**69**). — Bourd. & G. 1928: 23.

mycophaga G. W. Mart. 1940 (Canada, Ontario). — G. W. Mart. 1940 (M 32): 686 *f. 3*; L. Olive 1946 (M 38): 541, in obs.; G. W. Mart. 1952 (SIa 19[3]): 73; M. P. Christ. 1954 (Fr 5): 57 *fs. 1–3*; Pilát 1957 (SnP 13): 187 *pl. 29*.

obscura (L. Olive) M. P. Christ. 1954 (**68**). — *Tremella mycophaga* var. L. Olive 1946 (U.S.A., Georgia). — L. Olive 1946 (JMS 62): 66 *pl. 13 fs. 1–15* (*Tremella* sp.); 1946 (M 38): 540 *f. 2: 12–15*; 1948 (M 40): 593 (*Tremella mycophaga* var.); M. P. Christ. 1954 (Fr 5): 62 *f. 7*; McNabb 1964 (NZB 2): 409.

pyrenophila Trav. & Migl. apud Migl. & Trav. 1914 (AIv 73[2]): 1316 *pl. 1 f. 1* (Italy) (**71**).

simplex Jacks. & Mart. apud G. W. Mart. 1940 (Canada, Ontario). — G. W. Mart. 1940 (M 32): 687 *f. 4*; 1952 (SIa 19[3]): 73; M. P. Christ. 1954 (Fr 5): 60 *fs. 4–6*.

spicata Bourd. & G. 1924 (France). — Bourd. & G. 1928: 24; Neuh. 1931 (ZP 10): 74.

steidleri (Bres.) Bourd. & G. 1928. — *Tremella encephala* var. Bres. 1908 (Czechoslovakia). — Bres. 1908 (Am 6): 46 (*Tremella encephala* var.); Bourd. & G. 1928: 21 *f. 12*; Schieferd. 1942 (ZP 21): *pl. 2 fig.* & 1948 (ZP 21): 9 (*Tremella*).

? *Dermatangium laevisporum* Velen. 1926 (MP 3): 44 *fig.* (Czechoslovakia); fide Vacek apud Pilát 1948: 287 & Pilát 1957 (SnP 13): 180, but explanation of conclusion still wanting.

tubercularia Berk. 1860 (**71**). — ≡ *Tubercularia albida* Berk. 1836 (England). — Bourd. & L. Maire 1920 (BmF 36): 69; Bourd. & G. 1928: 25; Neuh. 1931 (ZP 10): 75; Donk 1931 (MmV 18–20): 110; Schieferd. 1942 (ZP 21): *pl. 2 fig.* & 1942 (ZP 21): 8; 1942 (Her 3): 295 *pl. 2 f. 2* [= *1*]; G. W. Mart. 1952 (SIa 19[3]): 72.

uliginosa P. Karst. 1883 (Mfe 9): 111 (Finland).

versicolor B. & Br. 1854 (England). — Neuh. 1931 (ZP 10): 75; 1936 (ABS 28[1]): 24.

virescens (Schum. per Fr.) Bref. 1888 (**70**), Quél. 1888; not ~ (Corda) Bres. 1932. — *Tremella* Schum. 1803 (Denmark) (d.n.); *Dacrymyces* (Schum.) per Fr. 1822. — Hornem. 1825 (Fd 11 / F. 31): 14 *pl. 1857 f. 1*, presumably Schumacher's original drawing (*Dacrymyces*); ? Bref. 1888 U. 7: 128 *pl. 8 fs. 25–28*; Bourd. & G. 1928: 22; Neuh. 1931 (ZP 10): 74 (*Tremella*).

Incertae sedis: 'Microtremella'

SPECIAL LITERATURE.—Gordon, *1938*; Linder, *1933*; Martin, *1934*.

albescens (Sacc. & Malbr. apud Sacc.) Sacc. 1888. — *Epidochium* Sacc. & Malbr. apud Sacc. 1881 (Mi 2): 305 (France).

[Tremella]

coriaria Bres. apud Strass. 1907 (VW 57): 300 (Austria). — ≡ *Tremella coriacea* Sacc. & Trott. 1912.

fusispora Bourd. & G. 1924 (France). — Bourd. & G. 1928: 27; Neuh. 1936 (ABS 28[1]): 25.

grilletii Boud. 1885 (France). — *Exidia* Neuh. 1936. — Boud. 1885 (BmF 32): 284 *pl. 9 f. 4*; Bourd. & G. 1928: 26 (*Tremella*); Neuh. 1936 (PM 2a): 44 *Ft. 7 fs. 1–3* (*Exidia*).

? *Exidia guttata* Bref. 1888 U. 7: 93 *pl. 5 fs. 12, 13* (Germany); fide Neuh. 1936 (PM 2a): 44. — Very doubtful synonym.

Tremella glacialis Bourd. & G. 1924 (France); fide Neuh. 1936 (PM 2a): 46 (forma). — A. Pears. 1928 (TBS 13): 70 *f. 2*; Bourd. & G. 1928: 26 *f. 17*.

Exidia minutissima Höhn. 1904 (Am 2): 38, not ~ Coker 1928; fide Neuh. 1936 (PM 2a): 41.

rosea Höhn. 1903 (Am 1): 394 (Austria); not ~ (Schreb.) Plan. 1788 (Lichenes; generic name n.v.p.).

Sebacina **sphaerospora** Bourd. & G. 1924 (France) (**72**); fide Wells 1962 (M 53): 364 = *Stypella minor* A. Möll. [sensu G. W. Mart.]. — A. Pears. 1928 (TBS 13): 71; Bourd. & G. 1928: 43 *f. 22*; McGuire 1941 (Ll 4): 21 *fs. 35–37*; M. P. Christ. 1959 (DbA 19): 29 *f. 20A*; Wells 1962 (M 53): 363.

Tremella gangliformis Linder 1933 (U.S.A., Missouri) (**72**); fide G. W. Mart. 1934 (SIa 16): 147 = *Stypella minor* [sensu G. W. Mart.]. — Linder 1933 (M 25): 108 *f. 1*.

M.—*Stypella minor* A. Möll. sensu G. W. Mart. 1934 (**72**). — G. W. Mart. 1934 (SIa 16): 145 *f. 1, pl. 6*; 1952 (SIa 19[3]): 44 *tpl. 1 f. 9*; L. Olive 1946 (JMS 62): 68 *pl. 11 fs. 19–24*; Oberw. 1963 (Bba 36): 54 *f. 14*.

translucens Gordon 1938 (TBS 22): 11 *fs. 1–4, pl. 5* (Scotland).

TREMELLODENDROPSIS (Corner) D. A. Crawf.

1954 [1958 (Ta 7): 248]. — *Aphelaria* subgen. *Tremellodendropsis* Corner 1953. — Holotype: *Aphelaria tuberosa* (Grev.) Corner.

Polyozus P. Karst. 1881 ("*Polyorus*"), not *Polyosus* Lour. 1790 (Rubiaceae) [1954 (Re 2): 471]. — Monotype: *Thelephora contorta* P. Karst.

Pseudotremellodendron D. Reid 1957 [1958 (Ta 7): 241]; fide Corner 1966 (TBS 49): 241. — Holotype: *Clavaria pusio* Berk.

SPECIAL LITERATURE.—Corner, *1966*.

tuberosum (Grev.) D. A. Crawf. 1954. — *Merisma* Grev. 1825 (Scotland); *Thelephora* Fr. 1828; *Stereum* Mass. 1892; *Aphelaria* Corner 1950. — Grev. 1825 S. 3: *pl. 178* (*Merisma*); Corner 1950: 192 *f. 61*; 1953 (AB II 17): 352 (*Aphelaria*); D. A. Crawf. 1954 (TNZ 82): 619 (*Tremellodendropsis*); Thind 1961: 36 *f. 3*; Reid & Austw. 1963 (GN 18): 317 (*Aphelaria*).

Thelephora contorta P. Karst. 1868 (Finland); cf. Bourd. & G. 1928: 82. —

[Tremellodendropsis]

Polyozus P. Karst. 1881. — P. Karst. 1885 I. 1: 5 *pl.* (*2*) *f. 8* (*Polyozus*); Bourd. & G. 1928: 82 (*Thelephora*).

Lachnocladium semivestitum B. & C. apud Berk. 1873 (U.S.A., Pennsylvania); fide Corner 1950: 192. — Burt 1919 (AMo 6): 271 *pl. 5 f. 4*; Coker 1923: 196 *pl. 78, pl. 90 fs. 7–11*; R. Heim 1934 (TrB 15): 44 *f. 9*.

Clavaria gigaspora Cotton 1907 (England) (n.v.); fide Coker 1923: 198 = *Lachnocladium semivestitum*, & Donk (type). — Cotton 1908 (TBS 3): 33; Cott. & Wak. 1919 (TBS 6): 179.

? *Podoscypha sergentiorum* Maire 1917 (BAN 8): 156 (Algeria); cf. D. Reid 1965: 289.

Stereum grantii Lloyd 1924 (U.S.A., Washington); fide D. Reid 1962 (Pe 2): 132. — Lloyd 1924 (LMW 7): 1314 *pl. 307 f. 3005*; D. Reid 1962 (Pe 2). 131 *f. 20*.

TREMISCUS (Pers.) Lév.

1846 [1958 (Ta 7): 249]. — *Tremella* sect. *Tremiscus* Pers. 1822. — Lectotype: *Tremella rufa* Jacq. per Pers.

Guepinia Fr. 1825, not ~ Bast. 1812 (Cruciferae), not ~ Hepp 1864 (Lichenes) [1958 (Ta 7): 199]. — Monotype: *Tremella helvelloides* DC. per Fr. — Sensu Bref., in part → *Femsjonia*, & em. Ulbrich → *Guepiniopsis* sensu; G. W. Mart. 1936 (AJB 23): 629 = *Dacryopinax* G. W. Mart.

Phlogiotis Quél. 1886 [1958 (Ta 7): 239]. — Monotype: *Tremella rufa* Jacq. per Pers. M.—*Gyrocephalus* Pers. sensu Bref. [1958 (Ta 7): 200].

SPECIAL LITERATURE.—Jørstad, *1942;* Nillson, *1958*.

helvelloides (DC. per Pers.) Donk 1958. — *Tremella* DC. 1805 ("*helveloides*") (France) (d.n.) per Pers. 1822: Fr. 1822; *Guepinia* Fr. 1828, not ~ Schw. 1832, not ~ P. Henn. 1895; *Gyrocephalus* Keissl. 1914; *Phlogiotis* G. W. Mart. 1936; ≡ *Gyrocephalus juratensis* Pers. 1824. — Tul. 1871 (JLS 13): 32; 1872 (ASn V 15): 218 *pl. 10 fs. 11–13*; Neuh. 1936 (ABS 28[1]): 3 *pl. 1*; 1938 (PM 2a): 51 *Ft. 7 fs. 6–15* (*Guepinia*); Pilát 1957 (SnP 13): 199 *pl. 37, pl. 38 f. 1* (*Gyrocephalus*); Poelt & Jahn 1964: *pl. 24 fig.* (*Phlogiotis*).

Tremella rufa Jacq. per Pers. 1822; fide Tul. 1872 (ASn V 15): 219. — *Tremella* Jacq. 1778 (Austria) (d.n.); *Guepinia* G. Beck 1884 (n.v.); *Phlogiotis* Quél. 1886; *Gyrocephalus* Bref. 1888. — Bref. 1888 U. 7: 131 *pl. 6 f. 27* (*Gyrocephalus*); Pat. 1889 T.a. 2: 69 *f. 688*; Bres. 1899 F.m.: 111 *pl. 103* (*Guepinia*); Atk. 1900: 207 *f. 197* / 1901: 207 *f. 208* (*Gyrocephalus*); Rolland 1910: 92 *pl. 105 f. 240*; Bres. 1932 (BIm 23): *pl. 1130* (*Guepinia*).

Peziza leveillei L. March. 1826 (BnW 1): 421 (Luxemburg).

TULASNELLACEAE Juel 1897 (73)

Tulasnellales Rea 1922.
Tulasnellineae Juel 1898.
Ceratobasidiaceae G. W. Mart. 1948.

SPECIAL LITERATURE.—Donk, *1954*, *1956a*, *1958c*; Martin, *1957*; Olive, *1957a*; Talbot, *1965*.

CERATOBASIDIUM D. P. Rog (**74**)

1935 [1957 (Ta 6): 23]. — Holotype: *Ceratobasidium calosporum* D. P. Rog.

Koleroga Donk 1958 (Fu 28): 35. — Holotype: *Koleroga noxia* Donk.

M.—*Pellicularia* Cooke [1957 (Ta 6): 106] sensu Höhn. 1910 (SbW 119): 395 ('type' reduced to *Corticium*); D. P. Rog. 1943, in part, including 'type'. — Cf. Donk 1954 (Re 2): 425–434; Talbot 1965 (Pe 3): 371.

SPECIAL LITERATURE.—Flentje, Stretton, & Hawn, *1963*; Gregor, *1932*, *1935*; Jackson, *1949*; Rogers, *1935*.

anceps (Bres. & Syd. apud Syd.) H. S. Jacks. 1949. — *Tulasnella* Bres. & Syd. apud Syd. 1910 (Germany); *Corticium* Gregor 1932. — D. P. Rog. 1932 (BG 94): 96 *fs. 69–79* (*Tulasnella*); Gregor 1932 (Am 30): 464; 1935 (PhZ 8): 401 *fs. 1–11* (*Corticium*); H. S. Jacks. 1949 (CJR 27): 243 *f. 1*, *pls. 1–3*; Boid. 1958: 103; Talbot 1965 (Pe 3): 386 *f. 6* (*Ceratobasidium*).

M.—*Corticium vagum* B. & C. apud Berk. sensu Pilát 1957 (ČM 11): 81 (*Ceratobasidium*).

Sclerotium deciduum J. J. Dav. 1919 (TWA 19): 689 (U.S.A., Wisconsin) (nom. anam.); fide H. S. Jacks. 1949 (CJR 27): 242, 243.

cornigerum (Bourd.) D. P. Rog. 1935. — *Corticium* Bourd. 1922 (France). — Bourd. & G. 1928: 241 *f. 74* (*Corticium*); D. P. Rog. 1935 (SIa 17): 5 *f. 2*; Boid. 1958: 102 *tpl. 3 fs. 5, 6*; M. P. Christ. 1959 (DbA 19): 48 *f. 42*; Talbot 1965 (Pe 3): 368 *fs. 1, 10, 11* (*Ceratobasidium*).

pseudocornigerum M. P. Christ. 1959 (Denmark). — M. P. Christ. 1959 (DbA 19): 46 *f. 41*.

EXOBASIDIELLUM Donk (**75**)

1931 [1956 (Re 4): 116]. — Monotype: *Exobasidium graminicola* Bres.

graminicola (Bres.) Donk 1966 (**75**). — *Exobasidium* Bres. in Krieg. 1891 (Germany) (n.v.); Bres. 1913. — Bres. 1893 (H 32): 32.

OLIVEONIA Donk (**76**)

1958 [1963 (Ta 12): 162] ≡ *Heteromyces* L. Olive 1957, not ~ Müll.-Arg. 1889 (Lichenes) [1963 (Ta 12): 161]. — Holotype: *Sebacina fibrillosa* Burt.

atrata (Bres.) Talbot 1965. — *Corticium* Bres. 1896 (Brazil); *Ceratobasidium* D. P. Rog. apud G. W. Mart. 1941. — G. W. Mart. 1941 (Ll 4): 262, distribution, synonymy; Rog. & Jacks. 1943 (Fa 1): 272, notes; G. W. Mart. 1952 (SIa 19[3]): 12; Wakef. 1952 (TBS 35): 64 *f. 36* (*Ceratobasidium*); Talbot 1965 (Pe 3): 381 *f. 20* (*Oliveonia*).

Tulasnella metallica J. Rick 1934 (Bro 3): 169 (Brazil); fide D. P. Rog. apud G. W. Mart. 1941 (Ll 4): 262 & Rog. & Jacks. 1943 (Fa 1): 272, 273.

Ceratobasidium plumbeum G. W. Mart. 1939 (Panamá); fide D. P. Rog. apud G. W. Mart. 1944 (Ll 4): 263 & Rog. & Jacks. 1943 (Fa 1): 273. — G. W. Mart. 1939 (M 31): 513 *fs. 21–27*.

THANATEPHORUS Donk (**77**)

1956 [1957 (Ta 6): 117]. — Holotype: *Hypochnus solani* Prill. & Del.

Moniliopsis Ruhland 1908 (nom. anam.) [1962 (Ta 11): 89]; fide Dugg. *1916* (**78**). — Monotype: *Moniliopsis aderholdii* Ruhland.

Orcheomyces Burgeff ex Hch. Wolff 1925 (VsG 106²): 155 (nom. anam.) (**79**). — Orcheomyces/Orcheomycetes Burgeff 1909 (non-binomial name) [1962 (Ta 11): 93]. — Type: to be selected.

SPECIAL LITERATURE.—Bernard, *1909*; Boerema, *1964*; Braun, *1930*; Burchard, *1929*; Butler, *1957*; Castellani, *1934a-c*; Costantin, *1924*; Costantin & Dufour, *1920*; Curtis, *1939*; Donk, *1953*; Dowdie, *1943*, *1959*; Duggar, *1915*, *1916*; Flentje, *1952*, *1956*; Flentje & Stretton, *1964*; Flentje, Stretton, & Hawn, *1963*; Frank, *1883*; Hawn & Vanterpool, *1953*; Kernkamp & al., *1952*; Kotila, *1929*; Marchionatto, *1946*; Mollison, *1913*; Müller, *1924*; Papavizas, *1965*; Prillieux & Delacroix, *1891*; Rolfs, *1903*, *1904*; Ruhland, *1908*; Saksena, *1961a*, *1961b*; Sanford & Skoropad, *1955*; Schenck, *1924*; Schultz, *1937*; Townsend & Willetts, *1954*; Whetzel & Arthur, *1925*; Whitney, *1964*; Wolff, *1926*.

cucumeris (Frank) Donk 1956 (**77**, **80**). — *Hypochnus* Frank 1883 (Germany). — Frank 1883 (LJb 2): 524 [cf. Donk 1958 (Fu 28): 31]; 1896: 219 (*Hypochnus*); M. P. Christ. 1960 (DbA 19): 68 *f. 48*; Warc. & Talb. 1962 (TBS 45): 500 *f. 3*; Talbot 1965 (Pe 3): 390 *f. 12* (*Thanatephorus*).

Hypochnus solani Prill. & Del. 1891 (France) (**77**, **80**); fide Donk 1956 (Re 3): 376 & 1958 (Fu 28): 32. — *Corticium* Cost. & Duf. 1895; *Corticium vagum* subsp. *C. solani* Bourd. & G. 1928; *Botryobasidium* Donk 1931; *Ceratobasidium* Pilát 1957. — Prill. & Del. 1891 (BmF 7): 220 *fig.*; K. O. Müll. *1923*, *1924* (*Hypochnus*): Donk 1931 (MmV 18–20): 117; D. P. Rog. 1935 (SIa 17): 18 (*Botryobasidium*), J. Daniels 1963 (TBS 46): 497 *fs. 3*, *4*, normal and atypical basidia (*Corticium*).

Hypochnus hellebori Rostr. 1897 (BT 21): 43 (Denmark).

Corticium vagum var. *solani* Burt apud Rolfs 1903 (U.S.A., Colorado), not *Corticium solani* (Prill. & Del.) Cost. & Duf. 1895; fide Burt 1926 (AMo 13): 295 = *Corticium vagum* B. & C. apud Berk. [sensu Burt, in part, = *Thanatephorus cucumeris*]. — Rolfs *1904*.

Hypochnus basicola Rostr. 1905 (Denmark) (n.v.). — Rostr. 1902: 334; Lind 1913: 354.

Hypochnus euphrasiae Lagerh. 1909 (Germany); fide Lundell 1959 (LNF 53–54): 23 No. 2657. — *Hypochnus* Lagerh. 1903 (lacking descr.: n.v.p.), 1909; *Corticium* Höhn. apud Jaap 1908 (basionym n.v.p.); *Monilia* Jaap 1908 (basionym n.v.p.); *Corticium* Höhn. apud Jaap 1910. — Lagerh. 1909 (SbT 3): (48) *f. 1* (*Hypochnus*).

Hypochnus betae Schenck 1924 (CBa 61): 322 *fs. 1–8* (Germany) (**81**).

M.—*Corticium vagum* B. & C. apud Berk. sensu Burt 1918 (AMo 5): 128 *f. 3* & 1926 (AMo 13): 295 *f. 3*, in part = *Hypochnus solani* Prill. & Del. & *Corticium vagum* var. *solani* Burt apud Rolfs (cited as syns.); fide Donk 1931 (MmV 18–20): 117

[Thanatephorus]

= *Botryobasidium solani*. — *Corticium vagum* sensu stricto = *Botryobasidium vagum* (B. & C. apud Berk.) D. P. Rog.

M.—*Hypochnus filamentosus* Pat. apud Pat. & Lag. sensu D. P. Rog. 1943 (Fa 1): 113 *f.* 11 (*Pellicularia*), in part (**80**); fide D. P. Rog., l.c. = *Hypochnus solani* (cited as syn.). — Flentje 1956 (TBS 39): 354; Talbot 1958 (Bo 7): 136 *f.* 8; Boid. 1958: 99 *f.* 26; Papavizas 1965 (M 57): 95 *fs.* 1, 2, 5 (*Pellicularia*).

Rhizoctonia rapae Westend. 1851 (BAB 18[2]): 402 (Belgium) (nom. anam.) (**82**); = *Rhizoctonia napae* West. & Wall. 1846 ("*napaeae*"; nom. nud.: n.v.p.) (n.v.) ex Kick 1867, Sacc. & Syd. 1899 ("*Napi*"); fide Dugg. 1915 (AMo 2): 444, 445 = *Rhizoctonia solani*.

Rhizoctonia solani Kühn 1858 (nom. anam.) (Germany) (**82**); fide Dugg. 1915 (AMo 2): 444 = imperfect state of *Corticium vagum* B. & C. apud Berk. [sensu Burt, in part]. — Dugg. 1915 (AMo 2): 424 *fs.* 5–9; Saks. & Vaart. 1961 (CJB 39): 634 *pl.* 1 *fs.* 5, 7.

Rhizoctonia betae Eidam 1888 (JsC 65): 261 (Prussian Silesia, now Poland) (nom. anam.) (**11**); fide Dugg. 1915 (AMo 2): 427, 450 = *Rhizoctonia solani*. — Pammel 1891 (BIE 15): 244 *pls.* 3–6; Dugg. 1899 (BCE 163): 239 *fs.* 49–55.

Rhizoctonia fusca Rostr. 1893 (Denmark) (nom. anam.) (n.v.); fide M. P. Christ. 1960 (DbA 19): 69 (listing of some of Rostrup's collections) = imperfect state. — Rostr. 1902: 595; Lind 1913: 551.

Moniliopsis aderholdii Ruhland 1908 (Germany) (**78**); fide Dugg. 1916 (AMo 3): 9. — *Rhizoctonia* Marchion. 1946 (n.v.). — Ruhland 1908 (ALF 6): 76 *fs.* 1–3.

Moniliopsis klebahnii Burchard 1929 (PhZ 1): 278, 293 *fs.* 1–4, 10–12 (Germany); fide Marchion. 1946 (RAP 26) 1–4 (n.v.) [cf. 1948 (RaM 27): 101] = *Rhizoctonia aderholdii*.

M.—*Rhizoctonia violacea* Tul. sensu auctt. nonn. — N. Bern. 1909 (ASn IX 9): 29 *f.* 4B.

praticola (Kotila) Talbot 1965. — *Corticium* Kotila 1929 (U.S.A., Michigan); *Pellicularia* Flentje 1956; *Ceratobasidium* L. Olive 1957 (incomplete ref.: n.v.p.); Saks. & Vaart. 1961; *Thanatephorus* Flentje apud Flentje & al. 1963 (incomplete ref.: n.v.p.). — Kotila 1929 (Ph 19): 1065 *fs.* 5, 6; Flentje, 1952 (NaL 170): 892 (*Corticium*); 1956 (TBS 39): 353 *fs.* 1–3 (*Pellicularia*); Boid. 1958: 100 *f.* 27, *tpl.* 3 *f.* 7 (*Corticium*); Saksena 1961 (IPh 13): 165 *fs.* 1, 2 (*Pellicularia*); Saks. & Vaart. 1961 (CJB 39): 636 *pl.* 1 *fs.* 6, 8 (*Ceratobasidium*); Papavizas 1965 (M 57): 95 *fs.* 3, 4, 6, 7 (*Pellicularia*); Talbot 1965 (Pe 3): 390 *f.* 13 (*Thanatephorus*). — Perhaps not specifically distinct from *T. cucumeris*.

Rhizoctonia praticola Saks. & Vaart. 1961 (CJB 39): 637 (nom. anam.) (lacking Latin descr. & indication of type: n.v.p.).

sterigmaticum (Bourd.) Talbot 1965. — *Corticium* Bourd. 1922 (France); *Ceratobasidium* D. P. Rog. 1935. — Bourd. & G. 1928: 240 *f.* 73 (*Corticium*); D. P. Rog. 1935 (SIa 17): 7 *f.* 4 (*Ceratobasidium*); Talbot 1965 (Pe 3): 390 *f.* 14 (*Thanatephorus*).

[Thanatephorus]

Nomina anamorphosium

given to species of *Rhizoctonia* that have not yet been authoratively reduced to *Thanatephorus cucumeris*, but which are apparently referable to *Moniliopsis* (**78**). The perfect states are still unknown; therefore some of these form-species may appear not to belong to *Thanatephorus*.

Rhizoctonia **alpina** E. Cast. 1934 (Italy) (nom. anam.). — E. Cast. *1934c*: 71 *f. 4, pl. 5 fig.*

Rhizoctonia **asclerotica** Burgeff 1936 (Germany) (nom. anam.) (n.v.p.). — Burgeff 1909: 18 *pl. 1 fs. 5–7* (Orcheomyces apiferae); 1936: 131 *fs. 119, 121.*

Rhizoctonia **callae** E. Cast. 1934 (Italy) (nom. anam.). — E. Cast. *1934c*: 73 *f. 6, pl. 6 fig.*; Saks. & Vaart. 1961 (CJB 39): 631 *pl. 1 f. 1.*

Rhizoctonia **cavendishiani** Burgeff 1932: 149 (Germany, greenhouses) (nom. anam.) (**83**). — ≡ *Rhizoctonia robusta* Burgeff 1936 (typonym; n.v.p.). — Burgeff 1911: 52 *fs. 26, 28b* [Mycelium Radicis (Oncidium) Cavendishiani]; 1936: 135 *fs. 131, 133b*; J. T. Curt. 1939 (AJB 26): 393 *f. 2* (*Rhizoctonia robusta*).

Orcheomyces **conopeae** Burgeff ex Hch. Wolff 1926 (Germany) (nom. anam.). — Orcheomyces conopeae Burgeff 1909 (non-binomial name: n.v.p.). — Burgeff 1909: 26 (Orcheomyces conopeae); Hch. Wolff 1926 (JwB 66): 25, 26 *f. 9.*

Rhizoctonia **fraxini** E. Cast. 1934 (Italy) (nom. anam.). — E. Cast. *1934c*: 70 *f. 3, pl. 5 fig.*

Rhizoctonia **goodyera-repentis** Cost. & Duf. 1920 (RgB 32): 532 (France) (nom. anam.).

Orcheomyces **helleborines-latifoliae** Hch. Wolff 1926 (JwB 66): 25, 26 *f. 12* (Switzerland) (nom. anam.).

Orcheomyces **helleborines-palustris** Hch. Wolff 1926 (JwB 66): 25, 26 *f. 11* (Switzerland) (nom. anam.).

Rhizoctonia **lanuginosa** N. Bern. 1909 (France, greenhouses) (nom. anam.) (**83**). — N. Bern. 1909 (ASn IX 9): 34 *f. 5*; Burgeff 1936: 135 *f. 130.*

Rhizoctonia **lupini** E. Cast. 1934 (Italy) (nom. anam.). — E. Cast. *1934c*: 70 *f. 2, pl. 4.*

Orcheomyces **maculati** Burgeff ex Hch. Wolff 1926 (Germany). — ≡ *Rhizoctonia anomala* Burgeff 1936 (typonym; n.v.p.). — Burgeff 1909: 22 (Orcheomyces maculatae); Hch. Wolff 1926 (JwB 66): 25, 26 *f. 10* (*Orcheomyces maculati*); Burgeff 1936: 132 (*Rhizoctonia anomala*).

Rhizoctonia **mucoroides** N. Bern. 1909 (France, greenhouses) (nom. anam.) (**83**). — N. Bern. 1909 (ASn IX 9): 33 *f. 4A*; Burgeff 1936: 138 *fs. 134–138*; J. T. Curt. 1939 (AJB 26): 393 *f. 3.*

Rhizoctonia **neottiae** (Hch. Wolff) Burgeff 1936. — *Orcheomyces* Hch. Wolff 1925 (Switzerland) (nom. anam.). — Hch. Wolff 1926 (JwB 66): 3 *fs. 1–5* (*Orcheomyces*); Burgeff 1936: 141 *f. 142*; J. T. Curt. 1939 (AJB 26): 393 (*Rhizoctonia*).

Rhizoctonia **pini-insignis** E. Cast. 1934 (Italy) (nom. anam.). — E. Cast. *1934c*: 72 *f. 5.*

[Thanatephorus]

Rhizoctonia **quercus** E. Cast. 1934 (Italy) (nom. anam.). — E. Cast. *1934c*: 74 *f* 7, *pl. 6 fig.*

Rhizoctonia **repens** N. Bern. 1909 (France, greenhouses) (nom. anam.) (**83**). — N. Bern. 1909 (ASn IX 9): 31 *f. 3*; Burgeff 1932: 150; 1936: 128 *fs. 115–117*; J. T. Curt. 1939 (AJB 26): 395 *f. 8*; Saks. & Vaart. 1961 (CJB 39): 633 *pl. 1 f. 3*.

Rhizoctonia **sclerotica** Burgeff 1936 (Germany) (nom. anam.) (n.v.p.). — Burgeff 1909: 18 *pl. 1 f. 8, pl. 2 fs. 9, 10* (Orcheomyces musciferae); 1936: 132 *fs. 122–124*; J. T. Curt. 1939 (AJB 26): 393 *f. 5*.

Rhizoctonia **sphacelati** Burgeff 1932: 149 (Germany, greenhouses) (nom. anam.) (**83**). — ≡ *Rhizoctonia gracilis* Burgeff 1936 (typonym; n.v.p.). — Burgeff 1911, 53 *fs. 27, 28a* [Mycelium Radicis (Oncidium) sphacelati]; 1936: 136 *fs. 132, 133a*; J. T. Curt. 1939 (AJB 26): 393 (*Rhizoctonia gracilis*).

Rhizoctonia **stahlii** Burgeff 1936 (Germany) (nom. anam.) (n.v.p.). — Burgeff 1909: 23 *pl. 3 fs. 19–22* (Orcheomyces chloranthae F.); 1936: 132 *fs. 125–129*; J. T. Curt. 1939 (AJB 26): 393 *f. 4*.

Rhizoctonia **subtilis** Burgeff 1936 (Germany; greenhouse) (nom. anam.) (n.v.p.) (**83**). — Burgeff 1911: 63 *f. 35* [Mycelium Radicis (Lycaste) Skinneri]; 1936: 130 *f. 118*; J. T. Curt. 1939 (AJB 26): 393 *f. 6*.

Rhizoctonia **tuliparum** (Kleb.) Whetz. & Arth. 1925 (**84**). — *Sclerotium* Kleb. 1905 (Germany) (nom. anam.), not ~ Schlechtend. 1831. — Whetz. & Arth. *1925*; Boerema *1964*.

TULASNELLA J. Schroet. (**85–88**)

1888 [1957 (Ta 6): 121]. — Monotype: *Tulasnella lilacina* J. Schroet.

Prototremella Pat. 1888 [1957 (Ta 6): 112]. — Monotype: *Prototremella tulasnei* Pat.

Pachysterigma J.-Ols. apud Bref. 1888 [1957 (Ta 6): 106]. — Lectotype: *Pachysterigma fugax* J.-Ols. apud Bref.

Muciporus Juel 1897 (nom. conf.) [1957 (Ta 6): 84]. — Lectotype: *Muciporus corticola* (Fr.) Juel [sensu Juel], q.v.

Gloeotulasnella Höhn. & L. 1906 (nom. prov.: n.v.p.), 1908 [1957 (Ta 6): 70] (**86**). — Lectotype: *Tulasnella cystidiophora* Höhn. & L.

SPECIAL LITERATURE.—Boudier, *1896*; Brefeld, *1888b*; Burt, *1920*; Costantin, *1889*; Juel, *1897, 1915*; Olive, *1957b*; Patouillard, *1888*; Raunkiaer, *1918*; Rogers, *1932, 1933*.

albida Bourd. & G. 1928 (France). — Bourd. & G. 1928: 59; sensu L. Olive 1944 (JMS 60): 22 *pl. 7 fs. 11–17*; sensu M. P. Christ. 1959 (DbA 19): 36 *f. 27*.

albolilacea Bourd. & G. 1924 (France). — Bourd. & G. 1928: 59.

allantospora Wak. & Pears. 1923 (England). — Wak. & Pears. 1923 (TBS 8): 220 *f. 7*; Bourd. & G. 1928: 60; D. P. Rog. 1933 (Am 31): 199 *pl. 6 f. 5*; sensu M. Christ. 1959 (DbA 19): 38 *f. 33*.

[Tulasnella]

Tulasnella rubropallens Bourd. & G. 1924 (France), fide D. P. Rog. 1933 (Am 31): 190. — Bourd. & G. 1924 (BmF 39): 264; 1928: 60, in obs., *f. 36.*

araneosa Bourd. & G. 1924 (France). — Bourd. & G. 1928: 62 *f. 44*; M. P. Christ. 1959 (DbA 19): 37 *f. 30.* — American descriptions not cited.

bifrons Bourd. & G. 1924 (France). — Bourd. & G. 1928: 60 *f. 37*; sensu D. P. Rog. 1933 (Am 31): 192 *pl. 6 f. 7*; L. Olive 1944 (JMS 60): 22 *pl. 2 f. 4, pl. 7 fs. 18–26.*

brinkmanni Bres. 1920 (Germany). — Bres. 1920 (Am 18): 50. — An *T. violacea*; cf. D. P. Rog. 1933 (Am 31): 187.

calospora (Boud.) Juel 1897 (**89**, **91**). — *Prototremella* Boud. 1896 (France); *Gloeotulasnella* D. P. Rog. 1933. — Bres. 1903 (Am 1): 114; Burt 1926 (AMo 13): 328; Bourd. & G. 1928: 57; A. Pears. 1928 (TBS 13): 72 *f. 5* (*Tulasnella*); D. P. Rog. 1933 (Am 31): 201 *pl. 7 f. 15*; L. Olive 1946 (JMS 62): 69 *pl. 13 fs. 16–20*; M. P. Christ. 1959 (DbA 19): 41 *f. 35A* (*Gloeotulasnella*).

Muciporus deliquescens Juel 1897 (Sweden) (nom. conf.); fide Juel 1914 (ABS 14[1]): 1–8 = *Polyporus corticola* Fr. overgrown by *T. deliquescens*, q.v. — Juel 1897 (BsV 23[12]): 24 *pl. (1) fs. 1–15.*

Tulasnella deliquescens Juel 1914 (ABS 14[1]): 7, 8 (Sweden); fide D. P. Rog. 1933 (Am 31): 201.

curvispora Donk 1966 (**91**).

M.—*Pachysterigma rutilans* J.-Ols. apud Bref. sensu D. P. Rog 1933 (Am 31): 189 *pl. 6 f. 4* (*Tulasnella*).

cystidiophora Höhn. & L. 1906 (Finland). — *Gloeotulasnella* Höhn. & L. 1908 (generic name n.v.p.), Juel 1914; *Tremella* Oud. 1920 (error). — Höhn. & L. 1906 (SbW 115): 1557 *f. 1* (*Tulasnella*); Bourd. & G. 1928: 64 (*Gloeotulasnella;* A. Pears. 1928 (TBS 13): 73 *f. 7* (*Tulasnella*); D. P. Rog. 1933 (Am 31): 195 *pl. 7 f. 9*; L. Olive 1951 (BTC 78): 111 *fs. 44–50* (*Gloeotulasnella*).

M.—*Prototremella tulasnei* Pat. sensu P. Karst. 1896 (H 35): 45; fide Höhn. & L. 1906 (SbW 115): 1557.

eichleriana Bres. 1903 (Poland). — Bres. 1903 (Am 1): 113; Brinkm. 1916 (Jwf 44): 47; Burt 1920 (AMo 6): 255 *f. 1*; Bourd. & G. 1928: 57; ? Jo. Erikss. 1958 (Sbu 16[1]): 44 *fs. 5a, b.*

fugax (J.-Ols. apud Bref.) Juel 1897 (**90**). — *Pachysterigma* J.-Ols. apud Bref. 1888 U. 8: 6 *pl. 1 fs. 3, 4* (Germany); *Corticium* Sacc. 1891; *Prototremella* Boud. 1896. — An *T. violea*; cf. D. P. Rog. 1933 (Am 31): 184, 186.

fuscoviolacea Bres. 1900 (Italy). — Burt 1920 (AMo 6): 258 *f. 3*; Bres. 1932 (BIm 22): *pl. 1126 f. 1*; D. P. Rog. 1933 (Am 31): 188 *pl. 6 f. 3.* For Bourd. & G. 1928: 58 *f. 34*, see D. P. Rog., l.c.

griseorubella Litsch. 1932 (Sweden). — *Gloeotulasnella* Pilát (1957). — Litsch. 1932 (SbT 26): 448 *f. 1*; ? M. P. Christ. 1959 (DbA 19): 36 *f. 38.*

helicospora Raunk. 1919 (Denmark) (**89**). — *Gloeotulasnella* M. P. Christ. 1959. — Raunk. 1919 (BT 36): 205, 209 *f. 1* (*Tulasnella*); M. P. Christ. 1959 (DbA 19): 40 *f. 35* (*Gloeotulasnella*). — Fide D. P. Rog. 1933 (Am 31): 201 = *T. calospora.*

[Tulasnella]

hyalina Höhn. & L. 1908 (Austria). — *Gloeotulasnella* Höhn. & L. 1908 (nom. nud.: n.v.p.), Juel 1914. — Höhn. & L. 1908 (SbW 117): 1114 *f. 8* (*Tulasnella*); Brinkm. 1916 (Jwf 44): 47; Bourd. & G. 1928: 63; D. P. Rog. 1933 (Am 31): 196 *pl. 7 f. 10*; L. Olive 1954 (BTC 81): 338 *fs. 40–48* (*Gloeotulasnella*); 1957 (M 49): 678 (*Tulasnella*).

Gloeotulasnella metachroa Bourd. & G. 1924 (France), fide L. Olive 1957 (M 49): 678. — Bourd. & G. 1928: 63 *f. 42*; D. P. Rog. 1933 (Am 31): 197 *pl. 7 f. 11*.

inclusa (M. P. Christ.) Donk 1966 (**92**). — *Gloeotulasnella* M. P. Christ. 1959 (Denmark). — M. P. Christ. 1959 (DbA 19): 41 *f. 36* (*Gloeotulasnella*).

lactea Bourd. & G. 1924 (France). — Bourd. & G. 1928: 57 *f. 31*; D. P. Rog. 1933 (Am 31): 191 *pl. 6 f. 6*; ? M. P. Christ. 1959 (DbA 19): 36 *f. 29*.

microspora Wak. & Pears. 1923 (England). — Wak. & Pears. 1923 (TBS 8): 220 *f. 8* (*Tulasnella*); D. P. Rog. 1933 (Am 31): *pl. 6 f. 1f* (*T. violea*, in part).

obscura Bourd. & G. 1924 (France). — Bourd. & G. 1928: 62 *f. 40*.

pallida Bres. 1903 (Poland). — Bres. 1903 (Am 1): 114. — An *T. violacea*; cf. D. P. Rog. 1933 (Am 31): 187.

pinicola Bres. 1903 (Poland). — *Gloeotulasnella* D. P. Rog. 1933. — Bres. 1903 (Am 1): 114; Bourd. & G. 1928: 60 (*Tulasnella*); D. P. Rog. 1933 (Am 31): 199 *pl. 7 f. 13*; L. Olive 1946 (M 38): 543 *fs. 3: 1–9, f. 4B*; 1947 (M 39): 107 (*Gloeotulasnella*).

pruinosa Bourd. & G. 1924 (France). — Bourd. & G. 1928: 59 *f. 35*; sensu D. P. Rog. 1933 (Am 31): 193 *pl. 6 f. 8*; L. Olive 1954 (BTC 81): 335 *fs. 23–28;* sensu M. P. Christ. 1959 (DbA 19): 37 *f. 31*.

rosella Bourd. & G. 1924 (France) (**89**). — Bourd. & G. 1928: 58 *f. 33*. — Fide D. P. Rog. 1933 (Am 31): 201 = *T. calospora*.

rutilans (J.-Ols. apud Bref.) Juel 1897 (**91**). — *Pachysterigma* J.-Ols. apud Bref. 1888 (Germany); *Corticium* Sacc. 1891, not ~ Fr. 1874; *Prototremella* Pat. 1900. — Bref. 1888 U. 8: 6 *pl. 1 fs. 5–7* (*Pachysterigma*). — Cf. *T. calospora*.

sordida Bourd. & G. 1924 (France). — *Gloeotulasnella* M. P. Christ. 1959. — Bourd. & G. 1928: 61 *f. 39*; A. Pears. 1928 (TBS 13): 72 *f. 6* (*Tulasnella*); M. P. Christ. 1959 (DbA 19): 43 *f. 38* (*Gloeotulasnella*).

traumatica (Bourd. & G.) ex Sacc. & Trott. 1912, L. Olive 1957 (France). — *Gloeotulasnella* Bourd. & G. 1909 (as a sp. of *Tulasnella:* n.v.p.); *Gloeotulasnella* Juel 1914. — Bourd. & G. 1928: 64 *f. 43*; D. P. Rog. 1933 (Am 31): 197; L. Olive 1946 (JMS 62): 69 *pl. 14 fs. 1–18* (*Gloeotulasnella*); 1957 (M 49): 677 (*Tulasnella*).

Gloeotulasnella opalea D. P. Rog. 1933 (U.S.A., Iowa), fide Rog. & Jacks. 1943 (Fa 1): 306. — D. P. Rog. 1933 (Am 31): 198 *pl. 7 f. 2*.

tremelloides Wak. & Pears. 1918 (England). — *Gloeotulasnella* D. P. Rog. 1933. — Wak. & Pears. 1918 (TBS 6): 70 *fig.*; Bourd. & G. 1928: 61 (*Tulasnella*); D. P. Rog. 1933 (Am 31): 201 *pl. 7 f. 14* (*Gloeotulasnella*).

vernicosa Bourd. & G. 1924 (France). — Bourd. & G. 1928: 61 *f. 38*.

[Tulasnella]

violacea (J.-Ols. apud Bref.) Juel 1897 (**88**). — *Pachysterigma* J.-Ols. apud Bref. 1888; *Corticium* Sacc. 1891. — Bref. 1888 U. 8: 6 *pl. 1 fs. 8–10* (*Pachysterigma*); sensu Bres., cf. 1903 (Am 1): 114 (var. *lilacea*); Wak. & Pears. 1923 (TBS 8): 219 *f. 6*; Bourd. & G. 1928: 57 *f. 32*; D. P. Rog. 1933 (Am 31): 186 *pl. 6 f. 2*; L. Olive 1946 (JMS 62): 69 *pl. 14 fs. 19–27*; 1947 (M 39): 106 *f. 16*; M. P. Christ. 1959 (DbA 19): 38 *f. 32* (*Tulasnella*).

violea (Quél.) Bourd. & G. 1909. — *Hypochnus* Quél. 1883 (France); *Corticium* Cost. & Duf. 1891, W. G. Sm. 1908. — Bourd. & G. 1909 (BmF 25): 31; Burt 1920 (AMo 6): 257 *f. 2*; Bourd. & G. 1928: 56; Donk 1931 (MmV 18–20): 116; D. P. Rog. 1933 (Am 31): only as to *pl. 6 fs. a–c*; Jo. Erikss. 1958 (Sbu 16[1]): 44 *fs. 5d, e*; M. P. Christ. 1959 (DbA 19): 35 *f. 26*.

Tulasnella lilacina J. Schroet. 1888: 397 (Prussian Silesia, now Poland) (**93**); fide Bourd. & G. 1909 (BmF 25): 31. — *Corticium* Sacc. 1888, not ~ B. & Br. 1873; not ~ (Quél.) Big. & Guill. 1913; *Prototremella* Pat. 1900.

Prototremella tulasnei Pat. 1888 (France), fide Bourd. & G. 1909 (BmF 25): 31. — *Tulasnella* Juel 1897. — Pat. 1888 (JBM 2): 270 *fs. 1–3* (*Prototremella*). — Sensu P. Karst. → *T. cystidiophora*.

Corticium pinicola (Tul.) Sacc. 1888 (**93**); fide Juel 1897 (BsV 23[12]): 22. — *Corticium incarnatum* var. *pinicola* Tul. 1872 (France); ≡ *Tulasnella incarnata* Bres. apud Strass. 1900 (typonym) (**93**, **94**), not ~ (J.-Ols. apud Bref.) Juel 1897. — Tul. 1872 (ASn V 15): 227 *pl. 10 fs. 3–5* ["*Corticium incarnatum* Fr. (*pinicola*)"].

? *Pachysterigma incarnatum* J.-Ols. apud Bref. 1888 U. 8: 7 *pl. 1 fs. 1, 2* (Germany) (**94**). — *Corticium* Sacc. 1891; *Tulasnella* Juel 1897, not ~ Bres. apud Strass. 1900. — Sensu Bourd. & G. 1909 (BmF 25): 31 (*Tulasnella*).

Tulasnella thelephorea (Juel) Juel 1914. — *Muciporus corticola* f. *thelephoreus* Juel 1897 (Sweden). — Juel 1897 (BsV 23[12]): 23 *pl. (1) fs. 16–21, 23–32* (*Muciporus corticola* f.).

M.—*Thelephora incarnata* Pers. per Fr. sensu Tul. 1872 (ASn V 15): 227 ["*Corticium incarnatum* Fr. (*pinicola*)"] (**94**): fide J. Schroet. 1888: 397 = *Tulasnella lilacina*. — See *Corticium pinicola* (Tul.) Sacc., above.

M.—*Polyporus corticola* Fr. sensu Juel 1897 (*Muciporus*), fide Juel 1914 (ABS 14[1]): 1–8 = *Polyporus corticola* overgrown by *T. thelephorea*.

Incertae sedis

Thelephora **caesiocarnea** Britz. 1897 (BCb 71): 90 [*pl. 716 f. 68*] (Germany). — Incompletely described.

UTHATOBASIDIUM Donk

1956 [1957 (Ta 6): 121]. — Holotype: *Hypochnus fusisporus* J. Schroet.

fusisporum (J. Schroet.) Donk 1958. — *Hypochnus* J. Schroet. 1888 (Prussian Silesia, now Poland); *Corticium* Brinkm. 1904, misapplied, not ~ Cooke & Ell.

[Uthatobasidium]

1897; *Peniophora* Höhn. & L. 1906, misapplied. — Donk 1958 (Fu 28): 22; M. P. Christ. 1959 (DbA 19): 49 *f. 43*; Talbot 1965 (Pe 3): 391 *f. 15*. — Sensu Brinkm., Höhn. & L. = *Jaapia ochroleuca* (Bres. apud Brinkm.) Nannf. & Erikss. M.—*Hypochnus flavescens* Bon. sensu Fuck. 1871 (Jna 25–26): 291; fide Donk 1958 (Fu 28): 22. — Höhn. 1904 (ÖbZ 54): 428, in obs.; Höhn. & L. 1906 (SbW 115): 1607 & 1907 (SbW 116): 835 *f. 17*, at least in part; Wak. & Pears. 1920 (TBS 6): 317 *fig.*; Bourd. & G. 1928: 239 (*Corticium*); D. P. Rog. 1935 (SIa 17): 13 *f. 8*; Jo. Erikss. 1958 (Sbu 16[1]): 59 *fs. 12a–e* (*Botryobasidium*); Boid. 1958: 95 *tpl. 3 f. 10* (*Pellicularia*).

ochraceum (Mass.) Donk 1958. — *Coniophora* Mass. 1889 (England); *Botryobasidium* Donk apud D. P. Rog. 1935. — D. P. Rog. 1935 (SIa 17): 16 *f. 7* (*Botryobasidium*); Donk 1958 (Fu 28): 23; M. P. Christ. 1959 (DbA 19): 50 *f. 45* (*Uthatobasidium*).

Corticium frustulosum Bres. 1903 (Poland); fide Jo. Erikss. 1958 (Sbu 16[1]): 59. — Bres. 1911 (Am 9): 425; Bourd. & G. 1928: 239, 240 (*Corticium*); Jo. Erikss. 1958 (Sbu 16[1]): *f. 12f* (under *Botryobasidium ochraceum*).

Coniophora vaga Burt 1917 (AMo 4): 251 *f. 8* (U.S.A., New York); fide D. P. Rog. 1943 (Fa 1): 105, 106 = *Pellicularia flavescens* (Bon.) D. P. Rog. [sensu D. P. Rog., in part = *U. ochraceum*]. — ≡ *Corticium fenestratum* Overh. — Overh. 1934 (M 26): 510 *pl. 55 f. 5* (*Corticium fenestratum*).

Incertae sedis

citriforme M. P. Christ. 1959 (Denmark). — M. P. Christ. 1959 (DbA 19): 49 *f. 44*.

DACRYMYCETALES Lindau 1897 (95, 96)

Calocerales Rea 1922.
Dacrymycetineae J. Schroet. 1885.
Dacrymycetaceae J. Schroet. 1888.
Caloceraceae Rea 1922.
Caloceroideae P. Karst. 1876.
Ditioloideae P. Karst. 1876.
Dacrymycetoideae Sacc. 1888.

SPECIAL LITERATURE.—Brasfield, *1938*; Donk, *1964*; Kennedy, *1959a*; Kobayasi, *1939c*; Martin & Fisher, *1933*; McNabb, *1964*, *1965a–e*; Yen, *1947*.

CALOCERA (Fr.) Fr.

1825 [1958 (Ta 7): 173; 1963 (Ta 12): 166]. — *Clavaria* subgen. *Calocera* Fr. 1821. — Lectotype: *Clavaria viscosa* Pers. per Fr.

Corynoides S. F. Gray 1821 [1958 (Ta 7): 175; McNabb 1965 (NZB 3): 31–32]. — Lectotype: *Clavaria cornea* Batsch.

Dacryomitra Tul. 1872 [1958 (Ta 7): 177] — Monotype *Dacryomitra pusilla* Tul.

Calopposis Lloyd 1925 [1958 (Ta 7); 173]; fide McNabb 1965 (NZB 3): 32, 33. — Monotype: *Calopposis nodulosa* Lloyd.

[Calocera]

SPECIAL LITERATURE.—McNabb, *1965a*.

cavarae Bres. apud Cavara 1896 (Italy) (n.v.) (**97**). — McNabb 1965 (NZB 3): 40 *f. 1f* (*Calocera viscosa* var.).

cornea (Batsch per Fr.) Fr. 1827: Fr. 1832 (**98**). — *Clavaria* Batsch 1783 (Germany) (d.n.) per Fr. 1821; *Corynoides* S. F. Gray 1821. — Batsch 1786: 229 *pl. 28 f. 161*; Pers. 1797 C.: 186/54; Sow. 1796: *pl. 40* (*Clavaria*); L. Tul. 1853 (ASn III 19): 224; Pat. 1883 T.a. 1: 68 *f. 156*; Bref. 1888 U. 7: 164 *pl. 11 fs. 14–17*; Coker 1920 (JMS 35): 181 *pl. 65 fs. 5, 6*; Bourd. & G. 1928: 73; M. C. Fish. 1931 (PIa 38): 120 *tpl. 1 fs. 10–14*; Y. Kobay. 1939 (SRT 4): 222 *f. 6A*; McNabb 1965 (NZB 3): 41 *fs. 1g, 2c* (*Calocera*).

Clavaria aculeiformis Bull. 1789 (France) (d.n.); fide Pers. 1797 C.: 186/54 & Fr. 1821: 487. — *Clavaria* Bull. per St-Am. 1821; *Tremella* Pers. 1822; *Calocera* Wallr. 1833. — Bull. 1789: *pl. 463 f. 4*; 1791 H.: 214 (*Clavaria*).

? *Clavaria striata* Hoffm. 1796 (Germany) (d.n.) (**100**); fide McNabb 1965 (NZB 3): 41, 42. — *Calocera* (Hoffm.) per Fr. 1838. — Hoffm. 1796: *pl. 7 f. 1* (*Clavaria*); Bref. 1888 U. 7: 166 *pl. 11 f. 18*; Bourd. & G. 1928: 73 (*Calocera*).

Tremella palmata Schum. 1803 (Denmark) (d.n.); fide Neuhoff 1936 (ABS 28[1]): 36, 37 (forma). — *Tremella* Schum. per Pers. 1822, not ~ Hedw. f. 1798 (generic name n.v.p.; Chlorophyceae), not ~ Schw. 1832; *Calocera* Fr. 1838. — Bref. 1888 U. 7: 165 *pl. 11 fs. 19–21*; Lloyd 1920 (LMW 6): 924 *pl. 146 fs. 1656, 1657*; Bourd. & G. 1928: 73 (*Calocera*).

? *Clavaria cincta* (Pers.) per Secr. 1833, misapplied (**99**). — [*Clavaria cornea* var. "*β. Cl. cincta*" Pers. 1797 C.: 186/54. —] *Clavaria cornea* var. *cincta* Pers. 1801: 596 (Germany) (d.n.). — Sensu Secr. → *Calocera furcata*.

M.—*Clavaria fasciculata* Pers. sensu Bon. 1851: 153 *pl. 11 f. 235* (*Calocera*); cf. McNabb 1965 (NZB 3): 51.

M.—*Clavaria corticalis* Batsch sensu Bref. 1888 U. 7: 164 (*Calocera*).

furcata (Fr.) Fr. 1827: Fr. 1832. — *Clavaria* Fr. 1821 (Sweden). — P. Karst. 1882 (BFi 37): 192; Quél. 1881 (Crf 9): 670 (*Calocera*); Bourd. & G. 1928: 73 (*Calocera flammea* var.); Neuh. 1936 (ABS 28[1]): 36, 37 (*Calocera cornea* f.); Bres. 1932 (BIm 23): *pl. 1107*; McNabb 1965 (NZB 3): 42 *f. 1h* (*Calocera*).

Ramaria medullaris Holmskj. 1799 (Denmark) (d.n.). — Holmskj. 1799: 79 *pl.* [*18*].

Calocera flavida Lloyd 1924 (LMW 7): 1278 *pl. 291 f. 2850* (Japan); fide McNabb 1965 (NZB 3): 42, 43. — Y. Kobay. 1939 (SRT 4): 225 *f. 6G, pl. 19 f. E*.

M.—*Clavaria cornea* var. *cincta* Pers. sensu Secr. 1833 M. 3: 252 (*Clavaria cincta*) (**99**); fide Fr. 1838: 581 ("Secr. no. 30"). — Sensu originario, = *Calocera cornea*.

M.—*Calocera mucida* (Pers. per Fr.) Wettst. sensu Wettst. 1885 (VW 35): 553 ("Oed. ... [= Hornem.]"); misapplied name re-introduced to replace *Calocera furcata*. — Sensu originario (Pers.) = "*Clavaria*" *mucida* Pers. per Fr.; sensu Hornem., a nomen dubium.

[Calocera]

M.—*Calocera mucida* Sacc. ("Hornem. . . . non Pers.") sensu Sacc. 1916: 1221; name misapplied to replace *Calocera furcata*. — Sensu Hornem., a nomen dubium

glossoides (Pers. per Fr.) Fr. 1827: Fr. 1832 (**101**). — *Clavaria* Pers. 1797 (Germany) (d.n.) per Fr. 1821; *Tremella* Pers. 1822; *Dacryomitra* Cost. & Duf. 1891, misapplied, not ~ Bref. 1888. — Pers. 1797 C.: 200/68 (*Clavaria*); Quèl. 1888: 456; Bourd. & G. 1928: 74 (*Calocera*). — Sensu Cost. & Duf. → *Dacryomitra glossoides* Bref. = *Dacrymitra pusilla*, see next species.

M.—*Calocera cornea* var. *subsimplex* Bres. apud S. Schulz. sensu Britz. 1894 (BAg 31): 179 [*pl. 759 f. 32*] (*Calocera subsimplex*) (**104**).

Dacryomitra **pusilla** Tul. 1872 (France) (**101**). — *Dacrymyces* Lapl. 1894. — Tul. 1872 (ASn V 15): 217 *pl. 9 fs. 5–7*; Pat. 1900: 31 *f. 23*; Bourd. & G. 1928: 70; Nannf. 1947 (SbT 41): 334 (*Dacryomitra*).

Dacryomitra glossoides Bref. 1888 (Germany), not ~ (Pers. per Fr.) Cost. & Duf.; fide McNabb 1965 (NZB 3): 45, 46 = *Calocera glossoides* [sensu McNabb]. — *Dacrymyces* Lapl. 1894. — Bref. 1888 U. 7: 162 *pl. 11 fs. 1, 2*; Bourd. & G. 1928: 70 (*Dacryomitra*). — Sensu Lloyd 1917 (LMW 5): 742 *f. 1113* (*Dacryomitra*) = an apparently unnamed *Dacrymyces* sp., fide McNabb 1965 (NZB 3): 46; sensu Brasf. 1939 (Ll 1): 157 *fs. 20–24* (*Dacryomitra*), also to be excluded.

M.—*Clavaria glossoides* Pers. sensu Cost. & Duf. 1891 (*Dacryomitra*). — McNabb 1965 (NZB 3): 45 *f. 1k*, in part (*Calocera*).

viscosa (Pers. per Fr.) Fr. 1827: Fr. 1828. — *Clavaria* Pers. 1794 (Germany) (d.n.) per Fr. 1821, not ~ (Pers.) Poir. 1811 (d.n.); *Merisma* Spreng. 1827. — Pers. 1797 C.: 185/53 *pl. 1 f. 5* (*Clavaria*); Quél. 1872 (MMb II 5): 311 *pl. 21 f. 5*; P. Karst. 1882 (BFi 37): 191; Bref. 1888 U. 7: 166 *pl. 11 fs. 6–13*; J. Schroet. 1888: 402; Dangeard 1895 (Bot 4): 142 *fs. 8, 9*; Burt 1929: 108 *pl. 100 fig.*; Bres. 1932 (BIm 23): *pl. 1106*; Y. Kobay. 1939 (SRT 4): 226 *f. 6F, pl. 19 f. D*; Poelt & Jahn 1964: *pl. 25 fig.*; McNabb 1965 (NZB 5): 39 *f. 1e* (*Calocera*).

Clavaria brachyorrhiza Scop. 1770: 150 *pl. 1 f. 10* (Hungaria) (d.n.); fide Fr. 1828 E. 1: 233, & cf. Fr. 1838: 582 in obs. under *C. stricta*.

Clavaria flammea Schaeff. 1774 (Germany) (d.n.): fide Pers. 1797 C.: 185/53 & Fr. 1821: 486. — *Calocera* (Schaeff.) per Secr. 1833, Wallr. 1833, not ~ Fr. 1851. — Schaeff. 1774: 118 [*pl. 174*] (*Clavaria*); Bon. 1851: *pl. 11 f. 237*, in text on p. 153 as *C. viscosa*; Rolland 1910 : *pl. 104 f. 236*; Bourd. & G. 1928: 73 (*Calocera*).

Ramaria gelatinosa Holmskj. 1799: 81 *pl.* [*19*] (Denmark) (d.n.), not ~ (Coker) Corner 1950; fide Fr. 1821: 486.

? *Clavaria aurea* Humb. 1793: 115 (Germany) (d.n.) per Steud. 1824, not ~ Schaeff. per Fr. 1838; fide Pers. 1797 C. 185/53.

Incertae sedis

Guepinia **brefeldii** Lloyd 1923 (LMW 7): 1229 *pl. 258 fs. 2556, 2557* (Italy) (**102**).
cornigera G. Beck 1886 (VW 35): 363 (Austria).

[Calocera]

stricta Fr. 1838: 581 (Sweden) (**103**).

subsimplex (Bres. apud S. Schulz.) Britz. 1894, misapplied (**104**) — *Calocera cornea* var. Bres. apud S. Schulz. 1885 (H 24): 149 (Yugoslavia, Slavonia). — Sensu Britz. → *Calocera glossoides*.

CERINOMYCES G. W. Mart. (**105**)

1949 [1957 (Ta 6): 23]. — Holotype: *Cerinomyces pallidus* G. W. Mart.
M.—*Ceracea* Cragin sensu Pat. apud Pat. & Lag. 1893 [1958 (Ta 7): 174].

SPECIAL LITERATURE.—Martin, *1949*; McNabb, *1964*; Parmasto, *1961*.

crustulina (Bourd. & G.) G. W. Mart. 1949 (**105**).. — *Ceracea* Bourd. & G. 1924 (France). — Bourd. & G. 1928: 66 (*Ceracea*); G. W. Mart. 1949 (M 41): 85 *f. 10*; Jo. Erikss. 1958 (Sbu 16[1]): 47 *f. 5e–g*; McNabb 1964 (NZB 2): 417 *f. 1a* (*Cerinomyces*). — Sensu Brasf. 1940, fide G. W. Mart. 1952 (SIa 19[3]): 28 = *Cerinomyces pallidus* G. W. Mart. (extra-European).

DACRYMYCES Nees per Fr. (**106**, **107**)

1821 [1958 (Ta 7): 176; 1963 (Ta 12): 166; & Donk 1964 (PNA 67): 1]. — *Dacryomyces* [!] Nees 1816 (d.n.). — Lectotype: *Dacrymyces stillatus* Nees.
? *Arrhytidia* B. & C. 1849 [1958 (Ta 7): 167] (**108**). — Monotype: *Arrhytidia flava* B. & C.
Septocolla Bon. 1851 [1958 (Ta 7): 243]. — Monotype: *Septocolla adpressa* Bon.
M.—*Dacrymyces* Nees sensu Corda 1838 (restricted to imperfect states).

SPECIAL LITERATURE.—Bandoni, *1963b*; Buller, *1922*; Field, *1963*; Gilbert, *1922*; Goodwin, *1953*; Hanna & Bulat, *1953*; Kennedy, *1956*, *1957*, *1959a*; Kobayasi, *1939b*; Magasi, *1965a*, *1965b*; Massee, *1891*; Neuhoff, *1934*; Raitviir, *1962*.

Septocolla **adpressa** Bon. 1851: 152 *pl. 12 f 247* (Germany), not *Dacrymyces adpressus* Grogn. 1863; not *D. adpressus* Y. Kobay. 1939.

caesius Sommerf. 1826 (Norway): Fr. 1828. — Fr. 1828 E. 2: 36; Neuh. 1936 (ABS 28[1]): 43, 50.
M.—*Tremella hyalina* Pers. sensu Quél. apud Bourd. & G. 1928: 67 (*Dacrymyces deliquescens* var.); cf. Neuh. 1936 (ABS 28[1]): 50.

chrysocoma (Bull. per St-Am.) L. Tul. 1853. — *Peziza* Bull. 1787 (France) (d.n.) per St-Am. 1821: Fr. 1822; *Hymenoscyphus* S. F. Gray 1821, misapplied; *Bulgaria* Sommerf. 1826; *Calloria* Fr. 1849; *Orbilia* Sacc. 1889, misapplied; *Guepiniopsis* Brasf. 1938, misapplied. — Bull. 1787: *pl. 376 f. 2*; 1791 H.: 254; sensu Fr. 1822: 140 (*Peziza*): L. Tul. 1853 (ASn III 19): 211, 221, 'basidiferous state' only; Bourd. & G. 1928: 69 *f. 45*; Neuh. 1936 (ABS 28[1]): 44, 52 *f. 1b*; Y. Kobay. 1939 (SRT 4): 126 *f. 3I*; Raitv. 1963 (TÜT 136): 204 *f. 1: 6* (*Dacryomyces*); cf. Donk 1964 (PNA 67): 13. — Sensu Sow. 1798: *pl. 152* (*Peziza*) & S. F. Gray (*Hymenoscyphus*) = *Orbilia* sp., fide Donk 1964 (PNA 67): 13–14; sensu Sacc. 1878

[Dacrymyces]

(Mi 1): 429 (*Calloria*) = a discomycetous species; sensu Bref. → *Dacrymyces estonicus*; sensu Brasf. 1938 (AMN 20): 226 *tpl. 4 fs. 86–89* (*Guepiniopsis*) = *Heterotextus* sp. (extra-European), fide Donk 1964 (PNA 67): 14.

confluens P. Karst. 1886 (Finland). — P. Karst. 1887 (Mfe 14): 83.

corticioides Ell. & Ev. 1885 (U.S.A., New Jersey) (**108**). — *Ceracea* Pat. 1900.

Ceracea aureofulva Bres. 1906 (Germany) (108); fide McNabb in litt. — Bres. apud Krieg. 1906 (Am 4): 39; Bres. 1911 (Am 9): 425; Wakef. apud G. W. Mart. 1949 (M 41): 81, spores.

M.—*Dacrymyces involutus* Schw. sensu auctt. nonn. (*Dacrymyces* & *Arrhytidia*); fide McNabb in litt.

enatus (B. & C. apud Berk.) Mass. 1891. — *Tremella* B. & C. apud Berk. 1873 (U.S.A., South Carolina); *Arrhytidia* Coker 1928. — Mass. 1891 (JM 6): 182 *pl. 7 fs. 14, 15* (*Dacrymyces*); Coker 1928 (JMS 43): 237 *pl. 48 fs. 1, 2*; Brasf. 1938 (AMN 20): 214 *pl. 1 fs. 12–14* (*Arrhytidia*); L. Kenn. 1959 (M 50): 900 (*Dacrymyces enatus* var.).

Dacrymyces deliquescens var. *castaneus* Bourd. 1932 (BmF 48): 206; fide L. Kenn. 1959 (M 50): 901.

Dacrymyces gangliformis Brasf. 1940 (Ll 3): 105 *fs. 6–10* (U.S.A., Massachusetts); fide L. Kenn. 1959 (M 50): 901.

estonicus Raitv. 1962 (Estonia) (**111**). — Raitv. 1962 (EAT 11[3]): 238 *fs. 1, 2c.*

M.—*Peziza chrysocoma* Bull. sensu Bref. 1888 (*Dacrymyces*) (**111**); fide D. Reid in litt. — Bref. 1888 U. 7: 156 *pl. 10 fs. 12–17* (*Dacrymyces*).

fagicola (Bourd. & G.) Pilát 1940 (**114**). — *Dacrymyces deliquescens* var. Bourd. & G. 1928: 68 (France).

M.—*Dacrymyces succineus* Fr. sensu Boud. 1904–11: 93 *pl. 181.* — Tentatively identified with *D. fagicola.*

fennicus Lowy 1960 (Finland). — Lowy 1960 (Sy 14): 104 *f. 1.*

Tremella **guttata** Bon. 1851 (Germany). — Bon. 1851: 151 *pl. 12 f. 243*; 1864 (AbH 8): 119.

lacrymalis (Pers. per S. F. Gray) Sommerf. 1826, misapplied at least in part (**112**). — *Tremella* Pers. 1801 (Germany) (d.n.); *Gyraria* Pers. ex S. F. Gray 1821; *Tremella* Pers. 1822; ≡ [*Dacrymyces stillatus* var. "*β.* lutescens . . ." Fr. 1822, unnamed var.]; *Dacrymyces stillatus* var. *lutescens* Steud. 1824, Desm. 1828; ≡ *Dacrymyces lutescens* Neuh. 1934 ("Fr.-Bref.") (typonym of preceding name), not ~ Bref. 1888 [fide Neuh. 1936 (ABS 28[1]): 48 = *Dacrymyces lutescens* Bref.]. — Sensu Pers. 1804 I.p.: 24 *pl. 10 f. 3* (*Tremella lacrymalis*); Neuh. 1934 (SZP 12): 82 (*Dacrymyces lutescens*). — Sensu originario [?], fide Nees 1816: 89 = *Dacrymyces stillatus*; sensu Sommerf., at least in part → *Dacrymyces tortus*; sensu Corda → *Dacrymyces stillalus*, arthrosporous state.

? *Tremella deliquescens* Bull. 1789: *pl. 455 f. 3* & 1791 H.: 219 (France) (**113**); fide Donk 1964 (PNA 67): 6, nomen dubium & ambiguum. — *Tremella* Bull. per St-Am. 1821; *Dacrymyces* Duby 1830; *Calloria* Fr. 1849. — Sensu Fr. 1822: 230 (syn.) & Duby → *Dacrymyces stillatus* sensu originario; &c.

[Dacrymyces]

Dacrymyces lutescens Bref. 1888 U. 7: 152 *pl. 10 fs. 1–3* (Germany) (**115**), not ~ Neuh. 1934. — Sensu Neuh. 1936 (ABS 28[1]): 43, 48 *f. 1i* ?

Dacrymyces cerebriformis Bref. 1888 U. 7: 153 *pl. 10 fs. 4–8* (Germany) (**116**). — Sensu Neuh. 1936 (ABS 28[1]): 43, 50.

Dacrymyces harperi Bres. 1920 (Am 18): 53 (U.S.A.) (**117**).

laevis P. Karst. 1889 (BFi 48): 458 (Finland).

longisporus Bref. 1888 U. 7: 158 *pl. 10 fs. 18, 19* (Germany) (**118**).

minor Peck 1878 (U.S.A., New York) (**114**). — Coker 1920 (JMS 35): 168 *pl. 49 fig., pl. 64 fs. 1, 2,* in part; M. C. Fish. 1931 (PIa 38): 118 *tpl. 1 fs. 1–3*; Brasf. 1938 (AMN 20): 217 *tpl. 1 fs. 18–22*; L. Olive 1947 (M 39): 103; 1953 (BTC 80): 35 *fs. 16, 17,* spores (*Dacrymyces*); L. Kenn. 1959 (M 50): 908 (*Dacrymyces deliquescens* var.).

Dacrymyces gallaicus Losa 1942 (Spain). — Losa 1942 (AJM 2): 141 *tpl. 8 f. 5.*

nigricans (Bourd. & G.) Pilát 1940, Ingelstr. 1940. — *Dacrymyces deliquescens* var. Bourd. & G. 1909 (France). — Bourd. & G. 1928: 67 (*Dacrymyces deliquescens* f.).

Ditiola **nuda** B. & Br. 1848 (AM II 2): 267 *pl. 9 f. 4* (England); fide McNabb 1965 (NZB 3): 49 = *Dacrymyces* sp. — *Dacryopsis* Mass. 1891; *Dacryomitra* Pat. 1900. — Mass. 1891 (JM 6): 182 *pl. 7 fs. 25, 26* [cf. 1891 (G 20): 24] & 1892 B.F. 1: 69 *fs. 5, 6* on p. 56, conidia doubtful (*Dacryopsis*).

Ditiola fagi Oud. 1898 (H 37): 313 (Netherlands); fide McNabb in litt.

Ditiola ulicis Plowr. 1899 (TBS 1): 55 *pl. 2 fs. 2–6* (England); fide McNabb in litt. — *Dacryopsis* Sacc. & Syd. 1902.

Dacrymyces stipitatus (Bourd. & G.) Neuh. 1934, 1936; fide Bourd. 1932 (BmF 48): 206 = *Ditiola fagi*; fide McNabb in litt. — *Dacrymyces deliquescens* var. Bourd. & G. 1909 (France). — Bourd. & G. 1928: 68 (*Dacrymyces deliquescens* var.); Neuh. 1936 (ABS 28[1]): 42, 47 *f. 1f* (*Dacrymyces*).

ovisporus Bref. 1888 (Germany) (**119**). — Bref. 1888 U. 7: 158 *pl. 10 fs. 20, 21*; Neuh. 1936 (ABS 28[1]): 40, 44; Laurila 1939 (AVa 10[4]): 2; L. Kenn. 1959 (M 50): 899; Bandoni 1963 (M 55): 360 *f. 1.*

palmatus (Schw.) Bres. apud Höhn. 1904, Burt. 1921 (**109**). — *Tremella* Schw. 1832 (U.S.A., Pennsylvania), not ~ Hedw. f. 1798 (generic name n.v.p.; Chlorophyceae), not ~ Schum. per Pers. 1822; *Dacryopsis* Lloyd 1920. — Burt 1921 (AMo 8): 379 *f. 2, pl. 3 f. 2*; Bourd. & G. 1928: 69; Burt 1929: 108 *pl. 100 figs.*; Bres. 1932 (BIm 23): *pl. 1126 f. 2*; Neuh. 1936 (ABS 28[1]): 44; Brasf. 1938 (AMN 20): 218 *tpl. 2 fs. 42–45* ; Y. Kobay. 1939 (SRT 4): 117 *pl. 11 f. B*; L. Kenn. 1956 (M 48): 318 *fs. 1–3*; 1959 (M 50): 907; Raitv. 1963 (TÜT 136): 205 *f. 1: 3* (*Dacrymyces*).

Dacrymyces chrysosperma B. & C. apud Berk. 1873 (U.S.A., Massachusetts) (**109**); fide Coker 1920 (JMS 35): 163, 164 = *Dacrymyces aurantius* [sensu Farl.]: fide Burt 1921 (AMo 8): 379, 380.

Dacrymyces tremelloides P. Karst. 1882 (BFi 37): 241 (Finland); fide L. Kenn. 1959 (M 50): 907 & McNabb in litt.

[Dacrymyces]

Dacrymyces multiseptatus G. Beck 1884: 126 *pl. 1 f. 5* (n.v.) & 1886 (VW 35): 363 (Austria); fide Höhn. 1904 (ÖbZ 54): 425 & Bres. apud Höhn. 1905 (Am 3): 188.

? *Tremella pinicola* Britz. 1893 (BCb 54): 104 [*pl. 748 f. 19*] (Germany), wrong spores, not ~ Peck 1886; ≡ *Tremella britzelmayri* Sacc. & Syd. 1899 (**110**).

Dacrymyces flabellum Ell. & Ev. 1894 (PAP): 324 ("*flabella*") (U.S.A., Washington); fide L. Kenn. 1959 (M 50): 907.

Dacryomitra ramosa Wehmeyer 1935 (PMi 20): 249 *f. 3* (Canada, Nova Scotia); fide Brasf. 1938 (AMN 20): 218 & L. Kenn. 1956 (M 48): 311, 318; 1959 (M 50): 893, 907 ("phase").

M.—*Dacrymyces contortus* Ces. sensu Ces. in Rab. 1855 Kl.: No. 1984, in part ("a").

M.—*Tremella aurantia* Schw. sensu Farl. 1883; fide Burt 1921 (AMo 8): 379. — Pat. 1893 (JBM 7): 344 (*Guepiniopsis*); Coker 1920 (JMS 35): 163 *pl. 23 f. 10, pl. 48, pl. 63 fs. 6, 7*; Lloyd 1922 (LMW 7): 1132; Y. Kobay. 1939 (SRT 4): 118 *pl. 11 f. E* (*Dacrymyces*).

Dacryopinax **parmastoensis** Raitv. 1964 (EAT 13[1]): 31 *f. 3* (U.S.S.R., Transcaucasia). — McNabb 1965 (NZB 3): 71 suggests from the description that this may belong to *Dacrymyces* subg. *Turbinaster* Y. Kobay.

rubiformis (Fr. per Pers.) Neuh. 1931, 1936 (**109**). — *Naematelia* Fr. 1818 (Sweden) (d.n.); *Tremella* (Fr.) per Pers. 1822; *Naematelia* Fr. 1822. — Neuh. 1934 (SZP 12): 81; 1936 (ABS 28[1]): 43, 45 *f. 1c* (*Dacrymyces*). — Cf. L. Kenn. 1959 (M 50): 907, perhaps *Dacrymyces palmatus*. — Sensu Bourd. & G. → *Tremella encephala*.

saccharinus Sacc. & Trav. 1910 (Germany). — *Tremella spiculosa* var. *saccharina* A. & S. sensu Bon. 1851: 151 *pl. 12 f. 245* (*Tremella*).

stillatus Nees per Fr. 1822 (**120**). — *Dacrymyces stillatus* Nees 1816 (Germany) (d.n.); *Calloria* Fr. 1849. — Nees 1816: 89 *pl. 7 f. 90*; 1817: 25; Fr. 1822: 230, exclusive of var.? (*Dacrymyces*); cf. Donk 1964 (PNA 67): 2. — Sensu Corda → *Dacrymyces stillatus*, arthrosporous state; sensu L. Tul. → *Dacrymyses* sp., separately listed below; sensu Berk. 1860: 291 *pl. 18 f. 8* & Fr. 1874: 699 = *Dacrymyces* spp. [mixtum compositum], fide Donk 1964 (PNA 67): 5; sensu P. Karst. 1882 (BFi 37): 202 (= *D. abietinus* sensu P. Karst.) → *Dacrymyces* sp., separately listed below; sensu Bref. → *Dacrymyces* sp., separately listed below; sensu Bourd. & G. → *Dacrymyces* sp., separately listed below.

Tremella abietina Pers. 1796 O. 1: 78 (Germany) (d.n.); fide Nees 1816: 89 & Fr. 1822: 230; fide Neuh. 1936 (ABS 28[1]): 38, 44 = *Dacrymyces deliquescens* [sensu Neuh.]. — *Tremella* Pers. per Pers. 1822; *Dacrymyces* J. Schroet. 1888, Wettst. 1888, P. Karst. 1889, misapplied, not ~ Lapl. 1894; cf. Donk 1964 (PNA 67): 7. — Sensu J. Schroet. = *Dacrymyces* spp. [mixtum compositum], fide Donk 1964 (PNA 67): 8–9; sensu P. Karst. 1889 (BFi 48): 459, originally *D. stillatus* sensu P. Karst. 1882 (BFi 37): 202 → undetermined *Dacrymyces* sp., separately listed below; sensu Coker, L. Kenn., at least in part = *Dacrymyces* sp., cf. Donk 1964 (PNA 67): 9; &c.

[Dacrymyces]

Tremella sepincola Willd. 1788 (MB 2 / 4. Stück): 18 (Germany) (d.n.); fide Fr. 1822: 230 ("ex Rebent."). — *Tremella* Willd. per Pollini 1824; *Dacrymyces* Bon. 1864, misapplied. — Sensu Bon. 1864 (AbH 8): 116 = *Cylindrocolla urticae* (Pers. per Mérat) Bon.

? *Tremella punctiformis* Schrank 1789: 561 (Germany) (d.n.); fide Fr. 1832Ind.: 192. — *Tremella* Schrank per Opiz 1823.

? *Tremella miliaria* Schrank 1789: 563 (Germany) (d.n.); fide Fr. 1822: 230.

Dacrymyces ellisii Coker 1920 (U.S.A., North Carolina) (**121**); fide L. Olive 1958 (BTC 85): 108 = *Dacrymyces deliquescens* [sensu L. Olive]. — Coker 1920 (JMS 35): 167 *pl. 23 f. 11, pl. 50 f. 4, pl. 63 f. 8.*

M.—*Tremella deliquescens* Bull. sensu Fr. 1822 (syn.) & Duby 1830, name taken up to replace *Dacrymyces stillatus* Nees, Fr. 1822: 230 (original sense of Nees); cf. Donk 1964 (PNA 67): 6. — L. Tul. 1853 (ASn III 19): 211 *pl. 12 fs. 13–19, pl. 13*; Bref. 1888 U. 7: 141 *pl. 9*; Dangeard 1895 (Bot 4): 136 *fs. 5–7*; Buller 1922 (TBS 7): 230; 1922 R. 2: 171, 178 *fs. 59, 60*; Neuh. 1936 (ABS 28[1]): 40, 44 *f. 1h*; Y. Kobay. 1939 (SRT 4): 114 *f. 3A, pl. 9 f. E, pl. 11 f. F*; ? L. Olive 1958 (BTC 85): 107, no arthrospores; Poelt & Jahn 1964: *pl. 25 fig.* (*Dacrymyces*).

Hormomyces abietinus P. Karst. 1890 (H 29): 271 (Finland) (nom. anam.); fide L. Kenn. 1959 (M 50): 910 = *Dacrymyces deliquescens* var. *deliquescens* [sensu L. Kenn.]. — *Dacrymyces* Lapl. 1894, not ~ (Pers. per Pers.) J. Schroet. 1888.

M.—*Dacrymyces stillatus* Nees sensu Corda 1838 I. 2: 32 *pl. 14 f. 114*; restricted to arthrosporous state, cf. Donk 1964 (PNA 67): 2. — Schnizl. 1851 (StP Hfte 21–22): 19 *pl. 10*; Bon. 1851: 149 *pl. 12 f. 242*, incl. basidiospores cf. *f. 242c*; 1864 (AbH 8): 115.

M.—*Tremella lacrymalis* Pers. sensu Corda 1838 I. 2: 32 *pl. 14 f. 115* (*Dacrymyces*); used for arthrosporous state.

M.—*Tremella torta* Willd. sensu Bon. 1894 (AbH 8): 116 (*Dacrymyces*); used for arthrosporous state, fide Donk 1964 (PNA 67): 11.

stillatus Nees sensu L. Tul. 1853 (**122**). — L. Tul. 1853 (ASn III 19): 219; cf. Donk 1964 (PNA 67): 4.

? *Dacrymyces tulasnei* Neuh. 1936 (ABS 28[1]): 43, 51 *f. 1e* (n.v.p.), citing *D. stillatus* sensu L. Tul. & sensu Bourd. & G. as synonyms.

stillatus Nees sensu P. Karst. 1882 (BFi 37): 202. — *Tremella abietinus* Pers. sensu P. Karst. 1889 (BFi 48): 459 (*Dacrymyces*).

stillatus Nees sensu Bref. 1888 U. 7: 155 *pl. 10 fs. 9–11* (**122**); cf. Donk 1964 (PNA 67): 6.

stillatus Nees sensu Bourd. & G. 1928. — Bourd. & G. 1928: 68 *f. 44*. — Fide Neuh. 1936 (ABS 28[1]): 51 = *Dacrymyces tulasnei*, but cf. Donk 1964 (PNA 67): 6.

stillatus Nees sensu Bres. 1932 (BIm 23): *pl. 1127 f. 2.*

Septocolla **stipitata** Bon. 1864 (AbH 8): 117 (Germany), not *Dacrymyces stipitatus* (Bourd. & G.) Neuh. 1936.

[Dacrymyces]

tortus (Willd.) per Fr. 1828; fide Neuh. 1936 (ABS 28[1]): 45, 47 ("Fr.") = *Dacrymyces punctiformis* + *D. romellii*. — *Tremella* Willd. 1788 (Germany) (d.n.); *Tremella* (Willd. per Fr.) B. & Br. 1848; *Guepiniopsis* Pat. 1883, misapplied (**125**); ≡ *Dacrymyces contortus* Ces. 1855, misapplied (**125**); *Guepinia* Bary 1884, misapplied. — Sensu Fr. 1828 E. 2: 36 (*Dacrymyces*); cf. Donk 1964 (PNA 67): 11. — Sensu Berk. 1860: 288 = *Dacrymyces cerebriformis*, fide Neuh. 1936 (ABS 28[1]): 50; sensu Bon. → *Dacrymyces stillatus*, arthrosporous state; sensu Doass. & Pat. → *Guepiniopsis buccina*; sensu Brasf. 1938 (AMN 20): 225 *tpl. 4 fs. 72–79* (*Guepiniopsis*) = *Dacrymyces* sp., fide L. Olive 1954 (BTC 81): 334 = *Guepiniopsis minuta* L. Olive, extra-European; *Dacrymyces contortus* sensu Ces. in part ("b") → *Guepiniopsis buccina*.

Dacrymyces punctiformis Neuh. 1934, 1936 (Sweden); fide Donk 1964 (PNA 67): 11. — Neuh. 1934 (SZP 12): 81; 1936 (ABS 28[1]): 41, 45 *f. 1d, pl. 7*; Brasf. 1938 (AMN 20): 219 *tpl. 1 fs. 15–17*; L. Olive 1946 (M 38): 542; Malenç. 1954 (BmF 70): 125; L. Kenn. 1959 (M 50): 904.

Dacrymyces romellii Neuh. 1934, 1936 (Sweden); fide Nannf. apud L. Kenn. 1959 (M 50): 888, 906 = *Dacrymyces punctiformis*; fide Donk 1964 (PNA 67): 11. — Neuh. 1934 (SZP 12): 82; 1936 (ABS 28[1]): 42, 47 *f. 1g, pl. 4 f. B.*

M.—*Tremella lacrymalis* Pers. sensu Sommerf. 1826: 308 (*Dacrymyces*); fide Fr. 1828 E. 2: 36.

? M.—*Tremella hyalina* Pers. sensu Lloyd 1919 (*Dacrymyces*). — Lloyd 1919 (LMW 5): 828 *fs. 1385–1387*; Overh. 1922 (BTC 49): 166 *fs. 5–8* (*Dacrymyces*).

DACRYONAEMA Nannf.

1947 [1958 (Ta 7): 177]. — Holotype: *Sphaeronaema rufum* Fr.

SPECIAL LITERATURE.—Nannfeldt, *1947*.

rufum (Fr. per Fr.) Nannf. 1947. — *Sphaeronema* Fr. 1818 (Sweden) (d.n.) per Fr. 1823. — Nannf. 1947 (SbT 41): 336 *fs. 1–3, pl. 1*.

DITIOLA Fr.

1822 [1958 (Ta 7): 177]. — Lectotype: *Helotium radicatum* A. & S.

SPECIAL LITERATURE.—Harmsen, *1954*; Kennedy, *1964*; Lindau, *1894*.

radicata (A. & S.) per Fr. 1822 (**123**). — *Helotium* A. & S. 1805 (Germany) (d.n.); *Guepinia* (A. & S. per Fr.) Cost. & Duf. 1891, misapplied; *Dacrymyces* Donk 1931, in part; ≡ *Peziza turbo* Pers. 1822 (by lecto-typification). — A. & S. 1805: 348 *pl. 8 f. 5*; Corda 1838 I. 2: 33 *pl. 14 f. 119*, with serious errors; P. Karst. 1882

[Ditiola]

(BFi 37): 303; Lindau 1894 (H 33): 234 *pl. 13* (*Ditiola*); Bourd. & G. 1928: 68 (*Dacrymyces deliquescens* var. *Ditiola radicata*); Bres. 1932 (BIm 23): *pl. 1128 f. 2* (*Ditiola*); Neuh. 1936 (ABS 28[1]): 42, 48 *f. 1a* (*Dacrymyces*); L. Harmsen 1954 (BT 51): 121, 123 *fs. 7–11* (*Ditiola*); cf. Donk 1964 (PNA 67): 16. — Sensu Quél. → *Femsjonia pezizaeformis*.

? *Helvella lentiformis* Scop. 1772: 481 (Yugoslavia, Carniola) (d.n.); fide Fr. 1822: 170. — *Ditiola* (Scop.) per Wettst. 1885, Sacc. 1916.

Tremella peziza Pers. 1801: 628 (Germany) (d.n.); fide Fr. 1822: 170 & Donk 1964 (PNA 67): 15.

Tubercularia pini Schum. 1803: 183 (Denmark) (d.n.); fide Fr. 1822: 170.

Tubercularia flavescens Reb. 1804: 362 *pl. 3 f. 15* (Germany) (d.n.); fide Fr. 1822: 170 & Donk 1964 (PNA 67): 15.

? *Leotia tuberculata* Hornem. 1808 (Fd 8 / F. 23): 8 *pl. 1378 f. 2* (Denmark) (d.n.): fide Fr. 1822: 170. — In my opinion a very doubtful synonym.

M.—*Guepinia peziza* L. Tul. sensu J. Schroet. 1888: 401.

FEMSJONIA Fr.

1849 [1958 (Ta 7): 196]. — Monotype: *Femsjonia luteo-alba* Fr.
M.—*Guepinia* Fr. sensu Bref. 1888: 160, in part.

SPECIAL LITERATURE.—Martin, *1952b*; McNabb, *1965e*.

pezizaeformis (Lév.) P. Karst. 1876. — *Exidia* Lév. 1848 (France). — P. Karst. 1876 (BFi 25): 352; Bourd. & G. 1928: 71; Bourd. 1932 (BmF 48): 206–207, in obs.; L. Olive 1947 (M 39): 105 *f. 14*; McNabb 1965 (NZB 3): 224 *f. 1a* (*Femsjonia*).

? *Cyphella friesii* Weinm. 1836: 523 ("*Frisei*") (U.S.S.R., Russia) (**124**), not ~ Crouan 1867, not ~ Quél. 1875; ≡ *Guepinia cyphella* Fr. 1838: 566.

Femsjonia luteo-alba Fr. 1849 (Sweden); fide P. Karst. 1876 (BFi 25): 353 & McNabb 1965 (NZB 3): 224, 226. — *Ditiola* Quél. 1886; *Guepinia* Lloyd 1920. — Fr. 1863 M. 2: 283; Lloyd 1921 (LMW 6): 1053 *pl. 180 fs. 1958, 1959*; Buller 1922 R. 2: 163 *f. 58*; Bourd. & G. 1928: 71 *f. 46*; Bres. 1932 (BIm 23): *pl. 1129*; Bourd. 1932 (BmF 48): 206; Brasf. 1938 (AMN 20): 227 *tpl. 4 fs. 90–97*; Y. Kobay. 1939 (SRT 4): 216 *f. 1*, *pl. 19 fs. A, F*; Overh. 1940 (M 32): 261 *f. 12*; Raitv. 1963 (TÜT 136): 207 *f. 1: 5* (*Femsjonia*).

Ditiola conformis P. Karst. 1871 (Finland); fide P. Karst. 1876 (BFi 25): 353 & McNabb 1965 (NZB 3): 224, 226; fide Lloyd 1921 (LMW 6): 990 & 1921 (LMW 6): 1053 = *F. luteo-alba*. — *Dacrymyces* Neuh. 1936. — P. Karst. 1871 (NfF 11): 223 [1871 (H 10): 60]; 1889 I. 3: 10 *pl. 6 f. 80*; Burt 1921 (AMo 8): 386 (*Ditiola*); Neuh. 1936 (ABS 28[1]): 44 (*Dacrymyces*).

Guepinia femsjoniana J.-Ols. apud Bref. 1888 (Germany); fide J.-Ols. apud Bref. 1888 U. 7: 161 = *Femsjonia luteo-alba*. — Bref. 1888 U. 7: 161 *pl. 11 fs. 3–5*.

[Femsjonia]

Dacrymyces mesentericus P. Karst. 1889 (BFi 48): 459 (Finland); fide McNabb (NZB 3): 224, 226.

Dacrymyces radicellatus P. Karst. 1890 (H 29): 178 (Finland); fide McNabb 1965 (NZB 3): 224, 226.

M.—*Helotium radicatum* A. & S. sensu Quél. 1888: 21 (*Ditiola*), in part; fide Bourd. & G. 1928: 71 = *Femsjonia luteo-alba.*

M.—*Peziza radiculata* Sow. sensu G. W. Mart. 1952 (SIa 19[3]): 36 (*Femsjonia*); fide G. W. Mart. 1952 (M 44): 580 = *Femsjonia luteo-alba.*

GUEPINIOPSIS Pat.

1883 [1958 (Ta 7): 199]. — Monotype: "*Guepiniopsis tortus* Pat."
M.—*Guepinia* Fr. sensu Bref., in part, em. Ulbrich.

SPECIAL LITERATURE.—McNabb, *1965c.*

buccina (Pers. per Pers.) L. Kenn. 1959; fide Dennis 1952 (KB 12): 302 = *Guepinia peziza.* — *Peziza* Pers. 1801 (Germany) (d.n.) per Pers. 1822: Fr. 1822; *Helotium* Fr. 1849, misapplied; *Guepinia* Sacc. 1873; *Phialea* Quél. 1883, misapplied. — Donk 1964 (PNA 67): 16, notes; McNabb 1965 (NZB 3): 161 *fs, 1, 2* (*Guepiniopsis*). — Sensu Fr. 1849 = presumably a discomycetous species (undetermined); sensu Quél. = a discomycetous species (undetermined).

Peziza merulina Pers. 1822 (France); fide Donk 1964 (PNA 67): 17. — *Guepinia* Quél. 1884; *Guepiniopsis* Pat. 1887 (nom. nud.: n.v.p.), 1889; *Ditiola* Rea 1922. — Quél. 1884 (Crf 12): 507 (*Guepinia*); Pat. 1900: 30 *f. 22 at left*; Bourd. & G. 1928: 70; Y. Kobay. 1939 (SRT 4): 110 *f. 2A, pl. 9 f. C* (*Guepiniopsis*).

Guepinia peziza L. Tul. 1853 (France). — *Guepiniopsis* Pat. 1889 (not accepted: n.v.p.). — Tul. 1872 (ASn V 15): 218, 233 *pl. 9 fs. 1–4* (*Guepinia*). — Sensu J. Schroet. → *Ditiola radicata.*

Guepinia tubiformis Fuck. 1870 (Jna 23–24): 30 (Germany); fide McNabb 1965 (NZB 3): 161, 162.

Guepinia cochlearis Quél. 1875 (MMb II 5): 547 (France); fide Quél. 1884 (Crf 12): 507 = *Guepinia merulina.*

Peziza exarata Berk. 1875 (G 3): 160 (U.S.A., South Carolina); fide McNabb 1965 (NZB 3): 161, 162. — *Phialea* Sacc. 1889.

Guepinia crenata Lloyd 1922 (LMW 7): 1152 *pl. 214 f. 2241* (Ecuador); fide McNabb 1965 (NZB 3): 162.

M.—*Dacrymyces contortus* Ces. sensu Ces. in Rab. 1855 Kl.: No. 1984, in part ("b") (**125**); fide Donk 1964 (PNA 67): 12.

M.—*Tremella lutescens* Pers. sensu Quél. 1872 (MMb II 5): 315; 1873 (MMb II 5): *pl. 20 f. 6* → *Guepinia cochlearis.*

M.—*Tremella torta* Willd. sensu Doass. & Pat. 1883 (Rm 5): 96 (**125**); fide Quél. 1884 (Crf 12): 507 & Donk 1958 (Ta 7): 199 = *Guepinia/Guepiniopsis merulina.* — Pat. 1883 T.a. 1: 28 *f. 62*; L. Olive 1953 (BTC 80): 38 *fs. 21, 24–28*; Domański & al. 1960 (Mob 10): 189 *f. 14* (*Guepiniopsis*); cf. Donk 1964 (PNA 67): 12–13.

EXOBASIDIALES Lindau 1897

Exobasidiaceae J. Schroet. 1888.

EXOBASIDIUM Woronin (**126–128**)

1867 [1956 (Re 4): 116]. — Monotype: *Fusidium vaccinii* Fuck.

Arcticomyces Savile 1959 [1963 (Ta 12): 156] (**141**). — Monotype: *Exobasidium warmingii* Rostr.

SPECIAL LITERATURE.—On *Ericaceae*: Brefeld, *1888c*; Burt, *1915*; Cavara, *1899*; Eftimiu & Kharbush, *1927*; Fockeu, *1894*; Fuckel, *1861*; Göttgens, *1960*; Graafland, *1953*, *1960*; Juel, *1912*; Kharbush, *1929*; Laubert, *1925*, *1932*; Magnus, *1897*; Maire, *1916*; Naumann, *1910*; Pétri, *1907*; Raciborski, *1909*; Richards, *1896*; Sadebeck, *1886*; Savile, *1959*; Sundström, *1960*, *1964*; Thomas, *1897*; Wakker, *1892*; Woronichin, *1926*; Woronin, *1867*; Zellner, *1913*. — On *Lauraceae*: Baccarini, *1913*; Baldini, *1886*; Geyler, *1874*; von Tubeuf, *1913*. — On *Anacardiaceae*: Maire, *1917*. — On *Saxifragaceae*: Thomas, *1889*.

On Ericaceae

aequale Sacc. 1917 (NGi II 24): 33 (Italy). — Cf. *Exobasidium vaccinii-uliginosi*.

angustisporum Linder 1947 (Canada) (**129**). — Linder 1947 (BnC 97): 271 *fs. 5d, e, pl. 18 f. B.*

Exobasidium vaccinii-myrtilli (Fuck.) Juel form "d" Juel 1912 (SbT 6): 365.

cassiopes Peck 1892 (U.S.A., Washington). — Nannf. 1958 (LNF 51–52): 28 No. 2556.

Exobasidium vaccinii-myrtilli (Fuck.) Juel. form "f" Juel 1912 (SbT 6): 365 *pl. 7 f. 3.*

caucasicum Woronich. 1920 (U.S.S.R., Transcaucasia) (**130**). — Woronich. 1920 (MTi 51) (n.v.) [cf. Woronov 1923 (TtS II 3): 182]; *1926*.

discoideum J. B. Ell. 1874 (BTC 5): 46 (U.S.A., New Yersey) (**130**, **131**). — Sensu P. Magn. 1897 (FnZ 6): 435; 1900 (AHp 16): 538 *pl. 18 fs. 1–4*; Rac. 1909 (BCr 3²): 387 *fs. 1, 2*. — Sensu Petri → *E. japonicum*.

Exobasidium discoideum var. *horvathianum* F. Thomas 1897 (U.S.S.R., Caucasia); fide P. Magn. 1897 (FnZ 6): 435. — F. Thomas 1897 (FnZ 6): 305 *fs. 1–3*.

dubium Rac. 1909 (Kos 34): 1172 & 1910 M.p.: No. 50 [cf. Woronich. 1926 (Ph 16): 296] (Poland) (**130**, **132**). — Rac. 1909 (BCr 3²): 388 (*Exobasidium* sp., producing "Flecken").

Exobasidium magnusii Woronich. 1913 (n.v.) (**130**); fide Siemaszko 1923 (n.v.) & apud Trott. 1926 (SF 24): 1325. — Woronich. 1913 (MTi 28): 18 *pl. 1 f. 2* (n.v.) [cf. Woronov 1923 (TtS II 3): 182]; Savile 1959 (CJB 37): 650, in obs.

Exobasidium sp. P. Magn. 1900 (Caucasia). — P. Magn. 1900 (AHp 16): 540 *pl. 18 f. 5*.

[Exobasidium]

[**japonicum** Shirai, see Index.—An alien.]

karstenii Sacc. & Trott. 1912 (**135**). — ≡ *Exobasidium andromedae* P. Karst. 1878 (nom. nud.), 1881 (Finland), not ∼ Peck 1873; ≡ *Exobasidium karstenii* Lind 1913 (synisonym). — Maire 1902 (BmF 18, S.): 97 *pl. 2 fs. 21–23*; P. Magn. 1905: 141 (*Exobasidium andromedae*).

M.—*Exobasidium andromedae* Peck (**135**) sensu Mig. 1910–1: 30.

ledi P. Karst. 1878 (Finland). — Juel 1912 (SbT 6): 368 *f. E.*

myrtilli Siegm. 1870 (n.v.) [cf. Lind 1913: 350] (Germany) (**136**), not ∼ (Thüm. ex P. Karst.) P. Karst. 1889.

Exobasidium myrtilli (Thüm. ex P. Karst.) P. Karst. 1889, not ∼ Siegm. 1870 (n.v.). — *Exobasidium vaccinii* forma Thüm. 1873 (nom. nud.) (Czechoslovakia), not ∼ Thüm. 1875; *Exobasidium vaccinii* subsp. "*Ex. Myrtilli*" (Thüm.) ex P. Karst. 1882.

Exobasidium vaccinii-myrtilli (Fuck.) Juel 1912; fide Juel 1912 (SbT 6): 361, 365 [type distribution of *E. myrtilli* (Thüm. ex P. Karst.) P. Karst. included]. — *Exobasidium vaccinii* forma Fuck. 1870 (Germany). — Juel 1912 (SbT 6): 364 *f. B, pl. 7 f. 3*, in part; Eftimiu & Kharbush 1927 (RPv 14): 63, 80 *fs. 2, 4 tplate fs. 22–28* ("*Myrtilli*").

M.—*Fusidium vaccinii* Fuck. sensu Fuck. 1861 (BZ 19): 251, in part, as to fungus on *Vaccinium myrtillus*. — Sadebeck 1886 (BCb 25): 289 (*Exobasidium*).

oxycocci Rostr. 1906 (Denmark) (**137**). — *Exobasidium* Rostr. 1885 (nom. prov.). — Shear 1907 (BPI 110): 35 *pl. 7 fs. C, D*; Juel 1912 (SbT 6): 365; Lind 1913: 352 *pl. 6 fs. 74, 75*; Shear & al. 1931 (TUS 258): 11, 41 *pl. 1 f. C*; Poelt & Jahn 1964: *pl. 30 fig.*

rhododendri (Fuck.) Cramer apud Geyler 1874; Cramer 1875 (**130**, **133**), not ∼ Quél. 1886; — *Exobasidium vaccinii* forma Fuck. 1873 (Switzerland). — Fuck. 1873 (Jna 27–28): 7 (*Exobasidium vaccinii* f.); Geyler in Rab. 1875 F.e.: No. 1910; Eftimiu & Kharbush 1927 (RPv 14): 63, 79 *f. 8, tplate fs. 29–40*; Laubert 1932: 290 *fs. 75, 76*; Poelt & Jahn 1964: *pl. 30 fig.* (*Exobasidium*).

Exobasidium rhododendri Quél. 1886 (France) (**130**), not ∼ (Fuck.) Cramer apud Geyler 1874. — Quél. 1888 (Crf 16): 589.

M.—*Fusidium vaccinii* Fuck. sensu Cavara 1890 (*Exobasidium*), in part, as to fungus on *Rhododendron*. — Cavara 1899 (Mal 13): 124–136 *pl. 5* (*Exobasidium*).

unedonis Maire 1916 (Algeria). — Maire 1916 (BfA 1): 123 *fs. 1, 2 pl. 8.*

uvae-ursi (Maire) Juel 1912. — *Exobasidium andromedae* P. Karst. forma Maire 1907 (BbF 55): clviii (France). — Juel 1912 (SbT 6): 366 *f. C, pl. 7 f. 4* (*Exobasidium*).

vaccinii (Fuck.) Woronin 1867 (**136**, **138**). — *Fusidium vaccinii* Fuck. 1861 (Germany), in part. — Woronin 1867 (VnF 4): 397, 413 *pls. 1–3*; Wakker 1892 (JwB 24): 501 *pl. 21 fs. 33–36*, galls; Shear 1907 (BPI 110): 36 *pl. 7 fs. A, B*; Juel 1912 (SbT 6): 361 *f. A*; Burt 1915 (AMo 2): 649 *pl. 21*, in part; Shear & al. 1931 (TUS 258): 11, 41 *pl. 1 f. D, pl. 3 fs. B, C*; S. Ito 1955: 54 *f. 42*; Savile 1959 (CJB 37): 646 *f. 1*, in part; Poelt & Jahn 1964: *pl. 30 fig.*

[Exobasidium]

Exobasidium cassandrae Peck 1878 (RNS 29); 46; fide Juel 1912 (SbT 6): 362 & Nannf. 1958 (LNF 51–52): 32 No. 2567.

vaccinii-uliginosi Boud. apud Boud. & E. Fisch. 1895 (Switzerland). — Lagerh. in Briosi & Cav. 1896 F.p.: No. 261 *fig.*; Juel 1912 (SbT 6): 367 *f. D, pl. 7 f. 5*; Eftimiu & Kharbush 1927 (RPv 14): 63, 80 *fs. 3, 5, 9, tplate fs. 14–22* ("*uliginosi*"); Linder 1947 (BnC 97): 273; S. Ito 1955: 53 *f. 41*; Savile 1959 (CJB 37): 652 *f. 9*.

On other families

citri Siemaszko 1915 (U.S.S.R., Caucasia). — Siemaszko 1915 (MMR 1^3): 30 *fs. 5–10* (n.v.). — On *Citrus* (Rutaceae).

lauri Geyler 1874 (Canary Islands) (**140**). — Geyler 1874 (BZ 32): 244 ("*Lawii*"), 321 *pl. 7*; Baldini, *1886*, galls; Baccarini, *1913*; von Tubeuf, *1913*. — On *Laurus* spp. (Lauraceae).

Clavaria lauri Brot. per Fr. 1821 (**140**). — *Clavaria* Brot. 1804: 475 (Portugal) (d.n.); *Calocera* (Brot. per Fr.) Fr. 1832.

patavinum D. Sacc. 1897 (Italy). — D. Sacc. 1898 (Mal 12): 204 *pl. 7 f. 2*. — On *Ilex aquifolia* (Aquifoliaceae). — Incertae sedis.

warmingii Rostr. 1888 (Greenland) (**141**). — *Arcticomyces* Savile 1959. — F. Thomas 1889 (VW 39^{Sber}): 86; Savile 1959 (CJB 37): 984 *fs. 4–11*. — On *Saxifraga* spp. (Saxifragaceae).

Notes

SEPTOBASIDIALES

Septobasidium

(**1**). Caldesi himself listed *Thelephora orbicularis* Dur. & Lév. as synonym of his *Hypochnus michelianus*. The former name was validly published, although the protologue consisted only of an illustration (with legend): the description was never published. Since there is no reasonable doubt that the two names are synonyms, the correct name for the species would seem to be **Septobasidium orbiculare** (Dur. & Lév.) Donk, *comb. nov.*; basionym, *Thelephora orbicularis* (Dur. & Lév. *in* Dur., Fl. Algér., Crypt. *pl. 33 f. 7*. ?1846.

(**2**). Saccardo was quite correct when he made the recombination *Septobasidium quercinum*, basionym, *Hypochnus quercinus* Bagl. Because of the pre-existence of the name *Corticium quercinum* (Pers. per Fr.) Fr. [= S. F. Gray] Fries had to change the specific epithet when he transferred the species to *Corticium*; he therefore introduced the name *Corticium bagliettoanum*. No such obstacle existed when the species was transferred to *Septobasidium*; hence, instead of the recombination of 'bagliettoanum', a recombination of the earlier epithet was required.

TREMELLALES

AURICULARIINEAE

Achroomyces

(**3**). The name *Achroomyces* is not generally accepted. Those authors who prefer to use the name *Platygloea* instead do so, it would appear, for two reasons. The first is that they are in doubt as to the correct interpretation of *Achroomyces tumidus*, the type species of the name *Achroomyces*. The second is that considerable reluctance must be overcome before exchanging the currently used denomination *Platygloea* for *Achroomyces*. Nevertheless, several European authors who know *Achroomyces disciformis* and have studied it from various points of view (von Höhnel, *1904*; Neuhoff, *1924*: 257; Donk, *1958b*: 165) have been convinced that this species is in any case congeneric with *A. tumidus* and most probable even conspecific, the only difference being the substratum, which is *Tilia* in *A. disciformis* and *Betula* in *A. tumidus*. Since *A. disciformis* is a fairly common species in some parts of Europe and has been consistently reported from *Tilia*, it would seem as though Bonorden erred in his naming of the host.

The earlier authors who published microscopic details (Bonorden; Riess) were not aware that they were dealing with an auriculariaceous fungus, so that the basidia were not only not correctly rendered but they were also even misinterpreted; not until Brefeld's studies was the true nature of the basidia brought to light. It is von Höhnel's merit to have recognized the fungus in the various disguises in which it was published. The fact is that even without knowledge of microscopic details only a tolerable description is needed to characterize *A. disciformis* sufficiently for recognition.

(**4**). *Platygloea* or, rather, *Achroomyces* in its current delimitation is a purely artificial genus. It is used to stow away species with effused, waxy to gelatinous fruitbodies, in so far as they cannot be accomodated in some smaller genera, such as *Helicogloea* (**13**), *Kriegeria*, and the extra-European *Patouillardina* Bres. apud J. Rick, defined by additional particularities. Even so, allowances must be made in order to retain certain species within this broadly conceived genus. The fruitbody of *Achroomyces disciformis* for instance is not really effused ('resupinate') but erumpent and it remains cushion-shaped throughout its development. There can be no doubt that the species still assigned to the genus differ in their alliances. These have not yet been worked out. Pending further studies little can be done except to retain the genus in its artificial sense. I have refrained from making new combinations for the intervening period; this will explain the apparently indiscriminate use in the check list of the two generic names *Achroomyces* and *Platygloea*.

A preliminary survey of the genus on a world-wide basis was published by Bandoni (*1957a*, as *Platygloea*).

(**5**). The name *Stictis tiliae* is now ascribed to Lasch. The protologue [in Rab. 1844 Kl.: No. 638, copy in L; & cf. 1845 (BZ 3): 66] mentions neither an author nor a locality, so that one may be disposed to ascribe the name to Rabenhorst, the editor of the series. Saccardo [1889 (SF 8): 696] is now followed; he ascribed the name to Lasch and recorded the type locality as "Driesen, Germaniae", though without explaining why.

(**6**). When Schroeter published *Platygloea nigricans* he did not add 'n. sp.' as he did in the same work when publishing a new species. Since he excluded the type of *Agyrium nigricans* Fr. by excluding the typical form of Fries's species, however, it now appears correct to regard that name as a 'new' name for a 'new' species. The only synonym he cited was not *A. nigricans* Fr. itself, but "Fries 1822? *Agyrium n*[*igricans*] *a.* [!] *minus*", which stands for '*Agyrium nigricans*' "b. minus subsphaericum" Fr. 1822 (unnamed form).

I find it difficult to form an opinion about typical *Agyrium nigricans*, but its forma b quite likely represents *Achroomyces disciformis*.

Atractiella

(**7**). This genus is admitted to a place on this check list because it was thought that what was described as the conidiophores might in reality be auriculariaceous basidia, a supposition already voiced by its author [cf. Saccardo 1886 (SF 4): : 579]: 'basidia (?) sporomorpha fusoidea, recta vel inaequilateralia, apice obtusiuscula triseptata, hyalina; conidiis in basidiorum apice nascentibus ovato-oblongis, hyalinis . . ..' Juel (*1898*: 6–7) once more directed attention to its possibly auriculariaceous nature and suggested that it might perhaps coincide with *Pilacrella*. To the best of my knowledge no supplementary accounts of the fungus have been published.

Auricularia

(**8**). After de Bary and Brefeld had made known the real nature of the basidia in *Auricularia* sensu stricto and *Hirneola* Fr., it gradually became almost current practice to emphasize the nature of the basidia above any other feature and to regard these taxa as congeneric. Few mycologists have persisted in keeping them apart. Bresadola [1896 (H 35): 291] had already vented his exasperation and Donk (*1952*) agreed that *Auricularia* and *Hirneola* (including *Laschia* Fr.) were easily recognizable and good generic taxa.

To emphasize the similarity of basidia in the Auriculariaceae is not very convincing. Are there sufficient other characters to uphold the generic distinction? My answer is, Ample! In general appearance *Auricularia* is strongly *Stereum*-like: (i) its fruitbodies become appressed to the substratum or partially reflexed, depending on their position; (ii) neighbouring fruitbodies become confluent wherever they touch each other, to form complex structures, often over extensive areas;

(iii) the sterile surfaces become distinctly zonate; and (iv) from the first the hymenium of the free portions of the fruitbody faces strictly downward. *Hirneola*, on the contrary, is strongly *Exidia*-like in general appearance: (i) its fruitbodies never become appressed or appressed-reflexed but remain completely free from the substratum assuming disc-, cup-, or ear-like shapes and the like; (ii) neighbouring fruitbodies never become confluent, although they may perhaps glue together upon drying; (iii) the sterile surfaces never show the slightest tendency to become zonate; and (iv) the final position of the fruitbodies is often not imposed at a very early state of their development: in certain species (though not of the *Laschia* type) they have usually reached considerable dimensions before the hymenium becomes more or less directed downward—if, in some of the fruitbodies, it ever does. These are all distinctions that are easily observed; together they explain why the fruitbodies of the two genera are so different in appearance. In the handling of well developed material there is never any reason for hesitation in distinguishing between *Auricularia* and *Hirneola*, but—without a microscope—the marked superficial likeness between *Hirneola* and *Exidia* is sometimes baffling.

(**9**). The circumscription of *Auricularia mesenterica*, expressed in the form of citations of synonyms and descriptions, accepted here makes it essentially a species of the northern temperate zone. From the tropics several forms have been described that by some mycologists are kept separate and by others combined with *A. mesenterica*. Personally I find it very difficult to appreciate the distinction between these species, but for the present I prefer not to commit myself on the correctness of maintaining *Auricularia ornata* and *A. peltata* as distinct species. If they are to be merged into *A. mesenterica* the synonymy of this species should be amended by the following names: *Helvella tremellina* Sw. 1788 (Jamaica) (d.n.), *Auricularia ornata* Pers. 1827 (Mariannes), *A. pusio* Berk. 1881 (Australia), *A. adnata* Lyon 1916 (Line Islands, Pacific), and *A. peltata* Lloyd 1922 (Philippine Islands). The correctness of the name *A. mesentarica* would not be impaired by the inclusion of these names as synonyms.

Helicobasidium

(**10**). This is still another genus of auriculariaceous species with strictly effused fruitbody and an artificial delimitation. In most respects it constitutes a counterpart of *Achroomyces* (*Platygloea*): it differs from that genus in its context of more or less loosely interwoven hyphae, which accounts for the different texture, viz. not distinctly waxy to gelatinous. Genera that would fall within its limits are *Herpobasidium* and *Saccoblastia* (sensu stricto): these are separated by the type of parasitism of the former and the sac-like probasidium of the latter.

It would seem advantageous to recognize a naturally defined genus within this artificial assemblage, a genus restricted to *Helicobasidium brebissonii* and about two or three closely related extra-European species. Such a taxon is characterized

by its colours, the consistency of its fruitbody and its slender spores, as well as by the mode of its growth; these fungi attack subterraneous parts of living plants, on which they develop a *Rhizoctonia* state, forming their fruitbodies close above and in contact with the soil-surface.

The species that do not fall within the limits of this natural taxon are treated here as an unplaced rest. The genus is poorly represented in Europe.

(**11**). Kühn's early researches on two diseases caused according to him by the same fungus have given rise to a number of names. The specific names among these may be briefly reviewed. The hosts were beets and carrots; the fungus is now known as the violet root felt fungus or *Rhizoctonia crocorum* and its perfect state as *Helicobasidium purpureum*, but the correct name would seem to be *Helicobasidium brebissonii*.

Kühn forwarded material from both beets and carrots to Rabenhorst who described it as a new species, *Helminthosporium rhizoctonon* Rab. The original description includes microscopical details that, in combination with the choice of the generic name, strongly suggest that Rabenhorst also included a contaminating fungus; if this conclusion is correct then *H. rhizoctonon* is a nomen confusum. Shortly afterwards Rabenhorst changed this name into *Rhizoctonia daucii* Rab. (1855 Kl. II: No. 74), without furnishing a new description or any remarks. At first Kühn (1856), accepted the name *Helminthosporium rhizoctonon* but after a remark made by Montagne, who identified the taxon with *Rhizoctonia medicaginis*, he decided to use the latter name (Kühn, 1858: 245).

The name *Rhizoctonia betae* was published by Eidam in 1888 (not 1887) as follows:

"... eine Erkrankung [an den Wurzeln der Zuckerrübe in Schlesien] hat sich als echte, durch einen Pilz hervorgerufene Infections-Krankheit herausgestellt. ... Diese Krankheit ist schon lange bekannt; sie wurde von F. Cohn im Jahresbericht d. Schles. Ges. für 1853 p. 98 ausführlich geschildert und von Kühn in seinem Buch: "Die Krankheits-Erscheinugen der Culturgewächse" [1858] p. 232 auf einen Pilz, *Rhizoctonia Betae*, zurückgeführt."

This passage has been taken to mean that the name *R. betae* was published by Cohn or by Kühn in the works cited. This is incorrect; it should have been cited as *R. betae* 'Eidam'.

The last sentence of the remark by Eidam quoted above had led to the view that he provided a new name for the causative agent (the violet fungus) of the beet disease of which Kühn (1858) had begun the description on page 235 (not 232). This fungus was not in need of a new name since it had previously been called *Helminthosporium rhizoctonon* and *Rhizoctonia medicaginis* by Kühn. There is no indication that Eidam wished to segregate the violet fungus as it occurred on beets as a new taxon specifically distinct from *R. medicaginis* (*R. crocorum*).

It is also significant that Eidam's own description of the fungus he had in mind was *not* the violet fungus. As Duggar (*1915*: 427, 455) concluded, what Eidam described was very likely *Rhizoctonia solani*. For these and other reasons I would reject the thesis that *R. betae* is still another name for *R. medicaginis* (*R. crocorum*), misapplied when validly published (Braun, *1930:* 8). I prefer to follow Duggar in

listing it as a somewhat doubtful synonym of *R. solani* (*Thanathephorus cucumeris*).

The violet fungus, as it occurred on the second host (carrots), did receive a name of its own to a certain extend when *Rhizoctonia dauci* Rab. (see above) was introduced, although the basionym (*Helmintosporium rhizoctonon*) was stated to occur on various substrata ('Ad radicis *Dauci* et *Brassicarum* aliarumque ejusmodi domesticarum abundanter . . .'). (I am unable to explain why both the 'Botanische Zeitung', **13**: 599. 1855, and 'Flora', **38**: 494. 1855, report that '*Acrostalagmus murinus* Ces. mss.' was issued under number 74, *R. dauci*.) And compare *Rhizoctonia violacea* f. *dauci* Kühn (*in* Rab. 1875 F.c.: No. 1970, with remarks added). Some subsequent authors, apparently incorrectly, attributed the name *Rhizoctonia dauci* to Kühn (*fide* Duggar, *1915*: 427).

(**12**). The tendency to publish new specific names for the violet fungus when it had been found associated with a particular host is also apparent in the publication of the name *Rhizoctonia asparagi*. Fuckel ascribed the name to Fries (1822: 266), who once wrote 'Etiam *Rhizoctoniae* in *Asparago* & *Sambuco Ebulo* observatae dicuntur.' Since no description was furnished by either Fuckel or Fries the name remained a nomen nudum until Eriksson accepted it and provided a description, regarding Fuckel as the author. I take Fuckel's distribution (Fungi rhen. No. 1499) as type.

Helicogloea

(**13**). This genus is restricted by the exclusion of the species with floccose fruitbody, which are placed in *Saccoblastia* (**22**). Baker's conception (*1936*) covers both these genera under the name *Helicogloea*.

In order to improve generic delimitations it will be useful to recall *Helicogloea intermedia* (Linder) G. E. Bak. and *H. terminalis* L. Olive, both extra-European species. It is usual to characterize the probasidium in *Saccoblastia* and *Helicogloea* as a lateral body, i.e., a lateral extension from a hypha. Often the metabasidium is produced as a terminal segment of this hypha, but it may also sprout directly from the probasidium itself. Also very important is that in *Helicogloea* and *Saccoblastia* it is characteristic for the probasidium to become bent in the direction of the substratum. In *H. intermedia* (Linder, *1929*) two types of basidia are met with: the usual type and one that may be called axial. In this second type the probasidium develops terminally and points away from the substratum, while the metabasidium develops directly and apically from it, and in a direct line with it; in other words, the mature basidium is about the same as in some species of *Achroomyces* (*Platygloea*) with persistent probasidium. In *H. terminalis* all probasidia are strictly axial and intercalated. Technically such a species might well be placed in *Achroomyces*. However, in Olive's opinion [1954 (BTC 85): 332] "in *Platygloea* the persistent probasidia, when present, are never so regular in size and shape as they are in *Helicogloea*." The current distinction between *Helicogloea* and *Achroomyces* appears to be very weak indeed.

It would seem that on reaching maturity the metabasidium of several species of

Helicogloea is an extruded body, procumbent on the surface of the fruitbody. This may be seen in fresh material but it may also be deduced from the sterigmata: those originating on a single metabasidium are short to fairly short and of about equal length. In typical species of *Achroomyces* the metabasidia remain included in the fruitbody, where they are more or less vertically opposed to the surface, while the sterigmata of the part-cells of a metabasidium must cover unequal distances to reach the surface. This distinction is presumably of ecological importance. Whether or not it is also of taxonomic importance is as yet difficult to judge because on several species of *Helicogloea* no relevant information has as yet been published; in a number of descriptions no details have been published even on the sterigmata.

(**14**). Baker (*1936:* 93) conceived *Helicogloea lagerheimii* as a species with a wide range of spore dimensions. She found the type to have spores 13–15–18 μ long, and as a result of her study of numerous other collections she gave the total range of the spore length of the species as 8–18 μ. If she had taken *Saccoblastia sebacea* subsp. *S. subardosiaca* Bourd. & G. into consideration (spores stated by Bourdot & Galzin to be 15–18 μ long) she would presumably also have listed this taxon as a synonym. According to its authors it differed from *Saccoblastia sebacea* (= *Helicogloea lagerheimii*), "par son épaisseur, sa teinte et ses spores plus grandes." As European collections of *H. lagerheimii* have average spore sizes not exceeding about 10–12 μ, it is just possible (i) that after all *Saccoblastia sebacea* (European collections) may be different from typical *Helicogloea lagerheimii* from Brazil and (ii) that *Saccoblastia subardosiaca* will prove to be a distinct species. Material I collected in Sweden has the larger spore size and confirms the existence of large-spored forms in Europe. Pending more detailed and conclusive studies there is little to be done except to maintain Bourdot & Galzin's taxon as distinct. The alternative at the moment would be unobtrusively to reduce this name to the synonymy of *H. lagerheimii*, but I rate Bourdot & Galzin's work too highly to do so without careful study. — **Helicogloea subardosiaca** (Bourd. & G.) Donk, *comb. nov.*; basionym, *Saccoblastia sebacea* subsp. *subardosiaca* Bourd. & G., Hym. Fr. 5. 1928 ≡ *Saccoblastia subardosiaca* (Bourd. & G.) Linder *in* Ann. Missouri bot. Gdn **16**: 487. 1929.

Herpobasidium

(**15**). When Gould (*1945*) described *Herpobasidium deformans* he had already established the connection between the perfect and the imperfect state of this fungus. The imperfect state had been called *Glomerularia lonicerae* Dearn. & House (nomen nudum) (**16**). As already suggested by Peck, this imperfect fungus appears to be closely related to *Glomopsis corni* (Peck) D. M. Hend., the type of the generic name *Glomerularia* Peck ≡ *Glomopsis* D. M. Hend. According to Henderson (*1961:* 501), "the conidial stage of *Glomopsis lonicerae* is undoubtedly congeneric with *Glomopsis corni* and the two differ only in certain minor respects." In view of this expert opinion it would seem not unlikely that the type of *Glomopsis* may also be expected to be an

imperfect state of a basidiomycete, perhaps even of a species of *Herpobasidium* adapted to *Cornus canadensis*.

Henderson (*1961:* 499) considers *Glomopsis* to be the nearest relative of *Glomospora* D. M. Hend. The only species and type of the latter generic name is *Glomospora empetri* D. M. Hend. (*1961:* 497). This species was found in Scotland on *Empetrum nigrum* and *E. hermaphroditum*.

(**16**). Gould (*1945*) pointed out that the name "*Glomerularia lonicerae* (Pk.) D. & H.", given to the imperfect state of *Herpobasidium deformans*, was a nomen nudum (p. 318). At the same time he showed no inclination to publish it validly as the correct name for the imperfect state. His use of it is a perfect example of 'incidental mention'. Moreover, even if he had thought that it ought to be retained for the imperfect state, he failed to publish it validly since he neither referred to a valid and previously published description nor did he give an accompanying Latin description. Briefly, the history of the name is as follows. Peck (1885) was the first to record the fungus, as *Glomerularia corni* "on *Lonicera ciliata*", without, however, providing either a name or a description. Dearness & House (1923) behaved as though he had actually published the name *G[lomerularia] corni* var. *lonicerae* Peck and they proceeded to recombine it as "*Glomularia lonicerae* (Peck) comb. nov." (the correct spelling of the generic appellation should have been 'Glomerularia'), but they still failed to provide a description. As pointed out above, Gould did nothing to improve on the nomenclative status of the name and evidently did not wish to. When Henderson (*1961*) replaced the preoccupied generic name '*Glomerularia*' by '*Glomopsis*', he also remarked, "If a name is required for conidial *Herpobasidium deformans* the following is proposed. / *Glomopsis lonicerae* (Peck ex Gould) Henderson, comb. nov. . . .". Not only because this introduced only a provisional name, but also because there was no valid reference or Latin description the new name remained a nomen nudum. Since I believe that it is desirable, to have a validly published name for the imperfect state, I herewith establish the following by adopting and translating into Latin Henderson's English characterization of this state with respect to *Glomopsis corni* (Peck) D. M. Hend.

Glomopsis lonicerae Donk, *sp. nov.*

[*Glomerularia corni* "on *Lonicera ciliata*" Peck *in* Rep. New York St. Mus. **38**: 111. 1885 (lacking descr.). —] *Glomerularia corni* var. *lonicerae* Dearness & House *in* New York St. Mus. Bull. Nos. 243–244: 85. Issued May 15, 1923 (name attributed to Peck and listed as a synonym; "1921"). — *Glomerularia lonicerae* Dearness & House *in* New York St. Mus. Bull. Nos. 243–244: 85. 1923 ["*Glomularia* . . . (Peck) comb. nov."; "1921"; nomen nudum]; Gould *in* Iowa St. Coll. J. Sci. **19**: 301, 317, 319. 1945 (incidental mention). — *Glomopsis lonicerae* (Dearness & House) D. M. Hend. *in* Notes R. bot. Gdn Edinb. **23**: 501. 1961 ["(Peck ex Gould)"; nomen provisorium & nudum].

A *Glomopsis corni* (Peck) D. M. Hend. differt conidiophoris epidermidem per poros stomatorum penetrantibus; si vero conidiophori 2 vel plures eundem porum penetrant, per laminae faciem distanter dispersi sunt, atque nunquam sorum completum formant.

This differs from *Glomopsis corni* (Peck) D. M. Hend. in that the conidiophores penetrate the epidermis only through stoma pores and although two or more may penetrate one pore the conidiophores are dispersed at intervals over the leaf surface and never form a compact sorus. — Type: U.S.A., labelled by Peck, "Aiden Lair, Adirondack Mts. Charles H. Peck, June, form *lonicerae ciliatae*" (NYS).

Hirneola (**8**)

(**17**). During the past decennia some confusion has arisen about the correct specific name of the Jew's or Judas's ear. This was due to changes incorporated in the "Code of Botanical Nomenclature" as well as to the fact that Fries misinterpreted the species when accepting it in the starting-point book. As was pointed out by Donk (*1958b*: 171, and earlier), "when Fries returned to this species in his 'Systema' (**2**: 221. 1822) it is clear that the species he then described under the name of *Exidia auricula-judae* is a mixture of the true Judas's ear (compiled from literature) and of a species of *Exidia* Fr. which was studied from specimens (description!) . . . . *Hirneola auricula-judae* is exceedingly rare in Sweden: besides the collection distributed by Lundell & Nannfeldt, I came across [only one other Swedish] specimen in Thunberg's herbarium at Uppsala . . .. Linnaeus had mainly the true *H. auricula-judae* in mind (literature)." There are now two schools of thought about the typification of revalidated and at the same time misapplied names. Some authors desire to choose the type from the material to which the name was misapplied, which would in this case make 'auricula-judae' an epithet pertaining to a species of *Exidia*. Others think that Fries himself conceived a species including more than one specific element and that by the choice of the epithet he clearly indicated that he definitely included the *Hirneola* element. His choice of the name amounted to admitting the type of that name and its basionym, *Tremella auricula* L., to his conception so that it is logical to stick to it. This point of view does not vie with the Code and is in strict agreement with the type method basic to its philosophy. Not the least of the reasons for adopting it here is that it is possible that Fries had studied Thunberg's material as one of the specimens used in drawing up his account of the species in the "Systema". Hence, in my opinion, the correct epithet is 'a u r i c u l a - j u d a e'.

There remains the question as to precisely which collection must be regarded as the type of the name *H. auricula-judae*. Since its pre-starting-point basionym, *Tremella auricula-judae* Bull., must be considered a mere variant of (or at most as a name change for) *Tremella auricula* L. and since Fries quite obviously thought that Linnaeus had called it "*T. Auricula Judae*" it is best to select from Linnaeus's citations the one accompanied by an illustration, viz. *Agaricum Auricula forma* Mich. (1729: 124 *pl. 66 f. 1*), and to regard the specimens depicted by Micheli as lectotype of *Tremella auricula* L. and all the isonyms listed above (pp. 158-159).

(**18**). *Hirneola a u r i c u l a - j u d a e* has been too broadly conceived by authors following in the track of Möller (*1895*: 42). From his experience in southern Brazil

he arrived at the, certainly erroneous, conclusion that all the species of *Hirneola* he came across were merely forms of a very variable species that he called *Auricularia auricula-judae*. Even *Laschia delicata* Fr. were such a form; in this the hymenium develops distinctly merulioid. This point of view was later defended by Holtermann and also by Lloyd. My own long experience in the tropics (Java) and Europe, as well as my fleeting experience in North America, have convinced me that *Hirneola* comprizes several good species even though the delimitations of these species are far from being well understood.

It seems safe to postulate for Europe (in nature) a single species occurring principally on *Sambucus* but also on various other frondose trees like *Fagus*, but not on conifers (such as a form called *H. auricula-judae* in Canada). The possibility that in Mediterranean Europe there may occur other species should be kept in mind. It is also safe to assume that the specific delimitations within the genus have not yet been worked out satisfactorily, especially as far as neighbouring Asia and North Africa are concerned. This explains why only synonyms based on European material are given in this check list. It is not improbable that other names based on extra-European collections should have been mentioned, but it remains for a future monographer to work these out.

Mycogloea

(**19**). This genus was for the first time almost completely understood by von Höhnel (*1917*) but because he believed that it should be identified with *Mylittopsis* Pat., described from North America, it was not published as a new genus. This error of identification is understandable if one looks up Patouillard's incomplete account (*1895*); this does not desdribe the further development of the young basidia. It was afterwards found by Rogers & Martin (*1955*) that (in contrast to *Mycogloea*) the maturing basidia in *Mylittopsis* do not move from their place of origin and produce outgrowing sterigmata which reach just beyond the outer surface of the fruitbody to produce their spores. When well-developed the fruitbodies are also considerably larger.

von Höhnel interpreted the 'primary spores' of *Dacrymyces macrosporus* correctly as basidia, and the 'secondary spores' as basidiospores: "es ist mir nicht zweifelhaft, dass die Primärsporen keine solchen, sondern abgerissene Auricularieen-Basidien sind". Of freshly collected material that he regarded as conspecific with *D. macrosporus* he stated: "Die Konidien [Basidien] lösen sich leicht in Menge von ihren Stielen ab." What he did not preceive was that this was the normal process and that the basidiospores are formed on the freed basidia.

(**20**). In search of a name for a fungus that he had collected in Austria and Herzegovina, von Höhnel after studying their protologues only concluded that it was conspecific with *Dacrymyces macrosporus* B. & Br. and *Fusisporium obtusum* Cooke. The study by McNabb of the types of both these names has shown that he

was correct. Instead of taking up *D. macrosporus* as basionym, however, von Höhnel preferred to identify his fungus with *Tremella fragiformis* var. *carpinea* A. & S. He based his judgement only on the original description and this is so incomplete that it is wiser not to follow him. In any case the specific combination '*Mylittopsis carpinea*' adopted by von Höhnel is of a later date than the name *D. macrosporus*.

Phleogena

(**21**). It is unlikely that the list of synonyms given above is exhaustive; in the genus *Pilacre* there are still a few 'species' described from various localities all over the world that might appear to belong under *Phleogena*. Whether or not this genus is monotypic or, perhaps, consists of a number of closely related species is still open to doubt.

Saccoblastia

(**22**). This genus as treated by Bourdot & Galzin (*1928:* 4) consisted of two sections, one, '*Saccoblastia* Moell.', with "Réceptacle flocconneux hypochnoide", and the other, '*Saccogloea*', with "Réceptacle gélatineux muqueux". This was in agreement with Bresadola's view and the then current interpretation of Möller's species as floccose or hypochnoid. Then Baker (*1936:* 93–95) interpreted the consistency of *Saccoblastia ovispora* A. Möll., the type species of the generic name *Saccoblastia* A. Möll., as mucous-gelatinous and she boldly identified it with *Helicogloea lagerheimii* Pat. apud Pat. & Lag. This led to the complete replacement of the name *Saccoblastia* by *Helicogloea* since she regarded these two generic names as based on the same species. According to this view Bourdot & Galzin had misapplied the name when they used it in a restricted sense and referred the floccose European *Saccoblastia pinicola* to what they considered to be the type section.

Donk (*1958b:* 242) questioned Baker's view and concluded that the type species is in fact floccose, as had been previously assumed. Since no type or other material of it is known to exist, Möller's protologue is the only source from which the true nature of the consistency of the fruitbody can be established. In my opinion it is beyond reasonable doubt that this is 'floccose' rather than 'gelatinous'. Future well-annotated collections from the type locality (Brazil, Blumenau) are needed to shed new light on this question.

The next question to be considered is whether or not the two sections recognized by Bourdot & Galzin are worth maintaining. Baker (*1946:* 630) expressed here opinion as follows: "The genus falls naturally into two lines depending upon the character of the fructification, which may be of the mucous-gelatinous ('tow-like') type, or the distinctly floccose (hypochnoid) type." This agrees with my own findings and supports the conclusion, offered here as a working hypothesis, that the two sections deserve to be treated as distinct genera.

(**23**). **Saccoblastia farinacea** (Höhn.) Donk, *comb. nov.*; basionym, *Helicobasidium farinaceum* Höhn. *in* Sber. Akad. Wiss., Wien (Math.-nat. Kl., Abt. I) **116**: 84. 1907.

TREMELLINEAE

Craterocolla

(**24**). Several generic names have been proposed for this genus, but the protologue of only one, *Craterocolla* Bref., emphasizes and fully describes both the imperfect and perfect state. In a note below (**26**) it is pointed out that *Ombrophila* Fr. sensu Quél. 1873 evidently also includes both states, but that at that time Quélet had not yet recognized the true nature of the basidia, which he was apparently describing. This was prior to the publication of *Craterocolla*, but *Ombrophila* sensu Quél. was not a new name: it is merely a misapplication of the name of one of the genera of discomycetes and as such has no nomenclative standing. When in 1892 Quélet definitely excluded the type of *Ombrophila* Fr. he established a later homonym (which is impriorable) and changed its definition to such a degree that it is impossible to regard it as based on a species of *Craterocolla*.

The other generic names are nomina anamorphosium. This is quite clear in the case of *Poroidea* Wint., in which no trace of the basidiferous state had developed. In my opinion *Ditangium* P. Karst. is also based on the imperfect state, although traces of the perfect state may have been present, as was later claimed by Karsten. Donk [1962 (Ta 11): 83; 1964 (Ta 12): 16] discussed the nomenclative status of this name at some length and concluded that the names *Ditangium* and *D. insigne* were intended only for the imperfect state; at the time of publication the author was evidently unaware of the existence of the perfect state. Hence, the two names are nomina anamorphosium as well.

(**25**). Establishing the correct name for the species often called *Ditangium cerasi* (Schum. per Tul.) Cost. & Duf. is no mean task. A discussion on what must be considered to be the correct generic appellation (viz. *Craterocolla*) was presented in the preceding note.

Tremella cerasi Schum. (1803: 438) was described as follows:

"gregaria, gyroso-lobata substipitata dilute purpurascens diaphana. Inter corticem & lignum *Pruni Cerasi*. Decemb. An potius Varietas *Pezizae metamorphae* ?"

This does not agree with the species of *Craterocolla* under discussion. Fries (1822: 217) considered Schumacher's species to be conspecific with *Tremella sarcoides* Fr. [= *Pirobasidium sarcoides* (Fr.) Höhn.], an imperfect state of the discomycetous fungus *Coryne sarcoides* (Jacq. per Pers.) Tul., and Neuhoff (*1935:* 3) concluded that Fries might well have been correct. In any case Neuhoff dropped *Tremella cerasi* Schum. from the synonymy of '*Ditangium cerasi*'. In my opinion, the original description suggests a species different from *Pirobasidium sarcoides*, although it is apparently closely related to it, viz. *Sirobasidium cerasi* Bourd. & G., recently so well redescribed by Christiansen (*1963*) and Malençon (*1964*). This is the imperfect state of another species of *Coryne*; it has been found in Sjaelland (Denmark), the locality from which *T. cerasi* Schum. was described.

Like Neuhoff, I am convinced that when the Tulasnes (*1871:* 39) took up the name *T. cerasi* Schum. they misapplied it. To my way of thinking this indicates that *T. cerasi* Schum. per Tul. must be replaced by another name. According to the "Code" it is true that Neuhoff published a new name, i.e. *Ditangium cerasi* Neuh., for a new species when he excluded the type (viz. *T. cerasi* Schum.) but this name is preoccupied by *Ditangium cerasi* (Schum. per Tul.) Cost. & Duf. 1891; because of the pre-existence of *Craterocolla cerasi* (Schum. per Tul.) Bref. Neuhoff's new name can also not serve as basionym for a new combination with *Craterocolla*. Finally, it is impossible to invoke a new rule by assuming that '*Tremella cerasi* Tul. (non Schum.)' were based on the perfect state of '*Tremella cerasi* Schum,' and that accordingly it must be typified by the perfect state: the Tulasnes described a quite different fungus with an imperfect state of its own.

The next step is to determine whether there is a validly published name based on the perfect state available. To be dismissed are the following names listed as synonyms by Neuhoff (*1935:* 3–4): *Ditangium insigne* P. Karst. (**24**); "*Ombrophila lilacina* Quélet" = *Ombrophila lilacina* (Wulf. per Fr.) P. Karst. sensu Quél., a misapplied name (**26**); *Dacrymyces conglobatus* Peck, based only on the imperfect state and therefore a nomen anamorphosis; *Poroidea pithyophila* Göttinger ex Wint., another name based on the imperfect state; "*Ombrophila rubella* Quélet" = *Ombrophila rubella* (Pers. per Pers.) Quél. sensu Quél., another misapplied name (**26**); and *Ombrophila pura* (Pers. per Pers.) Fr. sensu Quél. (**26, 40**) and *Peziza cerasina* (Wulf.) per Steud. (**26**), still other misapplied names, neither of them mentioned by Neuhoff.

From my interpretation of the "Code" I can only conclude that *Tremella cerasi* sensu Tul. has as yet no correct specific name. Pending further inquiry into this question, I am taking it for granted that the addition of 'Schum.' to the name *Tremella cerasi* by the Tulasnes was an error.

(**26**). Quélet's knowledge of the paper by the Tulasnes (*1872*) on Tremellales was remarkably incomplete. It is obvious that he had never studied their description of *Tremella cerasi* Schum. sensu Tul. carefully, otherwise his interpretations of the genus *Ombrophila* Fr. would have been less confused.

His first generic description of *Ombrophila* "F." [Quélet, 1873 (MMb V 2): 412] runs: "Conique, tronqué et marginé, gélatineux, à la fin déformé, tremblottant et visqueux par l'émission des spores." A more correct definition would have been: 'Fruitbodies gelatinous, of two kinds, minute cup-like and marginate succeeded by appressed, cushion-shaped, then irregular and much larger ones.'

Ombrophila violacea Fr. sensu Quél. (1873): "Obconique (1–2 millim.), puis déformé, trémelloïde (2–3 cent.), *rose-violacé*, pâle. Spore ovoïde. Conidies, courbés. / ... En groupe sur les troncs des vergers (Cerisier)." This is almost certainly typical *Craterocolla cerasi*. The ovoid spores may have been basidia. — In the original sense this is a discomycete now known as *O. violacea*.

Ombrophila lilacina (Wulf. per Fr.) P. Karst. sensu Quél. (1873): "Gélatineux-mou, plus haut que large (1 millim.); disque plat, *pruineux, lilacin*. Déformé et gonflé

(une noisette) par l'humidité. / . . . Branches mortes, pommier." This description is by itself insufficient for recognizing the fungus; however, the figures (if not transposed) show not only the two kinds of fruitbody but also what may be taken as (undivided) tremellaceous basidia as well as curved spores. Hence, this might also well be *Craterocolla cerasi*. — In the original sense this is a discomycete now known as *O. lilacina*.

Thus far Quélet in his publication of 1873. Ten years later, on the occasion of the publication of a third species, Quélet [1883 (Crf 11): 402] had come to the conclusion, that his genus "*Ombrophila* est un genre de la famille des Trémellinées, voisin de *Exidia* et comprenant les espèces exosporées de l'ancien genre de Fries, comme *lilacina* . . .". The species added is:

Ombrophila rubella (Pers. per Pers.) Quél. sensu Quél. (1883). Description and figures (showing mature tremellaceous basidia) are sufficient for again recognizing *Craterocolla cerasi*. — In the original sense this is a discomycete now known as *Hyalina rubella* (Pers. per Pers.) Nannf.

In subsequent work *Ombrophila* was given a new and surprizing definition (Quélet, 1886: 230): "Tremulae, e globoso truncatae, marginatae. Hymenium discoideum. Spora ellipsoidea, incurva. Corticolae." A further species entered into the picture and it was this addition, *Ombrophila pura* (Pers. per Pers.) Fr. sensu Quél. that brought about the change. This influence is even more apparent in Quélet's following definition (1888: 20): "Gelatineux, globuleux puis hémisphériques, marginés et enfin bosselés, difformes. Hymenium *plan, marginé*. . . ." (Italics as in the original.) I am almost convinced that Quélet had come across *Neobulgaria pura* [2] (**40**), or perhaps *Myxarium hyalinum* (in view of the spores and the colour of the fruitbody, though this is not marginate), but although he cited *Ditangium insigne* P. Karst. as synonym his fungus is certainly not a species of *Craterocolla*, like *C. insignis* (**27**). As substratum he gave, "Sur l'écorce des sapins, dans les montagnes." His 'protologue' suggests a very thorough mixture of at least two, very probably more, unrelated species.

That by 1886 Quélet had changed his conception of *Ombrophila* also appears from a later remark: "Le genre *Ombrophila*, Fr. Sum. Veg. p. 357, comprenait au moins deux genres appartenant à des familles éloignées: *Ombrophila violacea* (Hedw., mic. an. 1789, t. 8 f. A.),[3] ascospore, type du genre *Ombrophila*, [Fr. em.] Karst., et *Ombrophila pura*, Pers., (Obs., I., p. 40), basidiospore, type du genre *Ombrophila* [Fr. em.] Quél., Enchir., page 23"—Quélet [1892 (Rm 14): 67]. By expressly excluding the type of *Ombrophila* Fr. (viz. *O. violacea* Fr.) Quélet, in 1892, introduced a new generic name, *Ombrophila* Quél. (non Fr.) that he holotypified by his conception of *Peziza*

[2] "Globuleux, obconique ($o^{m}02$), glabre, *incarnat-purpurin*. Hymenium plan concave, bordé d'une marginelle flexueuse, diaphane. Spore arquée ($o^{mm}012$-15), hyaline . . .."—Quélet, 1888: 20.

[3] The author's citation 'Hedw.' is an error introduced by Karsten and disseminated by Rehm 1891 (RKF 1^{3}): 477. The species intended is *Ombrophila violacea* Fr. ≡ *Peziza clavus* var. *violascens* A.& S.

pura Pers., which, perhaps, and at least in part, may be the same species as the holotype of *Neobulgaria* Petr. (**40**), to which some foreign features (basidia and spores) were added that led to the new genus. This makes *Ombrophila* Quél. 1892 not only a later homonym but also a nomen confusum. It may be pointed out that as early as 1886 *O. violacea* sensu Quél. had disappeared as a species of Quélet's conception of *Ombrophila* Fr.

A further addition to the genus made by Quélet (1886: 230) was *Ombrophila rubella* var. *cerasina* "Wulf." In his next book (Quélet, 1888: 20) he dropped it as a distinct taxon and listed it as a synonym of his interpretation of *Ombrophila rubella*. I find it difficult to guess at the identity of "*Elvella*" *cerasina* Wulf. (see "Index"). From the section of the description published by Quélet one would conclude that he had correctly identified it, viz. as the imperfect state of *Craterocolla cerasi*. However, von Wulfen's protologue [cf. Persoon, 1801: 635] also contains "Stipites . . . semi pollicaris", which indicates a much bigger fungus. I am not prepared to follow Quélet in his identification.

(**27**). On the basis of its geographical distribution and substratum ("Semper ad *Piceam excelsam*, praesentim ad caudices corticatos prolapsosque in silvis virgineis crescit"), Laurila [1939 (AVa 10[4]): 1] considered *Ditangium insigne*, as he found it in Finland, to be a 'biological' species possibly distinct from *Craterocolla cerasi*. He admitted, however, that its microscopical features agreed fairly well with *C. cerasi*. He gave no description of the perfect state of *Ditangium insigne*; the most complete description of this was published by Eriksson, who followed Laurila in conceiving it as specifically distinct. Neuhoff had provisionally admitted two forms within one species.

I have refrained from accepting this second species mainly because no specific name based on the perfect state is available, *Ditangium insigne* being in my opinion a nomen anamorphosis (**24**). Further information about its distribution together with other details are needed. It may be recalled that *Poroidea pithyophila* (which is usually regarded as another synonym of *Craterocolla cerasi* given to the imperfect state) was found on "Fichtenrinde" and presumably in Austria. *Dacrymyces conglobatus* Peck was found on "bark of arbor-vitae, *Thuja occidentalis*."

Eichleriella

(**28**). In its currently accepted circumscription the main features of this genus that differentiate it from *Sebacina* sensu lato, are the well-developed basal layer of thick-walled hyphae parallel to the hymenium and the fruitbody, said to be 'cupulaire ou résupiné à bords libres' (Bourdot & Galzin, *1928:* 46). This last feature is not correct without the additional qualification, 'in dried fruitbodies'. It is the contraction of the well-developed basal layer that causes margins of the fruitbody to loosen from the substratum, as in *Peniophora quercina*. Although I have retained it in the same circumscription as Bourdot & Galzin, this does not imply that the genus

might not be artificial. That it is not a natural one has been maintained recently, e.g. by Wells (*1962:* 321–322).

Wells has transferred to *Exidiopsis* the type of the name *Eichleriella*, viz. *E. incarnata* (which he identifies with *E. alliciens*[4]) together with *Eichleriella leucophaea* and a few other, extra-European, species as well as with *Sebacina calcea* because he does not consider the basal layer sufficiently characteristic to maintain this group as a distinct genus. The reason that *Sebacina* (= *Exidiopsis*) *calcea* escaped classification as a species of *Eichleriella* is that the somewhat abrupt margins of its fruitbody do not loosen upon drying; this implies that its basal layer is not quite so strongly developed as in the other members of the artificially conceived genus *Eichleriella*. I considered accepting Well's disposition of the type species and its allies as members of *Exidiopsis*, but this would have resulted in the loss of the name *Eichleriella* altogether and left a residue for which so far no adequate alternative classification has been proposed. Meanwhile it has seemed preferable to remain 'conservative' and to maintain *Eichleriella* unaltered.

Eichleriella spinulosa (**29**) is considered by Wells to belong to a series of which such extra-European species as *Heterochaete delicata* (Kl. ex Berk.) Bres., *H. lividofusca* Pat. apud Pat. & Lag., and *Protohydnum cartilagineum* A. Möll. (sensu G. W. Mart.) are a part and which is distinguished by basidial characters. These species, according to Wells (*1962:* 321), "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." However, much additional information on these and other species must still be gathered before this group can be more definitely isolated in the form of one or more distinct genera. Several generic names are tied to species of this series: *Protohydnum* A. Möll. [cf. 1958 (Ta 7): 241] to *Protohydnum cartilagineum*, *Bonia* Pat. [cf. 1958 (Ta 7): 172; preoccupied] to *Bonia papyrina* Pat. = *Heterochaete delicata*, and *Heteroradulum* Lloyd [cf. 1958 (Ta 7): 202; not accepted by its author: n.v.p.] to *Radulum kmetii* Bres. See also remarks on *Heterochaete* (**41**).

Finally it should be remarked that a few odd, extra-European species would seem to belong to neither the one nor the other of the two groups outlined above.

(**29**). Since Burt identified *Radulum deglubens* with *Eichleriella spinulosa* this disposition has been generally accepted except that recently Reid concluded that *R. deglubens* differed from *Eichleriella spinulosa* in "that the true *E. spinulosa* has narrower spores and smaller basidia than the European material [*R. deglubens*]. In addition the probasidia of the European collections are strongly clavate whilst those of true *E. spinulosa* are cylindrical to broadly ovate." Moreover, Reid concluded that the correct name for the European species was *Eichleriella deglubens* (B. & Br.) Lloyd.

[4] Neuhoff (*1936b*: 31) referred *Eichleriella incarnata* to *Eichleriella spinulosa*, which, as to the European conception (**29**), is a quite different species. Both authors said they had studied the type.

Because he was unable to note any significant difference between European and American specimens Wells (*1962:* 364–365) could not agree. Shortly afterwards Reid & Austwick [1963 (GN 18): 329] stated that examination of the type of *Eichleriella spinulosa* showed it to be a gloeocystidiate fungus with narrower spores, 15.6–16 × 6 μ, probably belonging to the genus *Heterochaete*.

Pending further research on this question *E. spinulosa* will not be accepted in this check list as a European species. If the two are distinct, it is still possible that both may occur in Europe.

As for the correct name, it may be pointed out that the name *Eichleriella deglubens* has not yet been validly published: Lloyd never accepted the combination as correct and Reid cited the basionym only through an insufficiently detailed reference.

Exidia

(**30**). This genus is emendated here by the exclusion of all species known to possess myxarioid sphaero-pedunculate basidia (**43**). These have been transferred (i) to *Myxarium*, which now consists of the *Exidia gemmata* group; or (ii) they have been placed in an appendix ('Microtremella') to *Tremella*, as far as the species with minute fruitbodies are concerned. This appendix also includes a few other species with equally minute fruitbodies, the exact nature of the basidia of which is still unknown. In this way the species with not quite typical '*Exidia*'-spores and immarginate hymenium were removed, the genus thus gaining in homogeneity.

The most important study devoted to the genus is that by Neuhoff (*1936b:* 7) on the European species. I have followed him as closely as possible. On some important points I was compelled to deviate from his conclusions: my reasons are given in the following notes and in the Note on *Tremella intumescens* (**65**).

(**31**). 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 re-introduced 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 (**58**).

After making several collections of *Exidia* in Sweden, I realized that Fries's conception published in the "Systema" is different from the species now called *Exidia albida*, at least as far as his own description goes. He described two forms (which he did not provide with names): (i) the form he had principally in mind and that must be regarded as the typical one (form a), and (ii) his forma "b". Leaving aside a very few descriptive words taken from other authors,[5] as well as all citations and synonyms, the following description and comment results:

[5] Left out: "[Color . . . demum . . .] & nigrescens. (Bull. l.c. f.c.) 'lutescens' Sowerb. l.c."

Form a: ". . . expansa, tenax, undulata, subgyrosa, albida. / a. adscendens, l. rotundata . . ./ Affinis *T. mesentericae*; sed minor, tamen a, saepe uncialem . . . longam reperi. Forma nulla constans; sed superficies demum pruinosa, substantia fere callosa. Color albidus, hyalinus, demum fuscescens . . .. Ne cum varietatibus glaucis *Exidiae glandulosae* commutes, cavendum est. Ad ramos varios sed praecipue fraxineos, passim. Hieme, vere. (v.v.)."

Formb: "b. effusa, applanata. . . . / . . . b. 3–4 unc. longam reperi . . .."

This information is sufficient for recognizing a species of *Exidia* common throughout most parts of Sweden, where it occurs mainly on birch. In particular I should like to emphasize ". . . expansa, tenax . . . substantia fere callosa. Color albidus, hyalinus, demum fuscescens . . .". These words, in combination, are applicable only to *E. cartilaginea*, typical form.[6] In only one point does Fries's description fail to fit this species like a glove: various frondose trees may serve as substratum, but the most common host in Sweden is *Betula* rather than *Fraxinus*.

The first full description of *Tremella albida* sensu Fr. was published by Karsten [1876 (BFi 25): 347; "sec. Fr."], who added details of the spores; he also distributed *E. cartilaginea* twice under the name *Tremella albida*. It is clear that he reserved the name *T. albida* for Fries's conception and, moreover, that he was in doubt about its correctness, otherwise he would not have added "sec. Fr."

It is interesting to note that Neuhoff (*1936b:* 16) recognized *E. cartilaginea* in Fries's description only with reservations. He thought that 'Fries, in his *Tremella albida*, seems to have combined this species with all the other bright-coloured [hellfarbigen] species of *Exidia* and *Tremella*' (translated). This is true only if the references and the descriptive quotations admittedly taken from other authors are taken into consideration. It is still more remarkable to note that Neuhoff also stated that *E. cartilaginea* 'is mentioned as *Tremella albida* with tolerable certainty by Sommerfelt in 1826 for the first time in literature' and he then proceeded to cite Sommerfelt's description (1826: 306), without realizing that this is practically identical with that of Friess's! Compare: ". . . expansa, tenax, undulata, subgyrosa, albida. . . . / . . . Numquam candida, sed albida subhyalina, demum fuscescens. Substantia fere callosa. Subeffusa, ad 2 unc. long." If this description points to *E. cartilaginea* "mit ziemlicher Sicherheit" I do not understand why that of Fries should not. It may be mentioned that Sommerfelt gave as substratum rotten, fallen branches of *Betula alba*, which is more likely to the point than Fries's indications.

What does the form b represent? Again I can conclude only *E. cartilaginea*. Fries merely distinguished between two growth-forms. His forma a ("adscedens l. rotundata") is matched by some fruitbodies depicted by Neuhoff (*1935: Ft. 3 f. 1*). There is no reason to suppose that forma b would be anything but the flattened, confluent form depicted in the same figure. There is no indication that necessitates the conclusion that more than one species is involved in Fries's description, drawn up from fresh material.

It is true that the citations and references all refer to species different from *E. cartilaginea*. These are *T. albida* Huds. (≡ *Exidia albida*), the name-bringing ref-

[6] *Exidia cartilaginea* f. *abromeitii* Neuh. will not be considered in this connection.

erence; *T. candida* Pers., which I interpret as a species of *Tremella* (**58**); and *T. cerebrina* var. *alba*, another species of *Tremella* (**59**).

The correct name still remains to be settled. The name *Tremella albida* was revalidated by Hooker in its (presumably) original sense. By accepting the name in his "Systema", Fries made it a nomenclatively correct one. It is immaterial that he misapplied it, or, rather, applied it to a mixture of different species; by ascribing the name to Hudson he clearly indicated that he also included Hudson's species in his overall conception, and that species represents the type. Other authors who are disposed to accept the above conclusion about Fries's conception may feel obliged to transfer the name *Tremella albida* to *Exidia cartilaginea* and proceed to call the true *T.* (*Exidia*) *albida* by still another name, perhaps *T. thuretiana* Lév. 1848.

(**32**). *Tremella glauca* Pers. was too briefly described to be more than a nomen dubium: "effusa tenuis, caesio-albida. (Ad ramos *Samb. racem.* &c.)." Later on Persoon (1801: 624) reduced it to a variety or subspecies or *Tremella spiculosa* Pers. = *Exidia glandulosa* Bull. This information taken together strongly suggests *Exidia albida*. The only author to record Persoon's species and to re-describe it somewhat more fully was Schumacher (1803: 438) and I have little doubt that his fungus ("caesio glauca") is indeed *E. albida*.

As pointed out above, Fries misinterpreted *Exidia albida* by confusing it with *E. cartilaginea*. Did he know the true *E. albida* when writing the second volume of his "Systema"? This seems very likely, since it occurs in the neigbourhood of Femsjö. That Fries (1822: 224, 225) reduced *Tremella glauca* of both Persoon ("junior") and Schumacher to his broadly conceived *Exidia glandulosa* and that he thought the latter species to be "primo albido-glaucus", as well as that under *Tremella albida* [sensu Fr. = *E. cartilaginea*] he remarked, "Ne cum varietibus glaucis *Exidiae glandulosae* commutes, cavendum est" are significant support for the conclusion that he included *E. albida* in his conception of *E. glandulosa*.

(**33**). It is now customary to cite '*Tremella viscosa* B. & Br.' as a synonym of *Exidia albida*. This is not correct; the name was not given to a new species but is merely an avowed isonym of *Corticium viscosum* Pers. Berkeley & Broome [1854 (AM II 13): 406] cited "(P.)" after their new combination and added the reference "*Corticium viscosum*, P. Obs. 2. p. 18." This Persoonian species is currently regarded as belonging to *Corticium lividum* (Pers. per Fr.) Fr., a species of *Phlebia* Fr. emend.

It was Fries (1874: 691–692) who excluded the type of *Tremella viscosa* sensu B. & Br.: "*C*[*orticium*] *viscosum* Ed. I. l.c. s. *Theleph.* Pers. Syn. p. 580 est varietas caesia [*Corticii lividi*]". He thus introduced a 'new' species, *Tremella viscosa* Fr., which is not only a later homonym of *T. viscosa* (Pers.) B. & Br., but is also based on the material that served for Berkeley & Broome's description. Reid & Austwick [1963 (GN 18): 330] thought it "probable that Berkeley and Broome applied the name to cover specimens of both *E. thuretiana* [= *E. albida*] and *E. nucleata* (Schw.) Burt. [= *Myxarium hyalinum*]." This suggestion calls for the selection of the type from among

Berkeley & Broome's specimens for *Tremella viscosa* Fr., so that I formally select the specimen microscopical details of which were depicted by Berkeley & Broome. Compare Neuhoff: "Sporenform und Grösse im Verhältnis zur Hypobasidie lassen keinen Zweifel, dass *Ex. albida* vorliegt."

Since Rea (1922: 735) did not make it clear that he excluded the type from Berkeley and Broome's conception, his "*E*[*xidia*] *viscosa* (Berk.) Rea" must be listed as a (misapplied) isonym of *Corticium viscosum* Pers. ≡ *Thelephora viscosa* (Pers.) per Fr. 1821.

Fries also referred *Thelephora viscosa* (Pers.) Pers. sensu Schum. (1803: 397) here. Persoon (1822: 149) did not recognize his *Corticium viscosum* in it and treated it as a new species: *Thelephora viscosa* Pers. 1822, not *T. viscosa* (Pers.) per Fr. 1821. Schumacher's drawing of his conception of *T. viscosa* (Pers.) Pers. 1801 (representing the type of *T. viscosa* Pers. 1822) was published by Hornemann [1825 (Fd 11 / F. 31): 12 *pl. 1851 f. 1*]. I find it difficult to recognize *E. albida* or any other species in this and, therefore, regard *Thelephora viscosa* Pers. 1822 as a nomen dubium.

(**34**). Neuhoff (*1936a:* 33) claimed that Fries's description in the "Systema" of *Exidia glandulosa* "in allen Punkten auf unsere *Exidia glandulosa* zu deuten [ist]; auch gehören sämtliche Proben im Herbar Fries der Universität Upsala, die die Bezeichnung '*Exidia glandulosa*' tragen, allein zu unser Art." As to the first claim, this is untenable: a careful analysis shows that Fries did not distinguish clearly between the true (Bulliard's) *E. glandulosa* and the species to which Neuhoff restricted the name. Fries's conception of *E. glandulosa* is in the main a true mixture of the two species mentioned, as it was to many later mycologists: "Magnitudine & forma maxime varia; junior orbicularis, adpressa, plicata, maculaeformis: dein late effusa (2–3 unc.) l. e. ramis longitudinaliter erumpens, turgida, undulata; interdum pezizoidea, in aliis stipitata e.s.p. . . ." (the spacing is mine). There is more in this vein. Among the references there are also several examples to show that he did neither exclude the name-bringing element, viz. "*Tremella glandulosa.* Bull. Ch. p. 220. *t. 420 f. 1*", nor *T. atra* O. F. Müll. *in* Fl. dan. *pl. 884*, in part, *T. spiculosa* Pers., *T. arborea* Huds. sensu Sm., Engl. Bot. *pl. 2448*, *T. papillata* Kunze, which are all referable to Bulliard's *T. glandulosa.* In short, *Exidia glandulosa* as conceived by Fries in 1822 is patently a combination of *E. glandulosa* sensu Neuh. and certain forms Neuhoff referred to *E. truncata.* It is clear that in comparison with Neuhoff Fries took the latter species in a narrow sense: "erumpit e ramis exsiccatis *Tiliae*" is the habitat he indicated for his conception of *E. truncata* in 1822 and that in 1874: 692 he still did so. Fries never drew a different line between the two. It is completely misleading to claim that he did not deliberately include typical *E. glandulosa* in its original conception. And he never excluded it: in his latest account of the species (Fries, 1874: 694) he even remarked: "Nomen Bulliardii antiquius et aptius, Persoonii praeferendum."! This is a protest directed at Sommerfelt (1826: 307) and particularly at E. L. Tulasne [1853 (ASn III 19): 200]. The latter had used the name *Tremella spiculosa* Pers. for exactly the same Parisian fungus that Bulliard had

called *T. glandulosa*. Finally it may be called to mind that Fries apparently also included *E. albida* in his emendation of *E. glandulosa* (**32**).

Should one wish to accept Neuhoff's conceptions of both his *E. glandulosa* and *E. truncata*, what then are the correct names? Although the names *Exidia glandulosa* and *E. truncata* were both accepted in the starting-point book (Fries, 1822: 224), they were not published simultaneously; the former is the oldest priorable name, dating from 1821 when it was validly published as *Tremella glandulosa* Bull. per St-Am., whereas the latter dates from 1822. Hence, when the two are united, the name *Tremella glandulosa* must be retained (as basionym). Moreover, it must be kept in mind that by excluding the type from his conception of 'glandulosa', Neuhoff defined a 'new' species; *E. glandulosa* Neuh. 1936 is, however, not only not validly published but it is also a later homonym of *E. glandulosa* (Bull. per St-Am.) Fr. 1822. Finally it must be recalled that although the first author to reduce the devalidated name *E. glandulosa* Bull. to the synonymy of *E. truncata* was Neuhoff (1936) he did not reduce the legitimate form of the name, viz. *Tremella glandulosa* Bull. per St-Am. 1821 or *E. glandulosa* (Bull. per St-Am.) Fr., to the synonymy of *E. truncata* Fr. 1822. As far as I am aware this was never done. In view of the excellent plate that Bulliard published, the specimens that were depicted by Bulliard, Herb. France *pl. 420 f. 1* are here maintained as representing the type of *Tremella glandulosa* Bull. ≡ *Exidia glandulosa* (Bull. per St-Am.) Fr. No specimens or figures exist that could be chosen similarly to typify *E. truncata* Fr.

(**35**). When attempting to decide on the correct name for *Exidia glandulosa* Neuh. (non Bull.) (**34**) one must first consider *Tremella arborea* Huds. In (**37**) I set forth my reasons for placing the name of the latter species in the synonymy of *E. glandulosa* Bull. sensu originario.

The following name to be examined is *Tremella plana*. This species, when first published, was described as follows:

"expansa, plana, undulata, atrovirens, arborea. / Color intus ceraceus extus initio viridis dein aterrimus. Ad marginem undulata & obtuse gyrosa. Ex omnibus *Tremellis* planissima maxime inflexa, complicata, varioque modo contorta est. Substantia tota gelatinosa, exsiccata magis membranacea, crassa, arborum cortices & parietes late obducit. [Holsatia.]"—Wiggers (1780: 95).

The name *Tremella plana* was validly published by a reference ("[*Tremella*] *plana* Roth") by Schleicher in a list of Swiss plants at the end of the year 1821; there is no accompanying description. The reference ("Roth") is to *Tremella plana* Wigg., of which Roth published a condensed account based exclusively on Wiggers's ('devalidated') protologue. The reference to 'Roth' is, therefore, indirectly also a reference to 'Wigg.', and since Roth had not incorporated any additional information on the fungus itself in his treatment there can be no question about the type; it is a specimen studied by Wiggers. It follows that the revalidated name must be cited as *Tremella plana* Wigg. per Schleich.

Wiggers's description (given above) is in my opinion sufficient to justify the con-

clusion that *Tremella plana* is the same species as *Exidia glandulosa* Neuh. (non Bull.) rather than *E. pithya*.

It may well be that when Schleicher recorded *Tremella plana* from Switzerland he had in reality collected *Exidia pithya*, an interpretation that he passed on to Secretan, who gave under the name *Tremella plana* a passable account of *E. pithya*. However, this has no influence on the interpretation of the original *T. plana:* as mentioned above, when Schleicher validly published the name he added no descriptive details but merely gave the reference "Roth". This all goes to indicate that the correct name for *Exidia glandulosa* Neuh. is **Exidia plana** (Wigg. per Schleich.) Donk, *comb. nov.* (basionym, *Tremella plana* Wigg., Prim. Fl. hols. 95. 1780; Roth. Tent. Fl. germ. **1**: 556. 1788 *per* Schleich., Catal. Pl. Helv., Ed. 4, 60. Dec. 29, 1821). The epithet 'plana' is well chosen for this species.

In accepting *E. glandulosa* and *E. plana* as different species I do not imply that, together with *E. pithya*, they are the only blackish exidias. *Exidia glandulosa* in particular seems to consist of a number of forms some of which may conceivably prove to be worthy of specific distinction. Several of the forms that Neuhoff described and referred to *E. glandulosa* Neuh. (= *E. plana*) might perhaps be better placed in the *E. glandulosa* complex. My experience is insufficient for me to be more positive. *Exidia plana* as conceived in this check list is the species most commonly found in western Europe and it is nearly always easily recognizable as such.

(**36**). As far as I have been able to conclude *Exidia applanata* Schw. 1832 is a synonym of *E. glandulosa* sensu Neuh. = *E. plana* (**35**). Schweinitz's protologue is, I believe, sufficient for recognition of the fungus he described. It had been previously reduced in accordance with this view: compare Neuhoff (*1936a:* 33 and Martin, *1952a:* 82).[7]

Exidia spiculata Schw. is a name published simultaneously with *E. applanata*. In agreement with Martin it is listed in this check list, together with *E. applanata*, as a synonym of *E. plana*, although it should be pointed out that some North American authors have considered it to be a distinct species, especially on account of the numerous small, white, calcareous granules contained in the surfaces.

(**37**). *Tremella arborea* Huds.—The pre-Friesian form of this name (*T. arborea* Huds.) has been thought to be nothing more than a binomial substitute for the phrase-name *Tremella arborea, &c.* Dill. Superficially this would seem to be correct: Hudson apparently borrowed the epithet from Dillenius and his phrase does not conflict with a long-current interpretation of *Exidia glandulosa* Bull. (**34**). However, this conception is now often considered too broad and it has been subdivided into

[7] Martin's description seems to be drawn up only from material referable to *E. glandulosa* sensu Neuh.; his synonymy, however, shows that he does not discriminate between this species and *E. glandulosa* sensu originario (*E. truncata* emend. Neuh.). Does the latter species occur at all in the North Central region of the U.S.A. with which his publication is concerned?

at least two species: *E. glandulosa* Bull. per Fr. sensu stricto and *E. plana* (Wigg. per Schleich.) Donk (= *E. glandulosa* Neuh.) (**34**). The question to be answered is to which of these elements the 'type' of Hudson's name belongs.

There is no doubt in my mind that Dillenius's fungus belongs to the common form of *E. plana:* compare "*Tremella arborea nigricans, minus pingui & fugax.* Witches Butter. / Tota e membrana gelatinosa constat, minus pingui & fugaci, quam praecedentis [*Tremella terrestris sinuosa, pinguis* & *fugax* Dill. ≡ *Nostoc vulgare* Vauch. per Born. & Flah.], colore obscure, e fusco nempe & rufo nigricante, per siccitatem nigro. Eminentias venosas habet absque ullo ordine. Subtus plana est, non rugosa, superne praeter venas cribris punctis tuberculosis nigris interstincta. / Arborum corticibus adnascitur . . . ." The figure is quite recognizable as well. The (devalidated) binominals *Tremella nigricans* With. and *T. picea* Latourr. were introduced for Dillenius's species.

Hudson's phrase runs, "sessilis subrotunda undulata nigrescens" to which is added "Habitat in truncis arborum", as well as four synonyms, the first of which is Dillenius's non-binomial name, which Hudson thought represented the first British record of his species. After comparing Hudson's phrase with Dillenius's protologue I could not avoid concluding that Hudson drew up his phrase from a lot of specimens different from those of Dillenius. The significant words 'sessilis, subrotundus undulatus' are Hudson's own and do not appear in Dillenius's account. These words suffice to justify the conclusion that Hudson had a different species in mind; this can only be a form of *E. glandulosa* Bull. (= *E. truncata* Fr. emend. Neuh.). The first interpretation of Hudson's fungus by Smith [1812 (EB 34): *pl. 2448*] is in agreement with this conclusion, as is the revalidation of the name by Hooker (1821: 31): "*Tr. arborea*, sessile gelatinous roundish undulated blackish [Hudson's phrase translated!] beset with mammillary white-headed processes on the upper side [taken from Smith's account]. Sm. in E.B. *t. 2448.* / Hab. On fallen trees and dead wood, frequent. . . ." These considerations may explain why *T. arborea* Huds. ≡ *Exidia arborea* (Huds. per Hook.) Sacc. appears on this check list as a synonym of *E. glandulosa* Bull. sensu originario (non Neuh.) = *E. truncata* Fr. emend. Neuh.

Exidia arborea "Lloyd", as listed by Stevenson & Cash (1936: 30), is simply an application of Hudson's name. When Lloyd collected Bulliard's *Tremella glandulosa* near Paris, he realized that it was different from what he was accustomed to calling *Exidia glandulosa* (*E. plana* of this check list). Being strongly and emotionally wedded to his own sacred principles of nomenclature he could not do otherwise than retain the name *E. glandulosa* for the fungus to which he had previously misapplied it and look for another name for what he was convinced was the fungus that Bulliard had called *Tremella glandulosa.* He thought that this might be called "*Exidia arborea* as named by Hoffman [!]." This is a complicated error. No doubt he picked up the idea from Bulliard (1791 H.: 220) who listed "*Tremella arborea* Hoffm. crypt. 37. *Tab. 8. Fig. 1.* fasc. I" as a synonym of his *T. glandulosa.* In Hoffmann's publication it will be found, first, that Hoffmann merely applied the name published earlier, *T. arborea* Huds., and, secondly, that he applied it incorrectly, viz. to *Exidia plana.*

Lichen fugax is very likely another early synonym of *Exidia plana*. The protologue (including a coloured plate) leaves little doubt in this respect. The author identified his species with *Tremella arborea, &c.* Dill. According to Degelius [1954 (Sbu 13[2]): 464] there is a 'syntype' in von Wulfen's herbarium (W) that is annotated by Arnold as "nicht *Nostoc*, sondern *Exidia* wohl *repanda* Fr." Arnold [1882 (VW 32): 160] also remarked: "Wulfen gibt so verschiedenartige Standorte an, dass unter seinem *L. fugax* (1789) sicher mehrere Arten zu verstehen sind." This may be true, but both description and plate suggest only *E. plana* and in any case not *E. repanda*.

(**38**). *Tremella atra* O. F. Müll. is a name that was introduced for two forms that are now often treated as specifically distinct. Of the two figures in the protologue, figure 1 represents the common form that is called *Exidia plana* in this check list, and figure 2, *E. glandulosa* (= *E. truncata* Fr. emend. Neuh.). The specimen depicted in figure 2 is herewith selected as type. This makes *T. atra* O. F. Müll. per Spreng. 1827 a synonym of *E. glandulosa* sensu originario. The choice was made to confirm the listing of *T. atra* as a synonym of *E. truncata* by Neuhoff (*1936a:* 41). It is true that Fries (1822: 224; 1828 E. 2: 35, "certe hujus loci") had previously listed *T. atra* as a synonym of *E. glandulosa*, but this was the listing of a devalidated name rather than of its priorable counterpart. It is also evident that Fries, unlike Neuhoff, did not consider the original *T. atra* to be a too broadly conceived species.

I cannot postulate any connection between the name under discussion and *T. atra* Schrank, which from its description I would rather refer to *Exidia plana*.

(**39**). It is now current practice to list *Tremella corrugata* Schw. (type from the U.S.A., North Carolina) as a straight synonym of *Exidia recisa*. It would seem that a southern form exists in the North American continent. Martin (*1952a:* 81) declared explicitly that (apparently as far as the North Central U.S.A. is concerned) Neuhoff's illustrations of the European material "are very good of our form and the microscopic differences [he] cited fall well within the limits of variability of a single species." This may well be the case, but the colour of *T. corrugata*, as mentioned in von Schweinitz's protologue as 'blackish-purple in colour', is certainly not reported for the European form. Coker [1920 (JMS 35): 131] identified *T. corrugata* with his conception of *Exidia gelatinosa*. His description is based on at least eight collections and gives the colour of the fruitbody as "deep blackish wine colour". He said the species is very common in North Carolina. In view of this unusual colour, and possible other differences, I have refrained from listing *T. corrugata* among the synonyms of *Exidia recisa*.

(**40**). It was suggested by von Höhnel [1918 (SbW 127): 354, 585] that the original *Peziza pura* Pers. might be identical with *Exidia umbrinella*. The former species has been the source of widely different interpretations. The first author to apply the name was Fries (1822: 168, as *Bulgaria pura*), who recorded it from *Fagus*, while Persoon's protologue records the habitat as "ad truncos abietinos". This

discrepancy was stressed by Petrak [1921 (Am 19): 43] when he published the genus *Neobulgaria* for "*Neobulgaria pura* (Fr.) Petr.": "Persoons Pilz ... ist ... völlig unsicher". His conclusion is questionable. Compare, for instance, "dilute carnea .... Ad truncos .... Cum *P. inquinante* quod formam exacte convenit. Substantia mollissima" (Persoon, 1801: 632). In any case, these indications do not agree at all with *Exidia umbrinella*, which has a different colour and, as to shape, does not strongly suggest *Phaeobulgaria inquinans*. It may be pointed out (i) that Fries had no doubt about the identity of Persoon's fungus with the one he called *Bulgaria pura*, that (ii) his description closely agrees with Persoon's, and (iii) that it has not yet been proved that his fungus (on *Fagus*) is really different. I am inclined to agree with an earlier conclusion arrived at by Petrak [1914 (Am 12): 479], viz. that Persoon erred when he named the substratum.

Petrak's returning from his earlier conclusion and his labelling of Persoon's fungus as "völlig unsicher" is the more astonishing because of the following remark [1921 (Am 19): 44]: "bei [*Neobulgaria pura* nimmt] der gelatinöse Schleim im Alter [zu], weshalb ganz alte Exemplare gleichsam zerfliessen. Dazu kommt endlich noch die auffällige Ähnlichkeit, welche der Pilz in frischem Zustande mit *B. inquinans* hat. Er sieht da genau so aus wie eine blass-fleischfarbige, ... weiche *Bulgaria*." This reads like a faithful paraphrase of Persoon's own words quoted above!

Quélet (1888: 20) confused *Peziza pura* still further. Under this name he engrafted into the description of a typical peziza-like fungus the spores of what may be supposed to be *Craterocolla*, a genus suggested by the citation of *Ditangium insigne* P. Karst. as synonym and the indicated substratum ("sur l'ecorce des sapins"). The fruitbody he described, cannot be the 'pycnidium' of *Craterocolla*, but it strongly recalls the fruitbody of *P. pura* (**26**).

Heterochaete

(**41**). This is rather a broad genus as far as genera of the Tremellaceae go, but in Europe it is very poorly represented. A monograph on it was published by Bodman (*1952*). It is evident that the genus is artificial even in its most restricted current sense, which does not include *Heterochaetella*. Wells (*1962:* 322) thought that *Sebacina hirneoloides* Pat. apud Pat. & Lag. (extra-European), the type species of *Hirneolina*, might possibly be a member of *Heterochaete* as defined by Bodman. Some species have been mentioned above in the discussion of *Eichleriella* (**28**).

The one European species mentioned on the check list is treated as such in agreement with remarks by Wells, but I am not convinced that it is congeneric with the type of the generic name, viz. *Heterochaete andina* Pat. & Lag. Compare also *Sebacina podlachica* (see p. 177) forma *heterochaetiformis* Bourd. & G. *1928:* 46.

(**42**). The published descriptions of *Heterochaete macrocheate* lack certain essential details; this prevents me from forming an own opinion about the probable taxonomic position of the species, in this case, for instance, whether it is really congeneric with

the type of the name *Heterochaete* or not. Bodman (*1952:* 220, 221) thought it highly probable that *H. macrochaete* should be included in *H. minuta* Pat. (described from Ecuador). Wells (*1962:* 367) suggested that *Sebacina strigosa* (see p. 177) may possibly be the same as *H. macrochaete*. The specimen of the former that he studied (an authentic specimen, in any case) in his opinion belongs to *Heterochaete*.

Myxarium

(**43**). During the last years the tremellaceous basidium known as sphaero-pedunculate has caught the attention of the taxonomist who is on the lookout for new characters to help him in making the classification of the tremellaceous fungi more natural. A basidium of this type originates as a 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 by a septum from the stalk-like portion. Each segment of the inflated portion produces a sterigma and a basidiospore. A recent study by Wells (*1964b*) has shown that in the North American *Exidia nucleata* (Schw.) Burt this stalk is devoid of nuclei. The septum separating the stalk develops without simultaneous formation of a clamp. In species with both clamp-formation and myxarioid sphaero-pedunculate basidia, therefore, the body that appears to be the mature basidium is not subtended by a clamp. It seems quite correct to regard the stalk-like portion as part of the finished basidium.

This type of sphaero-pedunculato basidia, viz. the one in which a constant stalk-like portion becomes separated by a wall from the acting globose metabasidial portion, really needs an extra qualification (for instance, 'myxarioid') to distinguish it from other more or less sphaero-pedunculate basidia in which no stalk-like enucleate portion is segregated. In this second type the stalk-like portion is usually variable in length, and never very long and slender, while it is often practically absent. Cytological details of this second type were published by Whelden (*1935a*) for *Sebacina globispora* (**71**).

Although it is often far from easy to establish the presence of myxarioid sphaero-pedunculate basidia, they have gradually been found to occur in several genera of Tremellaceae. It appears as though this may be of considerable taxonomic value, but it is not yet clear if the rather long series of species in which it occurs (or is thought to occur) must be divided into, or distributed over, one or several genera.

(**44**). A closely related problem is the question how far the limits of the genus *Myxarium* will have to be extended with regard to the other species with myxarioid sphaero-pedunculate basidia. Keeping as close as possible to the prevailing classification I would suggest the retention of *Heterochaetella*, *Stypella* (in a restricted, sense) and *Protodontia*. This leaves a number of minute, pustular species now classed indiscrimately in *Exidia*, *Tremella*, or *Sebacina* were they are certainly out of place, as well as some effused species that have been referred to *Sebacina* or *Exidiopsis*. The following key may be of help in surveying these groups rapidly.

1. Cystidia present and conspicuous, projecting considerably, cylindrical, thick-walled, blunt, the lumen widening in the top. Fruitbody effused. *Heterochaetella*
1. Cystidia lacking or thin-walled, may be present as gloeocystidia.
   2. Fruitbody either consisting of, or bearing, 'spines', which are tipped by axial elements that protrude to form a sterile tuft.
      3. Axial elements consisting of large gloeocystidia. *Stypella*
      3. Axial elements consisting of scarcely, or more or less, specialized hyphae, but not of gloeocystidia. *Protodontia*
   2. Fruitbody lacking sterile-tipped pustules or spines. Cystidia rare, thin-walled.
      4. Fruitbodies erumpent, rather large, pustular, becoming semiglobose, cushion-shaped, to appressed-flattened, easily reaching 10 mm or more in diam., not particularly densely crowded, although adjacent ones may coalesce. *Myxarium*
      4. Fruitbodies either effused (*Sebacina*-like) or originating as densely crowded very minute pustules which do not exceed 1(–2) mm in diam.
         5. Fruitbodies usually densely crowded, rarely scattered, minute pustules not over 1(–2) mm in diam., when densely crowded becoming confluent into reticulate or *Sebacina*-like masses, or retaining their individuality. Cystidia lacking.—Species listed in this paper as "incertae sedis" under *Tremella* ('Microtremella').
         5. Fruitbodies not originating as distinct minute pustules but effused from the first, may appear tubercular. Thin-walled cystidia in one species.—Species listed under *Sebacina*.

It is too early to go further. The precise occurrence of the myxarioid sphaero-pedunculate basidia in the Tremellaceae still awaits more thorough exploration. This applies also to the European species which are not yet as well known as could be desired. The introduction of the denomination 'Microtremella' must be seen as that of a term rather than a name: it makes it possible to designate a group of tremellaceous fungi of a certain particular habit but no more; it does not even imply that all its members are known to possess sphaero-pedunculate basidia.

If the septa were to be taken away from the mature sphaero-pedunculate tremellaceous basidium in its broadest sense the result would be a sphaero-pedunculate holobasidium that is closely similar to that of *Ceratobasidium* (same type of sterigmata) and *Tulasnella* (strongly inflated sterigmata). Time and again it is evident that the presence or absence of basidial septa is not necessarily very important, especially if these resupinate Tremellaceae are compared with certain of the 'Tulasnellaceae'.

(**45**). The first species with myxarioid sphaero-pedunculate basidia that served as type of an available generic name was the European *Exidia hyalina* (*E. gemmata*), which is so closely related to the North American *E. nucleata* that the two have been confused and for some time have been considered conspecific. Re-introduction of *Myxarium* as a genus distinct from *Exidia* would seem to be an improvement upon the present classification. This necessitates the following new name: **Myxarium hyalinum** (Pers.) Donk, *comb. nov.*; basionym, *Tremella hyalina* Pers., Mycol. europ. **1**: 105. 1822. The American species (*E. nucleata*) cannot be transferred with retention of its specific epithet because it would then be pre-occupied by an earlier homonym, *Myxarium nucleatum* Wallr., a synonym of *M. hyalinum*. It is incorrect to regard the name *Myxarium nucleatum* Wallr. as a recombination of the epithet of the American species, as was done by Neuhoff (*1936a:* 31), who stated that Wallroth was the first to identify the European

fungus with the North American *Tremella nucleata* Schw. This is not the case: Wallroth did not definitely include this species ("*M[yxarium] nucleatum* W. . . . Vegetabile paradoxa, forsan cum *Nematelia nucleata* Fr. syst. II. 228 comparandum") and his use of the epithet 'nucleatum' must be considered a coincidence. See further (**46**).

A few remarks on the sole European species and its synonyms—as far as they are based on European collections—are indicated. First, the use of the name *Tremella hyalina* Pers. as basionym. Bourdot & Galzin (*1928:* 33) already pointed out that the form lacking the hard inclusions answered to the description of the Persoonian species, and Neuhoff (*1936a:* 29) listed *T. hyalina* as synonym of *Exidia gemmata*, remarking (on pp. 31–32) that the denomination *T. hyalina* belongs "mit ziemlicher Sicherheit" to the present species. Persoon's protologue is brief, but after considering it carefully from various angles I am now convinced that it is impossible to reject it as a nomen dubium.

Bourdot & Galzin (*1928:* 67) interpreted Quélet's use of the name, as *Dacrymyces hyalinus* (Quélet, 1888: 17), as applying to a hyaline form of *Dacryomyces deliquescens* (Bull. per St-Am.) Duby (*D. caesius* Sommerf.). In view of Quélet's description (fruitbody 10 mm !) this is hardly correct; it may further be recalled that he also transferred *Tremella violacea* sensu Tul. to *Dacrymyces*. It is not doubtful that Quélet determined some of Bourdot's collections of a taxon of *Dacrymyces* with colourless fruitbodies as *D. hyalina*.

As to the typification of *Tremella gemmata* Lév., I herewith select as lectotype a collection from the neighbourhood of Paris. Although Léveillé described his species in connection with a Russian collection, he also remarked: "J'ai rencontré plusieurs fois cette espèce dans les environs de Paris." Such a specimen seems to exist in the herbarium in Paris, if I interpret correctly a remark by Lloyd [1922 (LMW 7): 1150].

As conceived by Bourdot & Galzin and Neuhoff, *Exidia gemmata* = *Myxarium hyalinum* is a species that varies considerably. The characteristic calcareous inclusions may be lacking (*Tremella hyalina* Pers.) and this may also be the case in a form with robust fruitbodies (cf. Bourdot & Galzin, *1928:* 33); the fruitbody may be globose-cushion-shaped (*Exidia alboglobosa* Lloyd); or the colour may vary between lilaceous pink and somewhat violaceous (*Tremella violacea* Pers. sensu L. Tul.). Elsewhere (**69**) it is explained why the names *Tremella violacea* Relh., Pers. cannot be listed as synonyms of *Myxarium hyalinum*. By those who do not share this conclusion, the name *Dacrymyces violaceus* (Pers. per S. F. Gray) Fr. must be taken as basionym for the correct name of *Myxarium hyalinum*, this having been published in the starting-point book.

Exidia corrugativa is another of Brefeld's species that is difficult to place. Neuhoff considered it to belong to *Exidia gemmata*. If this is correct then it is apparently a form without calcareous inclusions but with very strongly small-folded and groved fruitbodies.

(**46**). It is now customary to regard *Exidia gemmata* (= *Myxarium hyalinum*) and *E. nucleata* Schw. as distinct species. The former was described from Europe, the

latter from North America. Berkeley (1860: 290) thought that the two were not specifically different and for a long time his opinion was accepted. Compare also Burt [1921 (AMo 8): 371–372]: "I know *Exidia gemmata* of Europe only by the specimen received under this name from Bourdot; this specimen agrees in all respects with our *E. nucleata*." Bourdot & Galzin (*1928:* 33) accepted this verdict and replaced the denomination *E. gemmata* by *E. nucleata*.

Lloyd [1922 (LMW 7): 1149–1150], who (erroneously) called the European species *Naematelia globulus* Corda, separated the two again: "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 (*1936a*: 31) supported this view.

As to the spores: when combining the measurements taken from North American material as published by Coker, Burt, Neuhoff, and Martin one arrives at 7.4–11 × 3–5.5 μ, while for the European species Bourdot & Galzin record 8–12–18 × 3–4.5–7 μ, Neuhoff, (9–)11.5–13(–15) × (3.5–)4.5–5.5(–7) μ, and Reid & Austwick [1963 (GN 18): 330; as *E. nucleata*], 11–14(–15.5) × 4–5(–6.5) μ. It would seem that there is some overlapping. Martin (*1952a*: 81) thought that Neuhoff's illustrations of *E. gemmata* were very good for *E. nucleata* and that the microscopic differences cited fell well within the limits of variability of a single species. It is clear that the question is still in need of careful analysis.

Authors who wish to distinguish between the two and who at the same time are disposed to accept the genus *Myxarium* for them must establish the correct name for *E. nucleata*. It should perhaps be derived from *Tremella atrata* Peck, of which Bandoni (*1961:* 325) stated that: "The type specimen . . . appears to be a young collection of *E. nucleata*". The result would, however, be an inappropriate name.

Protodontia

(**47**). Here *Protodontia* is taken in a rather artificial sense in order to accommodate two species (briefly discussed below) that might not be congeneric with the typical species. The latter are supposed to have myxarioid sphaero-pedunculate basidia (**43**). One of the original (extra-European) species of *Stypella*, viz. *Stypella minor* A. Möll. (**72**), is here tentatively referred. The main difference between *Stypella* sensu stricto and typical *Protodontia* lies in the lack of conspicuous gloeocystidia in the latter (**44**).

(**48**). The original *Hydnum fasciculare* has been variously interpreted. Fries claimed to have found it and transferred it to *Mucronella*. His description is too brief to make it certain whether he had the same fungus as that later described by Bresadola (1920), whose interpretation is here accepted, even though it seems open to doubt. The species is apparently exceedingly rare; so far Bresadola's descriptions and illustration have remained the only extended account of the fungus.

There are two other interpretations: (a) *Hydnum fasciculare* sensu Bres. [1903 (Am 1): 90], as a species of *Mucronella* Fr. Later Bresadola [1920 (Am 18): 63] referred this conception to a "forma effuso-subfasciculata" of *Clavaria bresadolae* Quél. [1888: 458; Bres. 1892 F.t. 2: 40 *pl. 146 f. 2*; not ~ Cavara 1894, not *Hydnum bresadolae* Quél. apud Bres.], presumably the same species recently redescribed as *Hericium bresadolae* (Quél.) Malenç. [1958 (BmF 73): 321 *fs. 8, 8 bis*]. — (b) *Hydnum fasciculare* sensu Lloyd [1915 (LMW 4): 532 *f. 727*], a tropical species not yet recorded from Europe and hardly to be expected to occur on this continent. According to Corner it is identical with *Deflexula fascicularis* (Bres. & Pat.) Corner (1950: 395 *fs. 162, 163, pl. 11 f. 3*). — (c). Another, possible, interpretation is that it is a true species of *Mucronella*, perhaps a form of *M. aggregata* (Fr.) Fr., with fasciculate rather than merely gregarious 'teeth'. Neither the protologue nor Fries's redescription mentions the gelatinous consistency of the fruitbodies of Bresadola's tremellaceous fungus.

If *Protodontia fascicularis* (in Bresadola's second conception) will become better known it may appear that it is not closely related to the typical species of *Protodontia*. I have thought of transferring this species to *Holtermannia* Sacc. & Trav. and find that Kobayasi (*1937:* 77) had considered the same step. Not all species of that genus are branched coralloidly: *H. corniformis* Y. Kobay. from Japan, for instance, has unbranched fruitbodies to some extent suggestive of *Calocera cornea*. *Protodontia fascicularis* would then differ from this species in that its fruitbodies (teeth) are fasciculated, and from all other species of *Holtermannia* in that these are directed downward. The few published illustrations of *H. corniformis* give the impression that some fruitbodies may curve downward to a notable extend. The two are, however, beyond doubt specifically distinct.

(**49**). The original description of *Protodontia filicina* is not sufficiently detailed to make it possible to decide whether it really belongs to *Protodontia* or not. The minute fruitbodies (teeth) are not or exceptionally branched and depicted in such a manner as to suggest that they were directed upward. As in the case of the preceding species, the genus *Holtermannia* Sacc. & Trav. should be kept in mind when more detailed information on *P. filicina* becomes available.

Sebacina

(**50**). The re-classification of the species of *Sebacina* in a broad circumscription is one of the major tasks of the taxonomist dealing with Tremellales. European authors soon found grounds to exclude *Heterochaetella* and *Bourdotia*, both genera that later underwent division. *Heterochaetella* yielded a segregate that had previously been placed in *Stypella*, while *Bourdotia* was delivered of *Basidiodendron*. The first American authors were 'lumpers' (Burt; Rogers; McGuire, *1941*; Martin, *1952a:* 44) who nullified these improvements, except that they maintained *Stypella*. A younger generation of American authors, however, is now engaged in reclassifying

what remains of *Sebacina* following exclusion of *Heterochaetella*, *Bourdotia* and *Basidiodendron*, as well as the resurrection of *Stypella* (**57**).

Even without the above mentioned excluded genera, *Sebacina*, like most other large genera of resupinate hymenomycetes, remains artificial. This will not surprise those taxonomists who are inclined to expect these generic receptacles to contain 'reduced' (rather than 'primitive') species related to various groups with more elaborate fruitbodies. To disentangle such taxa is usually no easy matter; the kind of features on which the taxonomist has come to rely in classifying the 'higher' forms have for the most part 'disappeared' in the effused forms. In *Sebacina* he is sometimes left with nothing but a few spore-producing basidia and short stretches of hyphae from which these arise; this is the case with those species as are parasitic in the fruitbody of other hymenomycetes. Similar parasitic forms are also known for *Achroomyces* (*Platygloea arrhytidiae*), *Tremella* (*T. obscura*), and *Tulasnella* (*T. inclusa*). In the case of *Tremella* the only character that can be advanced to keep such species separate from *Sebacina* is the '*Tremella*-spore', while similar (nearly globose) spores occur in a few species of a rather broadly conceived genus *Sebacina* as well.

Dividing the remainder of *Sebacina* in two merely by emphasizing the presence (*Exidiopsis*) or absence (*Sebacina*) of clamps, as was done by Ervin (*1957*), resulted in multiplying the number of artificial genera. However, each of these series contains a more natural group around the type species of the generic names and Wells (*1962*) has tried to redefine the two genera, and to outline briefly those groups that he does not admit to the emended genus *Exidiopsis* (with clamps). However, in contrast to *Sebacina* in its reduced and new sense, his conception of *Exidiopsis* is in my opinion not quite satisfactory. One of the alterations proposed by Wells is the inclusion of the typical species of *Eichleriella* (**28**) in his conception of *Exidiopsis*. Those who wish to follow him will find that they are saddled with a small residue of clampless species and a considerable one of species possessing clamps, as well as with a rest hitherto included in *Eichleriella*, all without proper generic names to cover them. For a check list this is not very desirable; in view of the so far rather vague definition of *Exidiopsis* by Wells which is liable to become repeatedly modified in the near future, I have preferred to retain a more inclusive generic delimitation of *Sebacina*.

Wells placed the following species in the restricted genera (only European species mentioned):

Sebacina.—*S. caesia* (**51**), *S. epigaea*, *S. helvelloides*, *S. incrustans* (**54**).

Exidiopsis.—*Sebacina calcea* (**52**), *S. calospora*, *S. effusa* (**53**), *S. fugacissima*, *Exidiopsis glaira*, *Sebacina grisea* (**53**), *S. laccata*, *S. molybdea*, *S. plumbea* (**53**), and *S. umbrina* (**53**), and *Eichleriella alliciens* (syn., *E. incarnata*) and *E. leucophaea*.

Wells excluded from *Exidiopsis* the species with sphaero-pedunculate basidia (**43**) without accommodating them elsewhere. As far as is now known the following European species were thus involved: *Sebacina podlachica* and *S. sublilacina*. *Sebacina laccata*, however, was retained in *Exidiopsis*.

If Wells had known the rest of the European species, he certainly would have admitted some of them to his emendations of *Sebacina* or *Exidiopsis*.

(**51**). *Corticium caesium* Pers. 1796 O. 1: 15 *pl. 3 f. 6* (d.n.); *Thelephora caesia* (Pers.) Pers. 1801: 579 (d.n.) per Fr. 1821: 449. — This name has been taken up for very diverse species: viz. for forms or species of *Sebacina* and for certainly no less than four species of *Tomentella* Pat. (inclusive of *Tomentellastrum* Svrček). Persoon's protologue is in my opinion not sufficient to warrant a decision as to precisely what he had in mind. Without study of the type (which is not known to be in existence) this question seems insoluble: hence, *Corticium caesium* may be disposed of as a nomen dubium. The habitat was bare soil.

The question remains as to the identity of the interpretations that have been referred to '*Sebacina*' *caesia*.

(a). Sensu the Tulasnes.—"Fere tota byssina est et coloris cinereo-caesii, arenae inter muscos repens haeret et passim etiam in pulvinulos obtusos ac deformes incrassatos prominet; caeterum de basidiorum . . ., forma et crassitudine *Sebacinam incrustantem* prorsus imitatur; sporae paulo minores et contractiores pleraque videtur. . . . Habitu saltem et structura fertili congener praecedenti [*S. incrustans*] omnino est. . . ." As far as I am able to judge this may be no more than a mere form of *S. incrustans:* "fere tota byssina est"! Later authors have identified the interpretation of the Tulasnes with completely gelatinous forms or species closely related to *S. incrustans*.

(b). Sensu Patouillard.—Patouillard called his species *Sebacina caesia* "Tul. . . . (Non *Thelephora caesia* Pers. . . .)." By expressly excluding the basionym (type) he introduced a new name for a 'new' species: *Sebacina caesia* Pat., which he erroneously [?] ascribed to 'Tul.' His protologue describes the fruitbody as a "croûte . . . molle, céracée gélatineuse, non fibreuse, étalée, formée de tubercules petits, confluent . . .." This can hardly be the fungus the Tulasnes had in mind, but it may well be the same as *Sebacina laciniata* subsp. *S. caesia* "(Pers. . . .) Tul." of Bourdot & Galzin.

Pearson [1921 (TBS 7): 55] referred such forms to *Sebacina incrustans:* ". . . the coriaceous subiculum is sometimes well developed . . . . But careful observation will show that [these] forms, which are summer forms and often almost sterile, are replaced gradually in the autumn and winter by other forms where the coriaceous subiculum is reduced more and mote until it disappears. The plant is then spread over the soil or débris and entirely gelatinous-mucous. . . . The same plant turned pruinose and bluish by abundant sporulation constitutes *Sebacina caesia* Tul. . . ." These observations are perhaps not quite conclusive and need further confirmation. Until then *Sebacina caesia* may be retained as distinct, by way of reminder.

The typification of the name *Sebacina caesia* 'Pat.' poses a problem. Since Patouillard ascribed the name to the Tulasnes (who almost certainly described a different form, if not species) and since he excluded the basionym (published by Persoon), it might seem necessary to regard it as a new name for the fungus described by the Tulasnes. On the other hand Patouillard's description was drawn up from his own specimens and one of the latter should perhaps be selected as type.

(c). Sensu Christiansen.—Called "*Sebacina caesia* (Pers.) Tul." According to the

description the fruitbody is "widely effused, . . . thin, soft gelatinous, . . . in drying-up hardly visible." The description does not mention clamps, nor does the figure show them, but from the key to the species of *Sebacina* it can only be concluded that these organs were present, which would indicate that Christiansen's fungus does not belong to *Sebacina* emend. Wells, although by their size and shape the spores strongly suggest this group.

(**52**). American authors distinguish between *Sebacina calcea* = *Exidiopsis calcea* and *Sebacina macrospora* (Ell. & Ev.) Burt. ≡ *Exidiopsis macrospora* (Ell. & Ev.) Wells.[8] Recently Wells (*1962:* 352) reported the latter species from Europe (Denmark, Austria, France); moreover he thought that Malençon's description of *Sebacina calcea* from North Africa (Middle Atlas Mts., not France, as stated by Wells) suggested this same species. Wells examined no European collection that he thought proper to refer to *S. calcea*. According to him, "The margins [of the fruitbody] of *E. calcea* are abrupt at maturity, whereas the margins of *E. macrospora* are abrupt and frequently reflexed especially after the specimen has dried. In addition, the basidia and basidiospores of *E. macrospora* are distinctly smaller than those of *E. calcea*." For the present it seems premature to admit *S. macrospora* as a European species distinct from *S. calcea*. Boidin & Lanquetin [1965 (RM 30): 11] also expressed doubts about this.

(**53**). Of *Exidiopsis grisea* (= *Sebacina grisea*) Wells (1962: 341) made a very inclusive species by referring to it not only *Sebacina glauca* Pat. and *Exidiopsis plumbescens* (Burt) Wells, both based on extra-European material, but also the following: *Exidiopsis grisea* (Pers.) Bourd. & L. Maire; *Exidiopsis effusa* (Bref. ex Sacc.) A. Möll. [syn., *Sebacina uvida* sensu Bres.; *Sebacina quercina* (Vuill.) ex Maire]; *Exidiopsis peritricha* (Bourd. & G.) Sacc. & Trott.; *Sebacina plumbea* Bres. & Torr. apud Torrend (non Burt); and *Sebacina umbrina* D. P. Rog.

There has as yet been little occasion for European mycologists to form an independant opinion about the merits of this wholesale reduction. Oberwinkler, however, rejected it. Of the above-listed taxa he encountered three in the region (South Bavaria) he explored, and although he was fully aware of Well's conclusions he kept them as distinct species. My own knowledge of this group is rather restricted but as far as it goes it leads me to think that for the present it would be better to follow Bourdot & Galzin rather than Wells.

Bourdot & Galzin (*1928*) distinguished between *Sebacina plumbea*, *S. grisea*, and *S. uvida* (*S. effusa*), while they were no longer sure about the status of *S. peritricha*; they reduced it to the rank of a subspecies of *S. uvida* (*S. effusa*) ("... c'est plante arrive à se confondre avec *S. uvida* ..."). They did not know *Sebacina umbrina*.

As to *Exidiopsis plumbescens* based on a specimen growing "on blackened wood of

[8] For descriptions, see McGuire 1941 (Ll 4): 23 in obs. (*Eichleriella leveilliana*; misapplied); G. W. Mart. 1944 (SIa 18[3]): 48 *tpl. 2 f. 14*, *tpl. 4 f. 36*; 1952 (SIa 19[3]): 65 *tpl. 2 f. 14*, *tpl. 4 f. 36* (*Eichleriella macrospora*); Wells 1962 (M 53): 352 *f. 10* (*Exidiopsis macrospora*).

Populus trichocarpa" and found in the U.S.A. (Washington), I refrain from listing it in the present check list. The name was applied by Martin (see Christiansen, *1959:* 32; Lundell 1959 (LNF 53–54): 30 Nos. 2671, 2672) to European specimens that would otherwise have been referred to *E. grisea*, but apparently he conceived the species in a very broad sense. For a re-description, see McGuire 1941 (Ll 4): 25 *tpl. 3 fs. 50–53*.

Summarizing the above, I have replaced *Exidiopsis grisea* emend. Wells by *Sebacina grisea*, *S. effusa* (syn., *S. quercina*, *S. peritricha*), *S. umbrina*, and *S. plumbea* Bres. & Torr. (non Burt, which is *S. plumbescens*).

(**54**). *Sebacina incrustans* is an extremely variable species that in some of its expressions fails to answer to one of the main conditions of the genus *Sebacina*, viz. that it must have completely effused fruitbodies. The number of synonyms for it testifies to the difficulty of recognizing the species in all its guises. By also including *S. epigaea* some authors have conceived it in an even broader sense than that adopted in this check list.

The first volume of Fries's "Systema" (Jan. 1, 1821) lists the species twice, as *Thelephora incrustans* (Pers.) Pers. and as *T. cristata* (Pers.) per Fr., names for respectively the effused and encrusting form and the one with cristate processes. As far as I know the name first reduced to the synonymy of the other is *T. cristata*; Wallroth (1833: 566) used it for a variety of *T. incrustans*. On the basis of this information the latter name should serve as basionym for the correct name, which appear to be *Sebacina incrustans*.

The form with very strongly developed ascending processes with cristate tips was called *Clavaria laciniata* by Bulliard. This was not a new name but merely a misapplication of *C. laciniata* Schaeff., which is a synonym of *Clavulina cristata* (Holmskj. per Fr.) J. Schroet. Not until Schaeffer's fungus was definitely excluded was a new name with the epithet 'laciniata . . . (non Schaeff.)' created. I have not tried to find out who did so for the first time, but in any case, as far as I am aware I came across no author accepting 'laciniata Bull.' who at the same time expressly excluded the type (*Clavaria laciniata* Schaeff.).

This strongly *Clavulina*-like form that received the misapplied name *Sebacina laciniata* looks very different from the completely effused form of *S. incrustans*. It rather suggests some species of *Tremellodendron* Atk. (an extra-European genus) and it is tempting to accept a close connection between *Sebacina* and *Tremellodendron*; this is underlined by microscopical details. There is a constant difference between the two genera. Species of *Tremellodendron* do not vary into more or less effused forms; they are always stalked and clavarioid.

Still another form of *Sebacina incrustans* of *Clavulina*-like appearance occurs. This resembles *Clavulina rugosa* (Bull. per Fr.) J. Schroet. in having erect fruitbodies with blunt, instead of cristate, apices. Like Ade [1923 (ZP 2): 61] I have little doubt that *Clavaria rivalis* Britz. is such a form, although the spores as described in the protologue (16–18 × 8–10 μ) surpass in size the average of the spores in European

collections. I cannot accept its identification with *Tremellodendropsis tuberosum* (Grev.) D. A Crawf., with which Corner (1950: 192, sub *Aphelaria*) identified it. *Sebacina bresadolae* Lloyd also falls in this class; its author emphatically considered it to be "a form of incrustans", while Wells (*1962:* 359) thought that "the description and illustration presented by Lloyd indicate that the species should be referred to *Tremellodendron* Atk."

Sirobasidium

(**55**). This genus is known from outside Europe by a number of species found throughout the world. Some of these may also occur in Europe, which can boast only a single generally overlooked record (**56**). The other supposedly European species, *Sirobasidium cerasi* Bourd. & G., proved to bé an imperfect state of a non-basidiomycetous fungus.

This remarkable genus is characterized by its catenulate basidia, which ripen in basipetal succession, and its deciduous protosterigmata. The latter are more or less spindle-shaped and produce knobs or short tubes (secondary protosterigmata) tipped with spicula (cf. Bandoni, *1957b*, for *S. sanguineum* Lag. & Pat., with different terminology; cf. Donk. *1958a:* 102–103).

(**56**). Although the basidia in *Sirobasidium* are often cruciately septate like in other typically tremellaceous basidia, there is within the genus as a whole enormous variation: quite often only one septum is formed and that may be oblique to even more or less transversal. A species with such two-celled basidia served as the basis of *Sirobasidium* subgen. *Sirodidymia* Maire (lacking Latin description). This taxon was introduced to receive *S. brefeldianum* A. Möll. In the European collection (called *S. brefeldianum* f. *microsporum* Maire) the mature basidia are more elongate than usual and the single crosswall tends to be almost transversal. This may prove to be a distinct species.

Stypella

(**57**). This genus was introduced for two Brazilian species, *Stypella papillata* A. Möll. (lectotype) and *S. minor* A. Möll. From the descriptions it might be concluded that both are 'resupinate' (effused) species, but the accompanying figures show that the fruitbodies are composed rather of 'Papillen' (pustules), but with sterile tips, so that these can better be called teeth of spines, whose axes are occupied by either distinct gloeocystidia (*S. papillata*) or unbranched hyphae (*S. minor*). Both these kinds of elements protrude at the tip of the teeth. The presence of branched hyphidia (dendrohyphidia) was not indicated, but it may have been overlooked.

When discussing Möller's genus, Martin (*1934*) also tried to identify the two original species. I assume that his interpretation of *S. papillata* (the gloeocystidiate species) was correct and that its subsequent identification with *Heterochaetella*

crystallina (Bourd.) Bourd. & G. is also correct. As to the other species I do not accept Martin's interpretation (**72**).

To accept Martin's interpretation of *S. papillata* it would also be necessary to accept that the basidia of *Stypella* sensu stricto are sphaero-pedunculate (**43**). Moreover, it would be necessary to decide on the exact circumscription of the genus. In this case this amounts to deciding whether or not *S. papillata* should be combined with 'papillate' species lacking glococystidia but possessing sterile-tipped teeth (*S. minor*) and certain 'papillate' species that are not sterile-tipped, such as *Sebacina sphaerospora* Bourd. & G. (= *Stypella minor* sensu G. W. Mart.). As far as I can judge from Möller's account his *Stypella minor* is rather a member of *Protodontia* and in accordance with this view it is here tentatively excluded from *Stypella*. The species of the *Sebacina sphaerospora* group are placed on this check list as "incertae sedis" ('Microtremella') of *Tremella*.

Tremella

(**58**). Fries's conception of *Tremella albida* Huds., discussed elsewhere (**31**), was very inclusive. Except for the name-bringing component (now called *Exidia albida*) and his personal contribution to the complex (*E. cartilaginea*), he also included *Tremella cerebrina* var. *alba* Bull., which is doubtless a species of *Tremella* (**59**). Finally, he also listed *Tremella candida* Pers. as a synonym. This last species has since disappeared from the scene.

The original description of *T. candida* is very brief, but just sufficient, I believe, for forming an opinion about its identity. It is not a species of *Exidia*. To conceive it as a species of *Tremella* leaves only one possibility: *Tremella albida* Huds. sensu Bourdot & Galzin (*1928: 21 f. 13*); the protologue agrees most closely with small to average fruitbodies of that species; these are considerably smaller than the exceptionally large fruitbody depicted by the French authors at the top of their figure. This large example may have been included because it came closest in size and appearance to the white fruitbody depicted by Bulliard to represent his *T. cerebrina* var. *alba* (*pl. 386 f. A*); Bourdot & Galzin referred this with confidence to their conception of *T. albida*. In my opinion this is not tenable: this figure by Bulliard cannot depict anything else but a pale, practically white fruitbody of the same species as that to which figure B belongs: *T. cerebrina* as conceived in (**59**).

I have also compared Persoon's protologue of *T. candida* with that of *T. spicata* (differently shaped fruitbody), *T. indecorata*, and *T. hispanica*. It is patent that these do not fit in with his.

(**59**). *Tremella cerebrina* Bull. has dropped from circulation. Since its name was revalidated at a very early date, it is desirable to try to settle its correct application. Bulliard made it quite clear that it was a species with a large, thick fruitbody, compact within (not composed of distinct lobes connected only at the base), and with a strongly-gyrosely sulcate surface: "en tous points si semblable à de la Cervelle

qu'il n'est personne qui ne s'y lasseroit tromper." Bulliard admitted three varieties, white, yellow, and blackish. The substratum: old stumps.

Leaving out of consideration the blackish variety and assuming that the colour may be white (var. *alba*) or yellow (var. *lutea*), I can think of only one species that fits most of the requirements, viz. *Tremella frondosa* Fr. in the sense of Quélet and Bourdot & Galzin (*1928:* 19), particularly the not fully developed stage, which was described thus: "Subglobuleux, dur, cérébriforme, à plis épais de 1 cm et plus . . . crême citrin ou paille . . . . Sur souches et troncs de hêtres, chêne . . . ." Since there is strong doubt about the correctness of Bourdot & Galzin's application of the name *T. frondosa* Fr. (**64**), one might be tempted to apply the name *T. cerebrina* to their species.

It is obvious that Bulliard was very much struck by the likeness to brains. It is also obvious that the full-grown fruitbody of *T. frondosa* sensu Bourd. & G. loses this resemblance upon further development: "puis foliacé, haute et large de 5–12 cm à lobes . . . très larges, arrondis, ondulés . . . ." The two French authors perhaps thought of this stage when they cited for their species "Bull., *t. 499, f. T.*" ≡ *Tremella mesenteriformis* var. *livida* Bull. (1791 H.: 230). On the other hand since the fungus depicted by Bulliard was neither white nor yellow it is not unlikely that the citation was an error and merely copied from Fries (**64**).

Tremella cerebrina var. *alba* and var. *lutea* are depicted so much alike that they cannot be distinguished except by their colour; the conclusion is justified that there is in reality no appreciable difference between the two. The selection of either as type would not prevent the application of the name suggested above. 'Var. *alba*' (Bulliard, *pl. 386 f. A*) is stated to be the most common form; the colour most closely resembles brains; judging only from the protologue one would be inclined to consider this figure A as 'type'. The first author to take up the name after the starting-point date was, as far as my knowledge goes, Saint-Amans (1821: 536), who stated in his regional flora that he had found only the third form ("d'abord brun, puis noire"); however, he did not exclude the other two forms. Then followed Mérat (1821: 28), who merely compiled Bulliard's species. Toward the end of the same year Purton (1821: 176) reported the species from England. He gave as the specific character: "sessile, clustered, convoluted; dilute yellow to orange colour; fleshy within", and added the remark, "This is certainly distinct from *T. mesenterica* . . . . It is much firmer and less gelly-like than the *mesenterica*." By his phrase and the citation "*Tremella cerebrina* Bull. t. 386. B ! !" he may have wished to indicate that his collection resembled only 'var. *lutea*' rather than to deliberately exclude the other varieties from the specific conception. Independently of the answer to the question whether Purton applied the name *T. cerebrina* Bull. correctly or not, I, herewith, select as type the fruitbody depicted by Bulliard in his figure B. As to his third variety ('var. *nigra*'), it would seem prudent not to offer any opinion; the problem is completely irrelevant to the present discussion.

Fries (1822: 215) listed 'var. *alba*' as part of his conception of *Tremella albida* Huds. (= *Exidia albida*) (**31**). This suggestion is unacceptable. 'Var. *lutea*' was not men-

tioned. Bourdot & Galzin (*1928:* 21) cited 'var. *alba*' (Bull., *pl. 386 f. A*), with an exclamation-point, as pertaining to their conception of *T. albida* Huds., which is a species of *Tremella*. In (**58**) I have mentioned my reasons for disagreeing with this conclusion.

(**60**). The genus *Naematelia* consisted in the main of two unrelated groups, one with *Tremella*-like spores (*Naematelia* sensu stricto), and one with *Exidia*-like spores; the latter has been transferred to *Exidia* and on this check list is included in *Myxarium*. The restricted genus has often been regarded as not worthy of segregation from *Tremella*. It is characterized by the context of the fruitbody: firm, whitish, not transparent within and surrounded by a gelatinous, typically tremellaceous layer. Some years ago Bandoni (*1961:* 321) came to the conclusion that the firm kernel represented aborted fruitbodies of species of *Stereum* (narrow sense) and that these were parasitized by *Tremella*. The peculiar context was the reason for instituting the genus, as is also expressed by the generic name [meaning approximately 'wrapped in a (gelatinous) liquid']; it therefore follows that if the dual nature of the fruitbody is accepted *Naematelia* must be considered impriorable as a nomen confusum. This point of view I regard as correct.

(**61**). The type species of the name *Naematelia* is *Tremella encephaliformis* Willd. ≡ *Tremella encephala* Pers. ≡ *Naematelia encephala* (Pers. per Pers.) Fr. As explained in the preceding Note, the generic name *Naematelia* must be rejected because it is a nomen confusum. Is the dual nature of this species sufficiently strongly emphasized in the protologue to reject also the specific name for the same reason? I have not pursued this question further principally because the issue of what in that case should be the correct name is neither nomenclatively nor taxonomically easily solved. When Bandoni established the dual nature of *T. encephala* he simply restricted the use of this name to the *Tremella* component. This use is here followed.

In an attempt to reassess the limits of *T. encephala* it is useful to consider the following possibilities: (i) that the *Tremella* 'component' might occur in nature also non-parasitically as well, and (ii) that, as a parasite, it might not be restricted to *Stereum sanguinolentum*, and perhaps, also grows on other species of *Stereum*. It has not yet been possible to identify any 'free-living' species of *Tremella* with the parasite. As far as I am aware, *Tremella encephala* is, in Europe at least, restricted to coniferous hosts, which would indicate that it is restricted to fruitbodies of *S. sanguinolentum*. In North America and Japan species of '*Naematelia*' have also been recorded from frondose trees where the tremellaceous component was associated with other species of *Stereum*.

This narrow, but not necessarily correct, conception of *T. encephala* is the reason that I have omitted from the synonymy all names of species of '*Naematelia*' recorded from frondose wood. These names are *Sparassis tremelloides* Berk. 1873 (U.S.A., South Carolina); *Naematelia cerebriformis* J. B. Ell. apud Peck (U.S.A., New York) type on *Carpinus*, "does not seem distinct from *T. encephala*"—Bandoni (*1961:* 323);

and *Naematelia quercina* Coker 1920 (U.S.A., North Carolina), *fide* Bandoni (op. cit., p. 325) = *Sparassis tremelloides*. The following remark by Bandoni (op. cit., p. 326) on *Sparassis tremelloides* ≡ *Tremella tremelloides* (Berk.) Mass. should be kept in mind; this species, he wrote, "does not seem to differ significantly from *Tremella encephala* in its microscopic characteristics. It is possible that the two represent different manifestations from two different hosts [*Stereum* spp.]."

(**62**). In some respects *Tremella encephala* is even more variable than other species of the genus, for instance, as to colour, there are at least three principal shades. First, hyaline-whitish, the white colour being mainly due to the white kernel that shows through. It was this condition, I believe, that received the name *Tremella alabastrina*.

A delicate flesh colour is very common. Neuhoff (*1936b:* 23) has suggested that *Tremella fragiformis* Pers. (which Persoon called 'ruber') was annotated by its German collector as stawberry (fraise) coloured and that Persoon misunderstood the information: "in der deutschen Tuchindustrie bedeutet fräsfarben ein milchiges Fleischrosa, das dem Farbton der *T. encephala* vollkommen entspricht." It may be pointed out that when Persoon published a coloured picture of his species he stated in the French version of the text: "sa couleur à l'extérieur est semblable à celle de la fraise; intérieurement elle est pâle." However, the accompanying figure shows the fruitbody as dingy pink rather than red.

Older collections, especially such as are received from correspondents, have often lost the above-mentioned original colours and have turned more or less dingy brown or alutaceous (cf. Fries, 1822: 227 "in vegetis semper carneo-pallidus, siccus rufofuscus").

Finally, yellowish fruitbodies have also been encountered, for instance in the one collection that Bourdot & Galzin referred to their interpretation of *T. rubiformis*, for which they recorded the colour as pale yellow. For typical *T. encephala* these authors also noted, "souvent teinté de crême orangé". This may explain why Link changed the name *Tremella encephala* Pers. into *Encephalium aurantiacum* when transferring that species to his new genus *Encephalium* (a synonym of *Naematelia*).

It may well be that much of the diversity in colour is due to the host species. *Stereum sanguinolentum* is one of the 'bleeding' stereums, and soluble substances that may undergo colour changes perhaps diffuse into the parasite.

It is just possible that *T. alabastrina* is a different species. Brefelds protologue is not quite sufficiently detailed to be decisive; he does not mention the kernel.

(**63**). *Tremella foliacea.*—Persoon's protologue (1799 O. 2: 98) contains some enigmas. On the whole it might be concluded that he was describing not too large specimens of what is now called *T. foliacea:* "Unc. 1½ lata, totidem fere alta, lin. 1 crassa". As a sort of afterthought he added as last words "forma pezizoidea", which suggests some species of *Exidia*, or perhaps even of *Coryne* Tul. (perfect state), or still more of *Neobulgaria foliacea* (Bres.) Dennis, not for the least part because of

a remark by Bresadola in connection with the original description of this last mentioned species: "Habitus omnio *Tremellae foliaceae* Pers., a qua tantum observatione microscopica tute distinquitur." If the true *Tremella foliacea* were really pezizoid in shape, it could hardly be anything but either *Exidia saccharina* or *Neobulgaria foliacea*. Identification with the first of these two is out of the question because of differences in colour and substratum: *E. saccharina* grows only on coniferous wood, while Persoon stated of *Tremella foliacea:* "ad truncos subputridos, praesentim *Coryli Avellanae*". The description that Persoon published in his succeeding mycological work (1801: 626) treated the fruitbody as compound ("magna cespitosa .... Singulum individuum unc. 1 latum est") and again called it "... concava .... Subpezizoidea"; however he added "... sed utroque latere fructificat." These last words, as well as the citation of "Bull. ... t. 406 f. A. a ?", turn the scale in favour of a true *Tremella* rather than some species of *Exidia* or *Neobulgaria*, for in these genera there is often an appreciable difference between the sterile outside and the hymenial disk. Fries simply left out any allusion to a pezizoid shape. I am more inclined to agree with him and Neuhoff (*1933:* 98) that what Persoon had in mind was after all the species of *Tremella* redescribed by Fries and Bresadola.

After this it is not surprising that some authors (Brefeld) confused *Tremella foliacea* with *Exidia saccharina*.

When Fries (1822: 212) accepted Persoon's species, not only did he leave out all allusions to a pezizoid form but he also shifted the emphasis somewhat (but not quite) toward the form of *T. foliacea* on conifers; although his phrase describes the colour exactly the same as Persoon's did ("cinnamomeo-carnea") his description contains, "Color constanter obscure rufus" and "Ad truncos vetustos abiegnos, pineos, betulinos, &c." When Bresadola (1900 F.t. 2: 97 *pl. 209 f. 1*) published the first modern account under the name of *T. foliacea* he conceived it inclusively as far as the colour and substratum were concerned: "ad ramos *Laricis*, *Abietis* et etiam arboreum frondosarum gregario obvia".

Most authors now consider *T. foliacea* a very variable species, especially with respect to the colour of the fruitbody. According to some authors it includes a few infraspecific taxa. It would appear desirable to collect more information on fresh collections from various substrata. The following discussions on the forms that have received specific and available names may prove to be of some use.

Tremella fimbriata.—Establishing the identity of this fungus turned out to be another puzzle. Neuhoff (*1936b:* 20) suspected that this species, as interpreted by Fries (1822: 212), was the form of *T. foliacea* from angiosperm wood. Fries would have made the distinction, because to him *T. foliacea* (see above) was in the first place the form on gymnosperm wood. The choice of the epithet 'fimbriata' is difficult to understand. Persoon's original description (1799 O. 2: 97) contains "latera incisa, margine undulata" and thus leaves the epithet insufficiently explained; Fries wrote "margine incisis undulato-fimbriatis" which can only be true if one accepts a very lenient interpretation of 'fimbriatus'. Still I believe that Neuhoff's

suggestion is perfectly acceptable as long as an extremely plastic form on angiosperm wood is postulated and, in these particular cases, an excessively moist habitat on branches on the ground: "Ad ramos rarissime ad terram dejectos" (Persoon, l.c., 1799), "in ramis deiectis ad marginam fluviorum rarius . . ." (Persoon, 1801), "Ad truncos & ramos, praecipue alneos, locis humidis passim" (Fries, 1821). This would also explain why the fruitbody is (sub)erect.

Fries distinguished between two forms of *T. fimbriata*, the typical one and a form "b": "Color nigrescens, luci obversus olivaceus v. fuligineus, in b. purpurascens." However, his references are not distributed accordingly, *T. mesenteriformis* var. *violacea* Bull. and *T. tinctoria* being cited with the typical form even though the fruitbodies are vinaceous.

Tremella verticalis.—Fries referred Bulliard's species as "optime" to *T. fimbriata*, typical form. The erect habit ('verticalis') and the strongly and irregularly incised margins of the lobes agree; the substratum is indicated as "sur les vieilles souches". Bulliard himself (1791 H: 231–232) later referred this fungus to *T. mesenteriformis* var. *violacea* Bull., which suggests that it was slightly violaceous. In any case it seems to be conspecific with *T. fimbriata* and perhaps also with the purplish forms Fries referred to that species; these had previously received specific names of their own (*T. undulata*, *T. violacea*, *T. tinctoria*).

Tremella undulata.—Neuhoff (*1936b:* 20) wrote: "Eine purpurviolette Form der *T. foliacea* Bres. gibt es nicht; der Name *violascens* Alb. & Schw. bezieht sich auch keineswegs auf eine *Tremella*, sondern auf eine Bulgariacee aus der Gegend von *Coryne*." Although I agree about the identity of *Tremella foliacea* var. *violascens* A. & S. [presumably the common imperfect state, now called *Pirobasidium sarcoides* (Fr.) Höhn.], I do not agree with the remark that no purplish-violaceous forms may exist. *Tremella undulata* is a point in case; Hoffmann described his species as "purpurea" and added: "colore adparet haec *Tremella* nigrescenti quidem, sed subdiaphana est et luci objecta purpurascens." Similar and apparently conspecific is *T. mesenteriformis* var. *violacea* Bull. ≡ *T. violacea* (Bull.) Pers. ≡ *T. tinctoria* Pers. It was to this form that Bulliard later reduced his *T. verticalis* (see above). The colours of his variety he described thus: ". . . dans la jeunesse d'une couleur vineuse mêlée d'une teinte de violet plus ou moins foncée; elles devient ensuite d'un rouge brun ou noirâtre . . .; mise en infusion dans de l'eau simple, elle donne une couleur d'un beau bistre rougeâtre . . ." This last point led Persoon to call it *T. tinctoria*.

Tremella succinea.—Apparently a rather pale-coloured form ("pellucida . . . fuscescente succina") stated in the protologue to be "rarius ad ligna exsiccata". Neuhoff considered this to be the form typical of gymnosperm wood. This is doubtful; of neither *T. succinea* itself nor *Tremella mesenteriformis* Bull. (*pl. 499* [*f. T*]), which Persoon referred to his species, do we know the exact nature of the substratum. Moreover, the form Neuhoff (*1931:* 73) had in mind was "rotbraun", darker, with at least part of the basidia having brown contents. Persoon's own fungus was rather

small ("magnitudine unciali"), but Bulliard's figure shows a large fruitbody, perhaps about 12 cm wide. The identity of Persoon's fungus is still doubtful.

Phaeotremella pseudofoliacea.—As the specific epithet indicates, Rea thought that his species resembled *Tremella foliacea*, but he considered the umber spores so important a feature that he even published a new genus to receive it. The text of the protologue is succint; it is not certain that a spore print was made. The spores are rather large for *T. foliacea* (12 × 9–12 μ). Moreover, Rea reported conidia ("hyalina, elliptica, 9 × 6 μ"); these, too, are too large to be hymenial conidia. Prompted by these indications, I hesitatingly suggest that Rea confused young basidia with the basidiospores and called the basidiospores conidia. It is a well known fact that in some dark forms of *T. foliacea* the basidia have quite distinctly brown coloured contents, a feature emphasized by Neuhoff (*1931:* 73) for his conception of *T. foliacea* var. *succinea* "Pers." It would not be surprising if occasionally the contents of the spores were also tinted brownish.

(**64**). Fries described *Tremella frondosa* as a member of *Tremella* trib. *Mesenteriformes*, characterized by cespitose fruitbodies "in plures lobos tenues flexuosos flaccidos partitae", and as three times as large as *T. foliacea*, from which species it was further distinguished by its substratum (oak trunks) and colour ("luteo-pallescens"). This no longer amounts to a satisfactory differential characterization, since *T. foliacea* may occur in very large and pale-coloured fruitbodies and it has also been reported from oak trunks. What is left is the colour and in this respect the hinge is "pallescens". Did Fries use the word in the strict sense (becoming paler: viz., fruitbody pale but 'pure' yellow) or does it stand for 'pale-coloured' (viz. fruitbody of some pale colour with yellowish shade)? Many authors have supported the second view, like, for instance, the Tulasnes (*1872:* 220): "Les beaux groupes de *Tremella frondosa* vivant . . . sur le tronc desséché d'un Chêne . . . ne mesuraient pas moins de 15 à 20 centimètres en diamètre; ils étaient d'un couleur de chair très-pâle, tirant sur le jaunâtre . . ." The correctness of the Tulasnes' interpretation might be defended by pointing out that Fries cited for his species "Bull. . . . t. 499 f. T" = *Tremella mesenteriformis* var. *livida* Bull. (1791 H.: 230), which is precisely one of these large, pale forms, "primâ aetate sordidè albescens dein dilutè carnea . . ." If this interpretation were correct then *T. frondosa* might well be referred to *T. foliacea* as one of the many forms of the latter species.

On the other hand if the colour of *T. frondosa* in its original sense were yellow, and paling (bleaching) with arge, than it might well be a species recalling in colour the *T. mesenterica* group. Evidently this was how Quélet and Bourdot & Galzin interpreted the colour when they applied the name *T. frondosa*. If the existence of a pure yellow *T. frondosa* is accepted, two questions arise: (i) does such a fungus occur in Sweden, and (ii) is it conspecific with *T. cerebrina* (**59**)?

In search of an answer to question (i) I have come across only one solitary modern record (rather than a re-description). Neuhoff (*1936b:* 22) listed a collection from Femsjö for *T. frondosa* as a member of the "Gesamtart *T. mesenterica* Retz." and

characterized it as a "blassgelbe, grosse Art". No notes were added about the colour in the fresh condition.[9]

As to question (ii) I am not at all convinced that Fries's protologue warrants the identification of the Swedish fungus he called *T. frondosa* with the species Bourdot & Galzin described under the same name from France. Fries's fungus was said to be cespitose and divided into lobes connected at their base only, like in *T. foliacea*, while the French fruitbodies seem to start as a compact, gyrosely-sulcate, cerebriform cushion that grows out into lobes at a later stage.

It would seem that our knowledge of *T. frondosa* sensu stricto is still too incomplete for a well-founded opinion about its true status. Meanwhile *T. frondosa* is treated here as a distinct though little-known species. If it were to be demonstrated that it is to be fused with Bourdot & Galzin's interpretation, then the combination must be called *T. frondosa*.

Should the conclusion be drawn that *T. frondosa* and *T. foliacea* are expressions of a single species, then the correct name for the combination is *T. foliacea*; this is the oldest of the priorable names among those that were accepted by Fries in the starting-point book (revalidated by S. F. Gray in 1821), the other being *T. fimbriata* (revalidated by Persoon in 1822). *Tremella frondosa* was validly published at a later date. Moreover, if my notes go far enough, *T. fimbriata* was first reduced to the synonymy of one of the other names by Lundell [1941 (LNF 19–20): 16], who made the combination *Tremella foliacea* var. *fimbriata*. Neuhoff (*1936b:* 20) had previously suggested the reduction of *T. foliacea* to the rank of a variety of *T. fimbriata* but since this move was only a provisional suggestion it is here left out of consideration. Looney (*1933:* 24) accepted a broadly conceived species which she called *T. frondosa* instead of *T. foliacea* (apparently because of page priority in the "Systema"), but it is also evident that she did not definitely reduce *T. foliacea* to the synonymy of *T. frondosa*.

In addition to 'Bull. pl. 499 f. T' (discussed above) Fries also cited *Tremella quercina* Pollini, "non obstant". On the basis of this citation Saccardo later dropped the name *T. frondosa* and replaced it by the earlier-published (but now devalidated) name *T. quercina*. It is out of the question that Pollini's fungus has anything to do with *T. frondosa*; the protologue, as well as the figure from the following year, are very poor but, in my opinion, sufficient for referring the fungus to *T. mesenterica*.

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[9] Neuhoff (*1933*: 99) once elaborated on the difference in colour between *T. frondosa* and *T. foliacea*: "Man denke sich *T. frondosa* Fr. von blassgelber Farbe (etwa von sahnefarbig = cremeus Saccardo, Chromotaxia Nr. 27 bis hellstrohfarben = stramineus Saccardo Nr. 26), dagegen *T. foliacea* Pers. in durchscheinendem Rot- oder Gelbbraun mit leichter fleischrötlicher oder violetter Farbbeimischung (. . . an entfärbten Lappenenden auch melleus Nr. 30)." Nevertheless, he seems to have had his difficulties in distinguishing between the two since he illustrated *T. frondosa* by a line drawing of a fruitbody (divided into lobes to the very base) which could have been expected to be pale yellow. Apparently this was not the case, since the same fruitbody was later on depicted on the coloured plate published under the name of *T. foliacea* (*1936a*: *Ft. 9*, description not published) with a quite different colour, typical of rather pale, large fruitbodies of *T. foliacea*.

(**65**). One of the many puzzles the mycologist encounters with regard to the genus *Tremella* is the identity of *T. intumescens*. The protologue consists of a coloured plate and a—for that time—rather full description, though without details of the spores. Fries did not know the species from personal collections, but he had apparently no misgivings as to its correct position and retained it in *Tremella*. Quélet [1872 (MMb II 5): 315] recorded the species for France; he kept it in *Tremella*, but never mentioned the shape of the spores.

The first author to interpret the species as belonging to *Exidia* was Bonorden [1868 (AbH 8): 120]. Under the name *Tremella intumescens* he published a fairly full description which shows that he had *Exidia plana* in mind. The next author, Britzelmayr [1887 (BAg 29): 291 & *pl. 755f. 6*], apparently independently, called another species of *Exidia*[10] by the same name. It is difficult to decide what Karsten [1889 (BFi 48): 450] had in mind; the only description he gave was of the basidia and spores. The latter are undoubtedly *Exidia*-spores ("Sporerna aflånga, bödja, 13 = 4 mmm."). Rea (1922: 734) followed Karsten. However, although indicating that he had seen live specimens, his description contains no significant personal contribution; it is compiled almost exclusively from the protologue supplemented with Karsten's description of the spores. Finally, attention may be drawn to what Bourdot & Galzin ((*1928:* 31) called *Exidia glandulosa* f. *intumescens* ("formé de tubercules arrondis, pressés et confluent botryoïdes").

Neuhoff (*1935:* 33) expressed his opinion as follows: "Im ursprüngliche Sinne ist *Tremella intumescens* bei Smith and Sowerby ... ganz ohne Zweifel dasselbe wie *Exidia glandulosa* Fr." (spacing as in the original). I beg to disagree. Nothing in the protologue, except perhaps the colour, suggests a species of *Exidia*. The figure shows fruitbodies of the 'Mesenteriformes' type with rather thick folds (lobes) which are obtusely rounded at the edges. The dots of the "obscurely dotted" surface are spots rather than papillae, as may be seen from the details figured. There is no doubt in my mind that *T. intumescens* is a species of *Tremella*.

Bourdot & Galzin's description (*1928:* 20), published under the name *T. nigrescens*, drawn up from British material communicated to Bourdot by Pearson, strongly suggests that they were actually dealing with *T. intumescens*. Whether the species is the same as the original *T. nigrescens* or not, and whether or not the latter should be reduced to the rank of a mere form of *T. foliacea*, as was done by Neuhoff, are subjects particularly recommended for future observations.

In anticipation of the results of such observations and in view of the comment Fries added to his species ("Statura sequentium [*T. foliacea*, *T. lutescens*], sed lobi crassiores. Quoad colorem refert *Exidiam glandulosam*") I have reduced *T. nigricans* to the synonymy of *T. intumescens*. This is exactly the impression the study of the protologue of *T. intumescens* invokes!

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[10] Referred to *Exidia recisa* by Neuhoff (*1935:* 8) and to *E. truncata* (=*E. glandulosa* sensu stricto) by Ade [1923 (ZP 2): 63].

(**66**). A further difficulty is the question whether *T. lutescens* and *T. mesenterica* are conspecific or not. The two names have, for instance, been loosely applied by Brefeld (*1888a:* 109); what he called *T. lutescens* is typical *T. mesenterica* and apparently not specifically distinct from what he treated as *T. mesenterica*. Typical *T. mesenterica* is one of the few European species of *Tremella* that produces abundant minute and globular hymenial conidia. At present many mycologists would perhaps be inclined to follow Looney (*1933:* 26–31) in thinking that only one species is involved. It looks as though Neuhoff (*1936b:* 22) caught at a straw when he formulated his last-published opinion about *T. lutescens:* "Ich stelle hierher nur diejenige Stücke, die stets klein, blassgelb und ohne Konidien sind." Bjørnekaer (*1944:* 25, 33), after observations in the field, concluded that *T. mesenterica* was the winter stage and *T. lutescens* the summer stage of the same fungus. The difficulty in a case like this is that it is not always easy to establish precisely what was understood by *T. lutescens*.

Bourdot & Galzin (*1928:* 20) placed what they called *T. lutescens* among the 'Mesenteriformes' as a fungus with very soft, subliquescent and pale fruitbodies ("sulfurin ou crême citrin très pale, près que hyalin par les temps très humides"). In view of the habitat ("Assez commun sur branches de charme, souvent associé à *Radulum laetum* [= *Peniophora laeta*]") and the spores, which are larger than those of *T. mesenterica*, a species which they placed among the 'Cerebriformes', theirs may be a distinct taxon. For *T. mesenterica* they mentioned hymenial conidia. Bourdot & Galzin's description agrees closely with Persoon's, except for the substratum, which is given as *Fagus* branches in the protologue.

When Looney concluded that the two species could not be distinguished she maintained the name *T. lutescens* for the combination on the ground of page priority in Fries's "Systema". The Code does not recognize this principle and requires that the oldest legitimate name be retained. Luckily this is *T. mesenterica*.

(**67**). The protologue of *T. moriformis* describes this species as "sessile, . . . in roundish or oblong masses of various sizes, not unlike mulberries in appearance, except being coal-black. Internally however they are of a rich deep purple hue. . . ." The accompanying figure shows the fruitbodies as semiglobular to oblong bodies and broadly appressed to the substratum, with the exposed surface thrown into close gyrose folds. The comparison with mulberries was suggested by the general shape and colour, and evidently did not imply that a fruitbody is composed of an agglomeration of globular part-bodies. Fries, when compiling the species, translated 'clustered' (meaning in this case, gregarious) by 'conglobatus'. It is not surprising that when a species of *Tremella* was found with a fruitbody that "représente une petite mûre des bois par la forme et la couleur" (Quélet), it was promptly identified with *T. moriformis*. This interpretation was followed by Bourdot & Galzin, who had to search for another name to describe what was apparently the true *T. moriformis*. This they did under the name of *T. violacea* (**69**).

This course of events has left the blackberry-like form without a name, if it is really different from typical *T. moriformis*. The two synonyms attributed to *T.*

moriformis, viz. *T. colorata* Peck and *T. atroglobosa* Lloyd, *fide* Bandoni [1959 (Ll 21): 148], would seem to represent the original fungus rather than that of Quélet.

In both forms the contents of the basidia are purplish, which is unknown in any other species of *Tremella*. Some published accounts indicate that the context of the fruitbody is not homogeneous (even if Favre's inconclusive notes are ignored).

(**68**). *Tremella obscura* is an internal parasite growing in the fruitbody of species of *Dacrymyces*; in Europe *D. deliquescens* (= *D. stillatus*) has been reported as the host. The present note is intended to draw attention to a paper by Dangeard (*1895*) in which he described the occurrence of a tremellaceous fungus in the fruitbody of *D. deliquescens*. He had not been able to find the spores. Was this perhaps *T. obscura?*

(**69**). When the binomial name *Tremella violacea* Relh. was published its author referred back to "Raii. Syn. 22. n. 4" and Ray, in turn, referred back to "C. Giss. 194". It may be useful to those who wish to form their own opinion about the identity of *T. violacea* sensu originario to quote these older authors.

Dillenius, Cat. Pl. Giss. 194. 1719: "*Agaricus mesentericus violacei coloris*. Super antiquos Carpini truncos". Type locality: Germany, Giessen.

Ray, Syn. meth. Stirp. brit., Ed. 3, 22. 1724: "4. *Agaricus mesentericus violacei coloris* C. Giss. 194. *Fungus arboreus purpureus corrugatus* Doody Syn. II App. 336. / (Substantia est inter gelatinosam & coriaceam media, varie sinuosus & rugosus, inferne laevis & plana superficie lignis & stipitibus putrescentibus innascens: color violaceus obscurior: odor non ingratus, ad Merulium Fungum accedens.)"

Relhan, Fl. cantabr. 442. 1785: "899. *violacea*. / Tremella sessilis, gelatinosa, rugosa, violacea, inferne laevis. Raii. Syn. 22. n. 4. / Violet Tremella. / On the decayed branches of Trees. A. I–XII. / Tartaro vini rubri perquam similis."

It will not be easy to prove satisfactorily precisely what fungus Dillenius had in mind. His description is too brief. *Auricularia mesenterica*, rather than *Pirobasidium sarcoides* (Fr.) Höhn., the imperfect state of *Coryne sarcoides* (Jacq. per Pers.) Tul., comes automatically to mind, but this is only guessing. Somehow, the impression that *Auricularia mesenterica* is involved is strengthened by Ray's more detailed description which I take to have been drawn up from that species. Also Relhan's description does not invoke a species of the modern genus *Tremella* but rather some pileate species ("sessilis . . . inferne laevis"). It is significant that in the supplement to his "Flora" Relhan (1786: 32) concluded that *T. violacea* had better be associated with *Helvella*, at that time a very inclusive genus comprizing *inter alia* the later genus *Thelephora*.

The name entered a new life cycle when Persoon (1801: 623) published a *Tremella violacea* with a new description. He cited *T. violacea* Relh. as "hujus quoque loci", in this way perhaps making it clear that he did not actually revive Relhan's name but rather introduced a new species. When Fries (1822: 229, 606) published *Dacrymyces violaceus*, he ascribed the epithet to Relhan, but it was Persoon's species he had in mind. Compare the phrases: "subcompressa parva compacta gyrosa

violacea" (Persoon) with "minor [quam *D. moriformis*], compactus, subcompressus, gyrosus, violaceus" (Fries). Persoon gave as substratum "ad caudices *Pyri communis*", Fries added "*Mali*". It is this Persoonian species that mycologists have tried to interpret. If Fries's species is really a *Tremella* it must be rare; at least no modern report based on a Swedish collection has come to my knowledge. According to Neuhoff (*1936a:* 32) a collection sent to Persoon under the name of *Tremella violacea* by Delastre from Vienne, France (not "Wien") belongs to *Coryne sarcoides*.

Two interpretations of the Persoonian-Friesian fungus have been published. The first one goes back to E. L. Tulasne who ascribed to it sausage-shaped spores. Neuhoff reduced it to a form of *Exidia gemmata* (= *Myxarium hyalinum*) (**45**), the colour of which he described as "anfangs hyalin-grauweiss, später weisslich, zartrosa, lila-rosa, rosagrau, blassviolett oder schmutzigviolett", giving the substratum as "besonders auf Rosaceen . . ." This form not only has a distinct colour but presumably it also consistently lacks the calcareous concretions of typical *Myxarium hyalinum*. It may be more than a mere form.

The other interpretation is from Bourdot & Galzin (*1928:* 23); they described as *T. violacea* a form that, judging from descriptions, agrees more closely with the original *T. moriformis* than the fungus they described under the latter name (**67**). It was found on branches of *Platanus*.

In view of the inadequacy of the descriptions by Persoon and Fries I share Neuhoff's opinion (*1936a:* 29) that apparently it is not certain whether the species described by Tulasne is the same. I am not convinced either that Bourdot & Galzin's species was correctly named. The net result is that the name *T. violacea* appears unacceptable in both its applications.

In disentangling the synonymy I prefer in this case to follow the intentions of the authors and, therefore, let truth prevail against nomenclative fiction: a distinction is made between *T. violacea* Relh. and *T. violacea* Pers., and the misapplications by Tulasne and Bourdot & Galzin are related to the latter name.

(**70**). Under the name *Coryne virescens* the Tulasnes (1865 C. 3: 193 *pl. 18fs. 12–15*) described and depicted two states: the imperfect one (more or less distinctly, but shortly and broadly, stalked with small heads) they identified with *Tremella virescens* Schum. and *T. cinereo-viridis* Schum.; in the prefect state (sessile, pulvinate, often somewhat proliferous and bigger) they thought they recognized *Peziza atrovirens* Pers. [≡ *Corynella atrovirens* (Pers. per Pers.) Boud.]. After a careful comparison of both their text and figures this disposition of Schumacher's two species turns out to be unsatisfactory. Both these species were described as sessile: "gregaria, subconfluens, gelatinosa . . . diaphana sessilis (minuta)". Referring Schumacher's species to the perfect state does not meet the case either; his original figure of *T. virescens* published by Hornemann in the "Flora danica" does not suggest the ascomycetous fruitbody of the known species of *Corynella*.

Schumacher's figure shows an agglomeration of a few small, rounded bodies, together forming a mass of about 3.5–6 mm in diameter; the individual fruitbody

he described as "... suborbiculata, depressiuscula, gyroso-tuberculosa, virescens ..." (in addition to the earlier quoted part of his phrase). This situation agrees better with Bourdot & Galzin's interpretation of *T. virescens*, which covers a species of the modern genus *Tremella:* "Tubercules 2–3 mm pulvinés, agglomerés par 3–6, plus ou moins plissés cérébriformes et chagrinées, vert clair à vert bouteille".

When Corda described a new species which he called *Naematelia virescens*, he added, "An *Tremella virescens*. Schumacher ...?", apparently without definitely identifying his species with Schumacher's. His question-mark is understandable if it is assumed that he relied on Fries's descriptions (1822*:* 299; 1838: 592; sub *Dacrymyces*), which do not mention that the original *T. virescens* was 'gregarious', or, rather, as appears from Schumacher's figure, an agglomeration of fruitbodies. It is not surprizing that Corda's and Schumacher's species were confused by a number of later authors.

There seems to be no choice but to accept *T. virescens* Schum. according to Bourdot & Galzin or to reject it as a nomen dubium. The first of these alternatives is the less disturbing and at the same time the more likely. It is here accepted. As to *T. cinereo-virescens* ("primo ... pezizaeformis"), this seems best treated as a nomen dubium.

(**71**). Some of the species of *Tremella* with smaller fruitbodies are somehow associated with pyrenomycetes. Thus Lundell & Nannfeldt [1936 (LNF 5–6): 30 No. 262] remarked of *T. atrovirens* [= *T. exigua*] that the fruitbodies "emerge normally from openings in the bark caused by the stromata of *Cucurbitaria berberidis* (Pers. ex Fr.) .... The association is so regular that it is an open question whether there may not exist some biological relation between the two fungi."

When Fries (1828 E. 2: 33) admitted *T. indecorata* to the "Systema" he mentioned as synonym "*T. episphaeria*, Chaill.! in litt.", a name that also suggest a similar relationship.

Tremella pyrenophila was described and depicted as growing on stromata of *Valsaria insitiva* (Fr.) Ces. & De Not.; it was named accordingly. The protologue would suggest relationship with *T. indecorata* or *T. tubercularia*, but no spores were found and the assignment to *Tremella* is merely a guess, though it is supported, *inter alia*, by the habitat.

Sebacina globospora Whelden [*1935a:* 126 *pl. 331*; U.S.A., Kentucky] should be referred to *Tremella* rather than to *Sebacina*. Its author reported the "young fruitbodies growing from ostioles of the perithecia of *Diaporthe*". Martin [1944 (SIa 18[3]): 54] referred this species to *Tremella tubercularia*. I hesitate to accept this disposition because the fruitbody was described as "at first hemispherical ... becoming ... effuse bodies from 6 to 12 mm in extent, on drying becoming chalky, pressed against but not adnate to the substratum."

(**72**). Martin (*1934:* 147) thought he recognized one of Möller's original species of *Stypella* (**57**), viz. *S. minor* A. Möll., in what had previously been described as *Tremella gangliformis* Linder. Other authors have subsequently identified it with

Sebacina sphaerospora Bourd. & G. Martin further concluded that "the slender, branched hyphae . . . which form the centers of the papillae [of *Stypella minor*] . . . may be referred to as paraphysoids."

In my opinion Möller made it quite clear that these hyphae cannot be 'paraphysoids' (dendrohyphidia): "Anstatt der Schläuche [Glococystidien von *S. papillata* A. Möll.] finden sich hier . . . Bündel von stärkeren Hyphen, etwa 3 μ stark, welche, über die Fläche hinausragend, die feinen Papillen bilden." What Möller described were hyphae that occupy the axis of the papillae and protrude form the sterile tips of these pustules; consequently these can better be called 'teeth'. If this interpretation is accepted as correct, then *S. minor* strongly recalls a minute species of *Protodontia*, and for the time being I refer it to that genus.

These axial hyphae, which are at most very sporadically branched or not at all, should not be confused with the dendrohyphidia of such species as *Sebacina sphaerospora* (*Tremella gangliformes*). This second type of structures is found throughout the hymenial region between the basidia. The pustules are also different: they are blunt and fertile over their entire rounded surface and do not produce sterile tips of protruding hyphae.

TULASNELLACEAE

(**73**). This family was recently re-defined by Talbot (*1965:* 379) to include the holobasidious species with strictly effused fruitbody and repetitive basidiospores, therefore inclusive of the Ceratobasidiaceae. It is intermediate between the Tremellineae and the Aphyllophorales (Corticiaceae), differing from the former in its lack of metabasidial septa and from the latter in its repetitive spores. Its limits are to my mind artificial, but for the present purpose it is a convenient group.

Because of some border cases that wipe out the distinction between these two, the Tulasnellaceae in its new circumscription may be taken as a family, or even as a taxon of still lower rank, of the Tremellineae: *Metabourdotia* L. Olive (*1957a:* 429) has basidia that become only imperfectly cruciately septate apically, with the septa incomplete below; and *Pseudotulasnella* Lowy (*1964*) with similarly incompletely septate basidia, but with *Tulasnella*-sterigmata.

On the other hand, the Tulasnellaceae are separated from the Corticiaceae (Aphyllophorales) only by their repetitive spores. Donk [1964 (Pe 3): 227, 258] thought that some of the Tulasnellaceae might well be closely related to some genera of the Corticiaceae that lack the ability to produce repetitive basidiospores. If Talbot had found no repetitive spores in *Koleroga* Donk, he would perhaps have left it in the Corticiaceae instead of including it in *Ceratobasidium*.

Until the taxonomic arrangement within the Tremellineae and the Aphyllophorales has been worked out more satisfactorily it will continue to be difficult to know precisely what to do with the 'Tulasnellaceae'. It may appear that this is not even a natural group; perhaps it is a 'grade' composed of taxa of various origin.

For remarks on the *Tulasnella* sterigma, see (**87**).

Ceratobasidium

(**74**). Recently Talbot (*1965:* 382) redefined this genus: on the one hand he reduced it by referring *Corticium atratum* to *Oliveonia*, thus excluding the element with broadly club-shaped basidia with a long tapering base (instead of more or less sphaero-pedunculate basidia); on the other he admitted the extra-European genus *Koleroga*, in which for the first time he was able to demonstrate the occurrence of repetitive basidiospores. His circumscription is adopted here.

Exobasidiellum

(**75**). This genus is so far insufficiently known. Many years ago I studied its sole species from rather poor material [genotype: Syd., Mycoth. germ. No. 1207 (U)], but except for a stray block my notes were destroyed shortly after the last World War. The block shows rather slender basidia, several of which are somewhat constricted at about the middle, with 1–3, mostly 2, rather well-developed sterigmata, and among the spores a single one that had started to form what may have been the initial state of a secondary basidiospore on a sterigma-like outgrowth. This last detail would seem to confirm the remark by Bresadola, the author of *Exobasidium graminicola*, "sporis ... mox promycelium et conidiola germinantibus." On the strength of this slender basis, the genus is tentatively placed among the Tulasnellaceae rather than the Exobasidiaceae. — **Exobasidiellum graminicola** (Bres.) Donk, *comb. nov.;* basionym, *Exobasidium graminicola* Bres. *in* Krieger, Fungi saxon. exs. No. 664. 1891 (n.v.); *in* Hedwigia **32**: 32. 1893.

Oliveonia

(**76**). This genus is here accepted in a newly defined sense (Talbot, *1965:* 381) by admitting a species lacking gloeocystidia, viz. its only European representatative. Now the main difference with *Ceratobasidium* consists in the shape of the basidia, broadly clavate with long tapering base in *Oliveonia*, and subglobose to obpyriform and abruptly narrowed toward the attachment (more or less sphaero-pedunculate) in *Ceratobasidium*.

Thanatephorus

(**77**). The type species of this generic name, *Hypochnus solani* = *Thanatephorus cucumeris*, has gone through a complicated history. First, it proved to be the perfect state of a previously described imperfect fungus that is notorious as a plant pathogen, viz. *Rhizoctonia solani*. Secondly, its specific epithet was changed several times for nomenclative reasons (**80**). Thirdly, its generic position has become a much debated taxonomic issue. Fourthly, it has by now become clear that it will be difficult delimitating it by the traditional taxonomic methods from closely related forms. All this has led to much confusion and as a rule the taxonomist is blamed for excessive eagerness to change names. Plant pathologists, however, often forget that although they have produced an astonishingly wide range of knowledge about the

group, in doing so they have also created a considerable amount of chaos, not for the least part by arrogating nomenclature to their own sphere. The principal culprit, however, is the fungus itself; this behaves so inconsiderately that its various aspects and forms are difficult to pigeon-hole. Therefore, it goes without saying that the synthesis of taxonomic and nomenclative problems as presented on the check list should be taken as personal suggestions, provisional in nature and subject to alteration.

Hypochnus solani and its synonyms have done much travelling from one genus to another; the species has been placed in no less than six genera. These are as follows. *Hypochnus* Fr. per Fr. [cf. 1957 (Ta 6): 75; 1963 (Ta 12): 161] is now considered a synonym of *Tomentella* Pat. and (in my opinion) is impriorable on account of an earlier homonym (*Hypochnus* Fr. ex Ehrenb. 1820, Lichenes). The untenable conception of *Hypochnus* that accomodated the fungus was that of Schroeter and Brefeld, viz. for species with interrupted hymenium. — *Corticium* Pers. per S. F. Gray [cf. 1963 (Ta 12): 158] and *Corticium* Fr. [cf. 1957 (Ta 6): 25] have type species (respectively *Corticium roseum* Pers. and *Thelephora velutina* DC. per Fr.), that are no longer considered to be congeneric with *Hypochnus solani*. The first generic name corresponds to *Laeticorticium* Donk [cf. 1957 (Ta 6): 82; Donk 1956 (Fu 26): 16], the second, to *Phanerochaete* P. Karst. [cf. 1957 (Ta 6): 108; Donk 1962 (Pe 2): 223]. These two generic names *Corticium* are still often regarded as synonyms and accordingly used for a broadly conceived artificial genus. Those who prefer a conservative treatment are adviced to merge *Thanatephorus* into the inclusive genus *Corticium* Pers. per S. F. Gray. — *Botryobasidium* Donk [cf. 1957 (Ta 6): 22; 1963 (Ta 12): 157] was a segregate from the broadly conceived genus *Corticium* and intended for a set of species with deviating structure of the fruitbody. Later it was still thought to be too heterogeneous, so that it was divided into *Botryobasidium* sensu stricto, *Uthatobasidium*, and *Thanatephorus* (the last name based on *Hypochnus solani*). — *Pellicularia* Cooke was re-introduced by Rogers (*1943*) for a combination of *Botryobasidium* (still in a broad sense), *Botryohypochnus* Donk, a few odd species not referable to these two genera, and *Pellicularia koleroga* Cooke, the generic-name-bringing type species. For various reasons this resurrection of *Pellicularia* Cooke [cf. 1957 (Ta 6): 106] has been rejected. First, Rogers interpretation of the type species in such a way as to equal a hymenomycetous species is untenable (Donk, *1953:* Talbot *1965:* 374). Secondly, *Pellicularia koleroga* sensu von Höhnel and Rogers, the acting type of Roger's application of *Pellicularia* as a generic name, is not congeneric with *Hypochnus solani*. Donk (*1958c:* 35) excluded it as *Koleroga noxia* Donk and made it the type of a distinct genus, *Koleroga* Donk. Talbot (*1965:* 372) agreed that *Pellicularia koleroga* sensu D. P. Rog. was not congeneric with *Hypochnus solani*, but he thought the genus *Koleroga* superfluous and referred it to *Ceratobasidium*. — *Thanatephorus* was a segregate from *Botryobasidium*, introduced because of a combination of characters (shape of the basidia, repetitive basidiospores, &c.) that was taken to warrant generic separation. This genus has gradually become more widely accepted: it has been taken up, for instance, by Eriksson, Christiansen, Warcup & Talbot, Talbot (*1965*),

and other authors. — *Ceratobasidium* D. P. Rog. [cf. 1957 (Ta 6): 23; Donk, *1958c:* 17; T. Talbot, *1965:* 382]. Olive (*1957a:* 431) and Pilát (*1957a:* 81) considered this the proper genus to receive the species after it had been excluded from *Botryobasidium* and *Pellicularia* sensu D. P. Rog. and referred to *Thanatephorus*. Naturally whether or not to fuse *Ceratobasidium* and *Thanatephorus* is a matter of taste. Donk thought there were sufficient arguments to keep them apart and he was recently seconded by Talbot (*1965*) in a careful and beautifully illustrated study. I am convinced that the two genera are not very closely related.

(**78**). The species of *Thanatephorus* are usually found or else isolated in their imperfect states, which are referred to the form-genus *Rhizoctonia* DC. per Fr. This generic name is based on *Sclerotium crocorum* ≡ *Rhizoctonia crocorum* (≡ *R. violacea*), the imperfect state of the auriculariaceous *Helicobasidium brebissonii* (syn., *Helicobasidium purpureum*; see p. 156). It has become more and more apparent that *Rhizoctonia solani* and many other rhizoctonias described as distinct species are related, or at any rate as a group easily distinguishable from *R. crocorum*. It would seem that the time has come to consider the question whether it would not be appropriate to combine *R. solani* and similar species into a form-genus of their own. Those who wish to do so are reminded that a generic name for the job is available, viz. *Moniliopsis* Ruhland [cf. 1962 (Ta 11): 89; & Donk *1958c:* 30].

The form-genus *Moniliopsis* was published to accomodate the 'Vermehrungspilz' or 'maladie de la toile', *Moniliopsis aderholdii* Ruhland. The identification of this imperfect state with *Hypochnus solani* = *Thanatephorus cucumeris* has been open to controversy. The current consensus, however, would seem to be that Duggar (*1916*) was correct (or nearly so) when he identified it with *Rhizoctonia solani*. Actually the debate has boiled down to whether or not the two are specifically identical, rather than whether or not they are only distantly related, with their perfect states presumably not congeneric.

The number of rhizoctonias referable to '*Moniliopsis*' is rapidly increasing. The strains are being isolated from various sources like diseased plants, soils, and orchids. That the perfect state of all will prove to be species of *Thanatephorus* I should not care to prophesy, but those that did produce basidia in culture seem to have been referable to that genus. On the present check list I have only entered the specific names of rhizoctonias recorded from Europe; possible synonyms from other parts of the world have been left out. It is likely that many of these so-called species will turn out merely to be strains of *Rhizoctonia solani*.

(**79**). Orcheomyces (sing.), Orcheomycetes (pl.) is a denomination introduced by Burgeff (*1909:* 16) for mycelia isolated from orchids. It was not intended as a generic name in the sense of the "Code": '. . . wollen wir die Gruppe einfach mit „Orchideenpilz" = Orcheomyces bezeichnen, ohne diese Namen eine systematische Bedeutung zu zuerkennen.' However, other authors very soon started to cite 'Orcheomyces' as a generic name, even though dealing with it either as a synonym of

Rhizoctonia or else merely incidentally mentioning it. Burgeff (1911: 25) soon regretted this confusion and replaced it by "Mycelium Radicis", while still later, when he began distinguishing between various species, he preferred to take up the generic name *Rhizoctonia*. As far as I am aware 'Orcheomyces' was not validly published as a generic name of the binominal system until 1925, when Wolff [1925 (VsG 106²): 155], feeling obliged to describe a new species, took it for granted that Burgeff had published a true generic name, remarking: "Der Pilz gehört zur Gattung *Orcheomyces* (Burgeff), weshalb ich ihn *Orcheomyces Neottiae* benannte." He gave no generic description but as the reference "(Burgeff)" is to a previously published description the name was validly published. The next year Wolff (*1926*) admitted further species to the genus. So far I am not aware of any other authors who have accepted the generic name *Orcheomyces* taxonomically.

(**80**). There is also disagreement about the correct name of the type species (perfect state) of *Thanatephorus*. The three competing epithets are 'solani' (Dec. 1891), 'filamentosus' (Sept. 1891), and 'c u c u m e r i s' (1883) in combination with various generic names; they came into use in this order. If 'solani' and 'cucumeris' are regarded as pertaining to the same species (cf. Donk, *1958c:* 31) there is no escape from the adoption of 'cucumeris' since it is the earliest published of the three. Some authors have preferred 'filamentosus'. Even if this should eventually prove to be really synonymous with 'cucumeris', which is not self-evident (cf. Donk, *1958c:* 34), its use would in any case be prevented by the earlier introduction of 'cucumeris'.

(**81**). *Hypochnus b e t a e* Schenck (*1924*) was described from beet as a new species, because the fungus 'could not be identified with any other described species occurring on the same host'. More particularly its author found that it differed from "*Rhizoctonia violacea* var. *betae*" (*R. crocorum*). After comparing perfect states (which as far as *Hypochnus solani* was concerned she judged from literature), conspecificity was thought unlikely, not so much on morphological grounds as because a solitary inefficient infection trial on the stem of a potato plant proved abortive. Schenck also appeared to be incompletely informed on other aspects of *H. solani*, especially on its variability, pathogenicity, and hosts, which had already been recorded in literature. Her paper contains no evidence that might lead to rejection of the thesis that *H. betae* is anything but typical *H. solani* = *Thanatephorus cucumeris*.

(**82**). The name now universally and unanimously used for the imperfect state of *Thanatephorus cucumeris* is *Rhizoctonia s o l a n i* Kühn (1858). As discussed by Duggar (*1915:* 425), Kühn laid special stress upon the symptoms caused by the fungus; these are of a certain form of potato disease now ascribed to *R. solani*. Kühn's description of the fungus itself leaves much to be desired as it is very incomplete. Moreover, he attributed spores to it. Duggar remarked that "the spores mentioned were evidently those of contaminating organisms, or else the oval cells of the tufted stage of the fungus". If, therefore, the second suggested alternative for the 'spores'

is considered untenable it is tempting to reject the name *R. solani* as a nomen confusum. It is true that Kühn (1858: 225) mentioned spores: "... auch gelang es noch nicht, die Entwicklung der dunkel purpurfarbenen runden, dickwandigen, mit körnigem Inhalt gefüllten Sporen (Fig. 22) zu verfolgen, die ich häufig eingestreut fand." These spores, however, were not definitely taken to belong to *Rhizoctonia solani*; this follows from the explanation to figure 20 (Kühn, op. cit., p. xx) where they are mentioned as "die wahrscheinlichen Sporen von *Rhizoctonia Solani*." They can hardly be invoked as a basis for declaring the name of this fungus a nomen confusum.

It should be pointed out that Duggar (*1915:* 444) accepted *Rhizoctonia rapae* Westend. 1851 (≡ *R. napae* West. & Wall. ex Kickx 1867) as synonym of *R. solani*, basing his conclusion on the study of the type distribution. If this identification is accepted the correct name for *R. solani* would be in any case *R. rapae*.

(**83**). *Rhizoctonia cavendishiani*, *R. lanuginosa*, *R. mucoroides*, *R. repens*, ? *R. sclerotica*, *R. sphacelati*, and *R. subtilis* are all so-called orchid fungi. They were isolated mostly from exotic species of orchids growing in greenhouses in France and Germany. Since it has become apparent that most, if not all, orchid fungi can also occur saprobically and be isolated from soil, while furthermore they are not necessary tied specifically to the orchid species from which they are isolated, it is conceivable that the rhizoctonias had already been present in the greenhouses before they entered into their association with the orchids. From more recent researches (for instance by Curtis, *1939*, in North America) it may be concluded that it is not impossible that these fungi also occur in the field and perhaps may be isolated from wild orchid species and still other plants like *Ophioglossum*. In any case, to treat them as true aliens would seem not to be wholly justified by our present incomplete knowledge of them.

(**84**). Boerema (*1964;* & private communication) considers *Rhizoctonia tuliparum* a good species, clearly distinct from but related to *R. solani*, which makes it likely that it is also the imperfect state of some species of *Thanatephorus*.

Tulasnella

(**85**). Our knowledge of the European species of this genus is far from adequate. The number of species more carefully and extensively studied after their first publication is small. It would seem as though few mycologists have made any effort to interpret Johan-Olsen's species published by Brefeld. When examined their current disposition proves disappointing; in view of their poor protologues, however, this is not surprising (**88**, **90**, **91**, **94**).

No less than 13 new species were published by Bourdot & Galzin (*1924*; *1928*). When the genus was monographed by Rogers (*1933*) no study of their types was made; a number of the reductions he proposed resulted from the adoption of a

broad species concept or else from guesswork alone. Some of Bourdot & Galzin's species were taken up on the basis of North American collections, but these interpretations must still be confirmed by comparing them with material from Bourdot's herbarium (*T. bifrons*, *T. pruinosa*, *T. araneosa*). Many of the victims that fell because of a broad species concept are questioned here the species involved are listed in this paper as autonomous, awaiting future decisions (*T. pallida*, *T. brinkmannii*, and *T. eichleriana* Bres.; *T. helicospora* Raunk.; *T. albolilacea*, *T. vernicosa*, *T. sordida*, *T. obscura*, *T. rosella* Bourd. & G.; *T. microspora* Wak. & Pears.; *T. griseorubella* Litsch.). It would seem as though some of Christiansen's interpretations (*1959*) are also debatable (*T. albida*, *T. lactea*, and *T. pruinosa* Bourd. & G.; *T. allantospora* Wak. & Pears.; *T. griseorubella* Litsch.). Thorough revision of the European species is badly needed. For the time being it seems appropriate to keep an open mind and duly to list as autonomous all the species rejected on not too solid grounds.

(**86**). In imitation of Rogers (*1933*) the genus is now often divided into two, *Tulasnella* and *Gloeotulasnella*. The distinction was not primarily based on the absence or presence of glococystidia. As principal characters he used the consistency of the context and whether or not the basidia were embedded. Embedded basidia usually produce longer and more irregular, rather tubular secondary sterigmata. This division has been questioned by Olive (*1957b*), who concluded that there were no sharp limits between the two taxa; he admitted only one inclusive genus, *Tulasnella*. In recognition of the force of his reasoning this conclusion is adopted here. It may be pointed out that *Tulasnella inclusa*, which is stated to have no fruitbody of its own, but to develop its basidia in the—non-gelatinous—fruitbody of *Sistotrema brinkmannii*, was referred to *Gloeotulasnella*, apparently simply on account of the more finger-shaped secondary sterigmata.

(**87**). The *Tulasnella* basidium has caused much speculation, and divergent terms are used as regard its sterigmata. These structures have often been called sessile spores (Juel, *1897*) or epibasidia (cf. Martin, *1957*), and they were even homologized with the four part-cells of the *Tremella* metabasidial body. I am unable to accept these interpretations and am convinced (Donk, *1958a*) that they are only sterigmata, even though they deviate from the usual type occurring in the Aphyllophorales in the protosterigmata; these become strongly developed and inflated and are later separated from the basidial body by a septum. They develop further by directly producing the spiculum or by emitting a more or less well developed tubular outgrowth (secondary sterigma) tipped by the spiculum (Donk, *1954*; Talbot, *1954*: 256 *f.* 1). There is no doubt in my mind that these sterigmata are completely homologous with those of *Ceratobasidium*, *Agaricus*, or *Tremella*. The recent discovery of a genus (*Pseudotulasnella* Lowy, *1964*) with tremellaceous basidial body (apically longitudinally septate) and *Tulasnella*-sterigmata furnishes strong novel support.

(**88**). When Brefeld (*1888b:* 5) published the genus *Pachysterigma* with four—all new—species, he remarked that it was "als neues Genus von Olsen unterschieden und untersucht worden". This association calls for special caution since much of Johan-Olsen's share in Brefeld's researches seems to be connected with doubtful or apparently erroneous conclusions. The four species are *Pachysterigma fugax*, *P. incarnatum*, *P. rutilans*, and *P. violaceum*. None of these species is readily recognizable from the protologue. The current application of the last mentioned name, in the form of *Tulasnella violacea*, is perhaps barely acceptable but it will not be disputed here. The other three are briefly discussed below (**90**, **91**, **94**).

(**89**). Christiansen (*1959*), who inclines to a rather narrow species concept, recently maintained that *T. helicospora* is distinct from *T. calospora*. It is now assumed that the latter is extremely variable in the shape and development of its spores. It is just possible that contrary to current opinion the spirally-curved spores constitute a valid specific character. (Bourdot & Galzin, *1928:* 58, called it *T. calospora* f. *spirillifera* Bourd. & G.) In order to stimulate further investigation *T. helicospora* is again listed above as a distinct species.

Tulasnella rosella has undergone *la mort sans phrase* and is now considered to be merely an insignificant colour modification of *T. calospora*. It may be recalled, however, that Bourdot & Galzin (*1924:* 264) emphasized that it also had a habitat of its own: "*T. calosporae* Boud. proxima, sed suis locis constans." It is recommended for renewed study.

Compare also *T. rutilans* (**91**).

(**90**). Rogers (*1933:* 184, 186) reduces *Pachysterigma fugax* to the synonymy of *Tulasnella violea* (in a broad circumscription) "on the basis of coloration, texture, and form of various organs". In view of the protologue, which gives a different colour and no indication of texture it is difficult to agree unconditionally with this disposition. The protologue states that the fruitbody consists of "einem dünnen, gräulich-durchschimmernden, mit blossem Auge kaum erkennbaren Belag", no pinkish or violaceous tints being specifically mentioned for this species. The spores are stated to be 'schief eiförmig' (12 × 10 μ) and are so drawn; they are of about the same size as those of *Pachysterigma incarnatum* (**94**). A dubious species; in my opinion there is for the moment no choice other than to list it as autonomous, leaving a more definite conclusion to a future monographer. See also (**88**).

(**91**). I am unable to accept Roger's interpretation (*1933:* 184, 189) of *Pachysterigma rutilans*. The species he had in mind has evenly cylindrical, curved spores, viz. typically sausage-shaped. This shape he strongly emphasized in order to differentiate his species ("spores evenly curved, evenly cylindric") from *Tulasnella allantospora* ("spores evenly curved, tapering toward the ends"). The protologue of *P. rutilans* reveals the spores as "lang gezogen und sichelförmig gekrümmt" (16 × 8 μ) and accordingly depicted as crescent-shaped with rather sharp-pointed ends of which

one may be decurved. They are too slender and perhaps also more variable in shape than the spores of *T. allantospora*, recalling those of *T. calospora*. On circumstantial evidence it might be concluded that the spores of *T. rutilans* are smaller than those of the latter species, but if their length (16 μ) for once were correctly indicated then they would come close to the range of the spores of *T. calospora*. The shape of the basidia (cylindrically stalked globules) may also point in that direction. I feel compelled to consider *P. rutilans* (although still doubtful) as a species certainly distinct from Rogers's interpretation; the latter is therefore renamed: **Tulasnella curvispora** Donk, *sp. nov.*

Sporae cylindricae ut in *Tulasnella allantospora* Wak. & Pears. aequaliter curvatae, sed in extremis haud attenuatae itaque haud falcatae, potius allantoideae, maiores, 10–14 × 3–4 μ. — Carpophorum tenue, ceraceo-pruinosum, lilaceo-cinerascens. Hyphae 3–4–5 μ diam., fibulatae. Basidia pyriformia, sterigmatibus 2–4 primo subglobosis, 5–6–8 μ diam., denique filamentum conicum sporam producens formantibus. — Typus: Nederland, Bilthoven, leg. M. A Donk 1272, typus *Tulasnellae eichlerianae* var. *lilaceo-cinereae* Bourd. & Donk apud Donk = *Tulasnella rutilans* (J.-Ols. apud Bref.) Bres. sensu D. P. Rogers qui hanc determinationem confirmavit.

(**92**). **Tulasnella inclusa** (M. P. Christ.) Donk, *comb. nov.*; basionym, *Gloeotulasnella inclusa* M. P. Christiansen *in* Dansk bot. Ark. **19**: 41 *f. 36.*

(**93**). The first species of *Tulasnella* in which the remarkable basidia, so characteristic for the genus, were encountered was originally published as "*Corticium incarnatum* Fr. (*pinicola*)". It was described too briefly for absolutely certain identification. Compare Burt (*1919:* 257): "It seems probable that *Corticium incarnatum* var. *pinicolum* Tul. must have been either [*Tulasnella violea*] or *T. eichleriana* on account of the subglobose spores which the Tulasnes figured, although unfortunately without stating spore dimensions or scale of magnification of their figures."

When Schroeter introduced the genus he considered his only species (*T. lilacina*) to be the same as the fungus described by the Tulasnes. He did not mention any microscopical details but contented himself with remarking, "Basidien und Sporen in derselben Art gebildet wie bei obigen von Tulasne beschriebenen Pilze." The macroscopic details of Schroeter's species suggest the common *Tulasnella violea* (*fide* Bourdot & Galzin, *1928:* 56).

In view of all this, however, it would seem correct to accept the fungus of the Tulasnes, on which the names *Corticium pinicola* (Tul.) Sacc. and *Tulasnella incarnatum* Bres. are based, as well as *T. lilacina*, as belonging to *T. violea.*

(**94**). The two species *Pachysterigma incarnatum* ≡ *Tulasnella incarnatum* (J.-Ols. apud Bref.) Juel and '*Corticium incarnatum*' sensu Tul. (**93**), which Bresadola and Bourdot also called *T. incarnatum*, have been often confused. This is testified to, for instance, by the denomination *Tulasnella violea* var. *incarnatum* "(Tul.) Juel" (Bourdot & Galzin, *1928:* 57). Neither species is readily identifiable from its protologue.

Rogers (*1933:* 184) reduced *Pachysterigma incarnatum* to the synonymy of *Tulasnella violea*, which in his circumscription has an enormous spore range 3.5–8 × 3–6.5 μ. The spores of *Pachysterigma incarnatum* are given in the protologue as 'schief birnförmig' (11 × 8 μ) and depicted as almost typically pip-shaped; two are drawn as distinctly adaxially flattened, but this may be a matter of overdrawing. Since we do not know their correct dimensions (Brefeld's microscopic measurements are notoriously unreliable) the spores may be of the size of those of *T. violea* sensu stricto, or else of *T. microspora* provided their recorded dimensions, as in several other cases, are reducible by more than fifty per cent; the latter species with its somewhat more ovoid spores, would then also agree in this respect. *Tulasnella fugax* (**80**) is listed on this check list under *T. violea*, according to custom but without conviction.

DACRYMYCETALES

(**95**). The taxonomic position of the only family of this order is now the subject of controversy. The context and the shape of the fruitbody in many representatives have caused the Dacrymycetaceae to be considered as part of the Heterobasidiae (Patouillard, 1900: 4, 28, as "Calocéracés"); this is now the prevailing opinion. It is defended, for instance, by Martin (*1952a*) who treats the Dacrymycetaceae as a family of the Tremellales, his equivalent of the Heterobasidiae of this check list.

I do not share this view and regard the family as a series parallel with the Tremellales [Donk, 1964 (Pe 3): 227, 243]. The series is well delimited except perhaps for the genus *Cerinomyces* (**105**) which (in its typical species) falls more readily within the artificially conceived Corticiaceae. If suitably enlarged by a few additional species it forms an apparently uninterrupted bridge between the two families. Martin and, most recently, McNabb are convinced that this bridge is dacrymycetous territory, while I think that this is not yet fully justified for the most typical species of *Cerinomyces*, perhaps owing to our still incomplete knowledge of them.

Because collectors of the jelly fungi usually do not descriminate between the Tremellales and the Dacrymycetales the latter are included in this check list.

(**96**). The Dacrymycetales are very troublesome for the taxonomist, not in the least in connection with generic delimitations. Thus Patouillard & Lagerheim [1895 (BmF 11): 211] concluded that "Les genres de la série des Dacrymycètes étant établis presqu'exclusivement d'apres la forme de réceptacle, sont bien peu distincts les uns des autres et devraient peut-être être considérés comme de simples sections d'un type unique . . .". About forty years later Neuhoff (*1936b:* 48) still held the same opinion: "Es gibt überhaupt bisher kein einziges Merkmal, das innerhalb der Familie zur Scheidung der Gattungen geeignet wäre; sämtliche gegenwärtig angenommenen Gattungen der Dacrymyceten sind durch Uebergänge mit einander verbunden." More recently, however, through the work of Kobayasi (*1939b, c*) and McNabb (*1964, 1965a–e,* publication in progress) the situation has improved, although in many cases the generic limits are still far from settled. These few remarks

are not an introduction to a better understanding of the systematics of the family but they are intended to serve as a warning that too much stability in the generic conceptions should not be expected in the near future.

Calocera

(**87**). *Calocera cavarae* is known from a single collection so that its specific status is still difficult to assess. McNabb treats it as a variety of *C. viscosa*.

(**98**). As understood here, *Calocera cornea* is a very variable species, accepted in almost the same circumscription alloted to it by McNabb. However, only some of his synonyms of those based on European material have been entered; *Calocera cincta*, *C. brefeldii*, and *C. stricta* are discussed separately below (**99**, **102**, **103**). All names based on extra-European collections and listed by McNabb as synonyms of *Calocera cornea* have been omitted. These names, all of which were reduced to synonymy without discussion, are: *Calocera pilipes* Schw. (U.S.A., North Carolina): *C. nigripes* Syd. (ex-Belgian Congo); *C. rufa* Lloyd (Tasmania); *C. vermicularis* Lloyd (U.S.A., New York), described as having cespitose fruitbodies which were pure white when soaked and pale yellow when dry; and *Calopposis nodulosa* Lloyd (U..S.A., Massachusetts) and *Calopposis damae-cornis* Lloyd (South Australia). *Calopposis nodulosa* is the type of the generic name *Calopposis*. The genus was characterized as having "a basal cushion-like body from which proceeds clubs like those of a *Calocera*." The nature of this basal cushion has not been disclosed. (The type specimen is in very poor condition.) *Calopposis damae-cornis* was stated by its author to have fruitbodies which are "pale white, with the slightest yellow tint" and spores as big as $16 \times 8\ \mu$.

(**99**). *Clavaria cornea* "*β. Cl. cincta*" Pers. (1797 C.: 186/54) was very briefly described, the leading character being "basi tomento annulatim cincta." There is little to differentiate it from *Calocera cornea*. When Secretan published *Clavaria cincta* as a species of its own he specifically cited Persoon's *β*-variety as the epithet-bringing basionym. However, his description strongly suggests that he was dealing with *Calocera furcata* rather than *C. cornea*.

(**100**). The specific status of *Calocera striata* is still under discussion. Bourdot & Galzin kept it distinct from *C. cornea*, and Neuhoff (*1936b:* 36, in obs.) called it a well-characterized and rare species. McNabb reported it as not uncommon in the British Isles, at the same time stating that there it is usually found in association with more typical fruitbodies of *C. cornea*. He reduced it to the latter species.

(**101**). McNabb (*1965a:* 45, 46) merged *Dacryomitra pusilla* (including *D. glossoides* Bref.) in *Calocera glossoides* and ascribed to the resulting taxon spores which are usually 12–14.5 μ long and become three-septate. What he did not state

in so many words was that there could not be a taxon as conceived by Bourdot & Galzin under the name of *Calocera glossoides* with more or less flattened, lance- or tongue-shaped fruitbodies, not markedly divided into a stalk and a fertile portion, and with smaller spores (about 8–12 μ long) which are non-septate (and perhaps may be expected to become tardily one-septate). Although I do not deny that these two conceptions (a collection of each of which I have studied carefully) may not be connected by intermediates, I am not yet convinced of it. If these intermediates really exist, then the last barrier between *Calocera* sensu stricto and *Dacryomitra* as distinct taxa, even at the sectional level, would have been removed. It seems worth while to keep an open mind and await additional evidence before coming to a definite conclusion one way or the other. If the two conceptions should both prove to deserve specific rank, the epithet 'pusilla' must be recombined with 'Calocera'.

(**102**). McNabb (*1965a:* 41, 42) listed *Guepinia brefeldii* as a synonym of *Calocera cornea* without comment. Lloyd described the fruitbody as flattened with the hymenium on one side only. It had previously been determined by Saccardo as *Calocera palmata*. Lloyd's accompanying photographs are poor but they give me the impression that they show flattened fruitbodies with rounded, entire tops, not at all suggestive of *Calocera cornea* or its forma *palmata*.

(**103**). When Fries instated *Calocera stricta* he divided it into two forms, the typical one ("a. *truncorum*") and "b. *epiphylla*". The latter, by its size and its being compared with *Clavaria brachyorrhiza* Scop., seems best considered as simply an undivided form of *Calocera viscosa* rather than *C. furcata*. As for typical *Calocera stricta*, Neuhoff (*1936a:* 25) disposed of it as a form of *C. viscosa*, while McNabb (*1965a:* 42) referred it to *C. cornea*. Both authors studied a specimen in Fries's herbarium (collected in 1853) but since the specific name was published in 1838 this is evidently not the type. McNabb founded his opinion on circumstancial evidence: "In a later work Fries (1874, p. 680) cited Bonorden's illustration of *C. fasciculata* as representative of f. *truncorum*. The basidiocarps illustrated are typical of the simple form of *C. cornea* and are unlike any variants of *C. viscosa* encountered during this investigation."

The original description (of forma *truncorum*) by which *Calocera stricta* must be primarily judged runs: "simplex, solitaria, elongata, basi praemorsa, *linearis*, lutea, sicca, laevis. In pinetis . . ., ½–1 unc. l. basi tomentulo albo cincta. *Cl. cornea cincta* Pers. ?" There is little in this protologue to provide a satisfactorily choice between *C. viscosa* (simple forms), large *C. cornea*, and *C. furcata*, all of which occur exclusively, or may occur, on coniferous wood. For the time being I prefer to enter *C. stricta* as a nomen dubium, unlikely to represent a species of its own. For remarks on *C. cincta*, see (**99**).

(**104**). *Calocera cornea* var. *subsimplex* Bres. was raised to specific rank as *Calocera subsimplex* (Bres.) Britz. It is not known what the type represents. McNabb (*1965a:* 52) concluded from the original description that "Macrofeatures, spore size and

shape, and habitat all strongly suggest that this species is *Calocera glossoides*." It is evident that what he had in mind is entered on this check list as "*Dacrymitra*" *pusilla* rather than *Calocera glossoides* (**101**): the spores (12–18 × 4–5 μ) as well as several other features mentioned in the protologue suggest the former.

As to Britzelmayr's interpretation, both his figure and spore measurements (8–10 × 4–5 μ) are strongly suggestive of quite typical *Calocera glossoides*, as described by Bourdot & Galzin and as distributed by Fuckel (GRO).

McNabb acted as if two different names were involved, "*Calocera cornea* var. *subsimplex* Bres." (p. 52) and "*Calocera subsimplex* Bres. in Britzelm." (p. 55). In my opinion Britzelmayr raised Bresadola's variety to specific rank, (perhaps) with simultaneous misapplication of the basionym.

Cerinomyces

(**105**). The inclusion of this genus in the Dacrymycetaceae has become a matter of debate. *Cerinomyces* and its predecessor *Ceracea* Cragin sensu Pat. have almost consistently been referred to this family, mainly because the basidia are regarded as typically *Dacrymyces*-like. On the other hand Eriksson [1958 (Sbu 16[1]): 46] and Donk (*1956:* 375) suggested that the typical species of *Cerinomyces* could just as well be referred to the Corticiaceae (Aphyllophorales). Martin (*1957:* 25) called this view "utterly fantastic and completely without merit", without, however, offering any further comment. That was left to Kennedy (*1959a:* 880–881) who went into the matter more carefully, though not without a certain misinterpretation of precisley what had been stated. Still more recently McNabb (*1964:* 415) also decided that a strongly enlarged genus *Cerinomyces* were to be included in the Dacrymycetaceae.

The generic name *Cerinomyces* is based on *C. pallidus* G. W. Mart. (extra-European). Together with the European *C. crustulinus* this species produces completely effused fruitbodies which at no stage are attached to the substratum by root-like or narrowed bases, and which are not gelatinous. The basidia are comparatively plump and are not embedded in a matrix, so that the sterigmata protrude free into the air. The spores do not become septate nor are they known to be capable of producing the kind of small conidia so commonly met with among the Dacrymycetaceae. Not all of these features are matched by any of the Dacrymycetaceae; the others occur only sporadically in this family. On the other hand certain species of the Corticiaceae are known also to have stichic, mostly two-spored basidia (*Clavulicium* Boid.), strongly *Dacrymyces*-like spores as to shape, size, and septation (for instance, "*Corticium*" *terrigenum* Bres., cf. Talbot, *1965:* 401 *f. 19*); and strongly developed sterigmata that in this respect do not yield to any species of the Dacrymycetaceae (*Thanatephorus* Donk) and at the same time may even be constantly at twos [*T. sterigmaticus* (D. P. Rog.) Talbot]. There can be no doubt that *Cerinomyces pallidus* is typically 'corticiaceous'. What is really needed to make this species 'dacrymycetaceous' is an improved definition of the Dacrymycetaceae, one that would draw a sharper line of distinction from the Corticiaceae.

As I have already intimated, and Corner has clearly expressed, the Corticiaceae is not a proper (natural) family, but only a grade, a receptacle originally conceived to include all effused holobasidious Hymenomycetes. It should gradually dwindle away, for instance by the exclusion of groups that can be attached to other families: thus *Coniophora* and *Coniophorella* have been transferred to the Coniophoraceae, *Tomentella* to the Thelephoraceae (emend.), and so on [cf. Donk, 1964 (Pe 3): 199–324]. I have no (and never have had any) *a priori* objection to removing *Cerinomyces* from the Corticiaceae and transferring it to the Dacrymycetaceae, provided the arguments for this are augmented and more precisely presented and prove convincing for the mycologist. It is, for instance, desirable to know more about the cytology (position of the division-spindle of the diploid nucleus) of *C. pallidus* and other species with more or less similar basidia.

The inclusion of *Tulasnella* in the Corticiaceae rather than the Tremellaceae (Donk, op. cit. pp. 227, 258) is another instance where a more satisfactory rearrangement of the effu.ed species of the Tremellineae and a revised appraisal of the limits of this taxon is needed. In this case much depends on a better understanding of the taxonomic value of the ability to produce secondary basidiospores. I would not be surprised if eventually *Tulasnella* were to be closely associated with tremellaceous genera.

McNabb (*1964*) assembled in *Cerinomyces* a series of species that would completely bridge the differences between *C. paltidus* and more typical Dacrymycetaceae. If one is disposed to interpret *C. pallidus* as a strongly 'reduced' species, the possibility must be faced that the parts of this bridge consists of 'reduced' members of various groups of Dacrymycetaceae rather than a clean series of 'missing links'.

Dacrymyces

(**106**). Although most of the groups of Hymenomycetes have become impenetrable tangles to those wishing to sort out the taxa by the best current methods, some groups are more afflicted by man-made difficulties than others. *Dacrymyces* is one of the examples where mycologists are perhaps more to be blamed than nature for the troubles involved in peeling out the species and their correct names. Insufficient descriptions, erroneous observations, inexact measurements, hasty conclusions, not deigning to preserve material, imperfect knowledge of the literature, and erratic nomenclature have been liberally sown throughout the building up of our knowledge of the genus. To make matters worse there are the many difficulties presented by the objects themselves.

Among those who have unquestionably had an important share in increasing our knowledge of the genus was Brefeld. He elaborated the classification of the jelly fungi on the basis laid out by the Tulasnes and de Bary, although he tried too hard to inflate his own importance. In addition, he had an intimate knowledge of more species of *Dacrymyces* than any person before him. It was a pity, however, that he was not a well-trained taxonomist: as far as I know he did not preserve specimens;

his specific descriptions are often poor, overlooking important details, and they are usually drowned in a verbose text from which they can sometimes be rescued only by patient analysis. His microscopical measurements are almost always wrong, being usually much too large. The trouble is that it is not always possible to decide how far wrong his spore measurements are—if they are not perhaps in some cases, as an exception, correct after all.

All these factors have contributed to subsequent complications. Some of his species have been too easily suppressed, apparently because his 'hidden' descriptions were not read carefully enough (*D. longisporus*). Others are still problematic because of uncertainty about the true spore dimensions (cf. discussion under *D. lutescens*). To revaluate Brefeld's work on *Dacrymyces* I have tried below to distil the descriptions of some of his species from the prolixity and to indicate what has been said about them. All references to the blastoconidia are omitted.

(**107**). Karsten is another author who contributed to our knowledge of *Dacrymyces* in Europe by describing a relatively large number of new species. His descriptions, however, are usually poor and they are not accompanied by illustrations. In some respects his work is superior to Brefeld's; on the whole his spore dimensions have been found to be quite accurate, while moreover he preserved the types of his new taxa. This will enable the monographer to identify most of his species. If I am well informed, we shall hear more about them in the near future, so that no notes are appended to his names.

(**108**). Judging from the description of *Ceracea aureofulva* published by Bresadola, this species produces corticioid fruitbodies that may form rather extensive crusts so that he placed it in *Ceracea* Cragin as this genus was understood by Patouillard. The dacrymycetoid species referred to this genus at one time or another have now been distributed over *Cerinomyces* (**105**) and *Arrhytidia*. As now defined *Cerinomyces* has truly effused, often confluent fruitbodies that are never attached to the substratum by a definitely limited or root-like base. In *Arrhytidia* the corticioid appearence is the result of confluence of more or less distinctly rooted fruitbodies such as are typical of *Dacrymyces*. Whether *Arrhytidia* should be maintained as a genus or not is still an open question which will not be discussed here.

As to *Ceracea aureofulva*, it is not evident from the published descriptions which of the two 'resupinate' genera it could be referred to, but the odds are against referring it to *Cerinomyces*. Since I doubt that *Arrhytidia* is a good genus, I have entered the species in *Dacrymyces*.

von Höhnel [1908 (SbW 117): 1027] identified *C. aureofulva* with *Dacrymyces confluens* and he also thought of *Dacrymyces corticioides* Ell. & Ev. as a possible synonym. Coker [1928 (JMS 43): 237] and Brasfield [1938 (AMN 20): 214], who both indicated that they studied authentic material, listed *C. aureofulva* as a synonym of *Arrhytidia involuta* (Schw.) Coker, a species to which Coker and Martin also referred *Dacrymyces corticioides*. Bresadola [1911 (Am 9): 425] dissented from the identification of *C. aureofulva* with *Dacrymyces confluens*.

Recently Dr. R. F. R. McNabb kindly informed me that he intends to treat *Ceracea aureofulva* as a synonym of *Dacrymyces corticioides*. He is of the opinion that this species has usually been confused with *Arrhytidia involuta*, but he considers the two distinct, and, he added, most of the descriptions of *A. involuta* in fact apply to *D. corticioides* [1885 (JM 1): 149].

(**109**). The species is currently known as *D. palmatus*, but the corresponding basionym, *Tremella palmata* Schw., is pre-occupied. The next name to be considered is *Dacrymyces rubiformis*; this species has been redescribed in detail by Neuhoff. Kennedy suggested that it might be conspecific with *D. palmatus*, but Neuhoff, who knew them both, kept them apart. The spore dimensions of *D. palmatus* are practically the same in Kennedy's description [*1959b:* 907; 17–21(–25) μ long] and that of Neuhoff's (*1936b:* 44; 18–28 μ long), while those of *D. rubiformis* are decidedly smaller: according to Neuhoff [*1936b:* 43; 16–18(–20) μ long]. However, there seems to be some overlapping and the possibility that the correct name will appear to be *D. rubiformis* cannot be ruled out as improbable. The decision must be left to a later monographer, since I feel not competent to act at this stage. The next older name is *Dacrymyces chrysosperma*.

(**110**). *Tremella pinicola* Britz. ≡ *T. britzelmayri* was poorly described and depicted. Britzelmayr himself compared it with *T. mesenterica:* "... auch bezüglich der Sporen wie *T. mesenterica*", a species whose spores he simultaneously depicted as globose and stating them to be 11–15 × 9–10 μ. It was inevitable that eventually *T. pinicola* would be referred to *T. mesenterica*, also in view of the fact that after all the latter species has very rarely been reported from coniferous wood. A collection from *Picea abies* made in Denmark was determined by Neuhoff as *T. pinicola* and considered by him a variety of *T. mesenterica* (cf. Bjørnekaer, *1944:* 25, 33).

The original figures, however, plus the fact that it was not merely accidentally that Britzelmayr found *T. pinicola* but that he came across it repeatedly on diverse gymnosperm substrata ("aus der Rinde von Fichten, Föhren oder Latschen hervorbrechend") point into another direction. If Britzelmayr had said nothing about the spores, I would, without much hesitation, have suggested *Dacrymyces chrysosperma* [*D. palmatus* (Schw.) Bres. apud Höhn.], a species that Britzelmayr reported and depicted under the name *Dacrymyces multiseptatus* G. Beck simultaneously with the publication of *Tremella pinicola*.

The globular spores depicted (but not described) by Britzelmayr for *T. pinicola* are of about the same size as those of *T. mesenterica* on the same plate, or perhaps slightly smaller; therefore, (assuming that they were correctly recorded) they must be accepted as measuring about 10 μ in diameter, or somewhat larger. For this and other reasons I cannot agree with Ade [1923 (ZP 2): 63] who wrote about *T. pinicola:* "Es stellt m.E. [*T. pinicola*] nur *Dacrymyces abietina* mit den zahllos vorkommenden Konidien (3–4 μ, länglichrund), nicht Sporen, vor."

(**111**). One of Brefeld's neglected species is what he erroneously identified with *Dacrymyces chrysocomus*. As will appear from a comparison of Brefeld's account with the current interpretation of *D. chrysocomus* (sensu Fries) the two species have little in common. The following description was drawn up from Brefeld's data (*1888a:* 156 pl. 10 *fs. 12–17*):

Fruitbodies *Tremella*-like, closely resembling conidial states of *Tremella lutescens* [sensu Bref = *T. mesenterica*], often formed along the whole length of a branch, developing only during very wet weather, upon drying shriveling up to almost complete inconspicuousness, sessile, at first globosely vaulted, then upon enlarging developing several deep depressions, 3–18× 3–10 mm, 2–8 mm high (after figure), fierily yellow-orange, gradually becoming softer, finally diffluent into a colourless mucus which almost completely disappears upon drying; context soft, tremblingly jelly-like, colourless except for hymenial layer. Basidia huge, the base rounded, 2.5–3 × wider than the hyphae from which they arise (after figure), elongated club-shaped, then forked into two strongly developed sterigmata, with coloured contents; in young fruitbodies mixed with sterile hyphal ends. Spores short-thickset, adaxially slightly depressed, in dorsal view oblong, apiculate, 35 × 15 μ [presumably incorrect measurements], becoming multiseptate immediately after being shed; septa up to 12–14 (after figures), in very large spores up to 19, closely set, some oblique; contents (in unseptate spores) dense, coloured, with hyaline central guttule. — The size of the spores as computed from the figures (*pl. 10 f. 16: 4*) is about 30 × 14 μ.

On small, fallen branches of *Pinus silvestris*. Throughout the winter. Germany, presumably Westphalia, near Münster.

It is difficult to understand how Neuhoff (*1936b:* 39) could identify this Brefeldian species with *D. conformis* (P. Karst.) Neuh., which in its original sense and to all appearances in Neuhoff's conception is nothing other than *Femsjonia pezizaeformis*. In any case there is almost nothing in Brefeld's description to suggest the species Neuhoff described as *Dacrymyces conformis*.

Dr. D. A. Reid (in litt.) feels sure that Brefeld's conception is identical with the species described some years ago under the name of *Dacrymyces estonicus* Raitv., a species characterized by basidia that have been termed urniform, viz. with a basal swollen portion and a narrower distal portion. The broadly rounded base Brefeld emphasized for the basidia and some of the basidia he drew support this view.

(**112**). Since Brefeld's studies on *Dacrymyces* it has become customary to distinguish between a species occurring in both an arthrosporous and a basidiferous state, and one or more species that closely resemble the former in many particulars but that are not capable of producing arthrospores. Brefeld called the first *D. deliquescens*, but the correct name is *D. stillatus* (**120**). The others he called *D. cerebriformis* and *D. lutescens*. It is not easy to form a well-founded opinion about these latter species as to either their status or their correct names.

Keeping to the tradition that in Europe there is only one species which forms arthrospores and that similar fungi which do not produce them are specifically distinct (which is not altogether self-evident) I have assembled the latter crowd under the name *Dacrymyces lacrymalis*. From the following discussions it will be

seen that this group is nothing but a receptacle for several taxa that have so far not been adequately delimitated from one another and/or on which conflicting opinions have been published.

As to *D. lacrymalis*, Nees considered it one of the two intergrading forms (states) that he combined under the name of *D. stillatus*. This is the earliest disposition of the name. In the absence of sufficient contra-indications it is common practice to follow such a disposition, which in this case would amount to identifying *D. lacrymans* with the basidiferous state of *D. stillatus*.

Fries made *D. lacrymalis* a variety of *D. stillatus* (original sense) and as such it gradually evolved into *D. lutescens* Neuh. = *D. lutescens* Bref. sensu Neuh. the counterpart of *D. stillatus* never producing arthrospores. Donk (*1964:* 10) took Fries's variety as exclusively based on the fungus Persoon described in 1822 (p. 104) as *D. lacrymalis*, a conclusion supported by a comparison of Persoon's and Fries's diagnoses of 1822. (It is possible that the fungus Persoon described in 1801 is not the same as the one of 1822.)

As present I do not feel competent to decide between the two interpretations and in taking up the name *D. lacrymalis* I merely follow the main trend which looks on *D. lutescens* Neuh. ≡ *D. stillatus* var. β. Fr. ≡ *Tremella lacrymalis* Pers. as unable to produce an arthrosporous state, hence as different from *D. stillatus* (original sense).

Two further interpretations of *D. lacrymalis* are briefly mentioned above on the check list.

(**113**). At first Fries (1822: 230) listed *Dacrymyces deliquescens* Bull. as synonym of the original *D. stillatus* (**120**). Duby (1830: 729) exchanged the two names of the taxon of Nees and Fries. This preference for the name *D. deliquescens* has become widely accepted. Donk (*1964:* 6) was not entirely convinced that the two species were in fact the same. He discussed Bulliard's protologue and the various conceptions of the species in some detail, in the end concluding that *D. deliquescens* was apparently not conspecific with *D. stillatus*. He regarded it a nomen dubium to be withdrawn from circulation. In any case, if one wishes to identify *D. deliquescens* with *D. stillatus* in a very inclusive sense, the former has in accordance with present rules of nomenclature a 'later' name, as it was revalidated after *D. stillatus*. Were I compelled to accept *D. deliquescens*, I would perhaps identify it with *D. lacrymalis* in the temporary sense adopted in this publication, rather than with *D. minor* (**114**).

(**114**). *Dacrymyces minor* was described from North America. Although Coker had previously suggested that it might be the same as "*D. deliquescens*" it was not reported from Europe until Kennedy (*1959b:* 908) did this under the name *D. deliquescens* var. *minor* (Peck) L. Kenn. She listed it from England, Germany, and Sweden (specimens studied) and included in its synonymy "*Dacrymyces deliquescens* f. *lutescens* Fries, Syst. Myc. **2**: 230. 1822 (teste Neuhoff)" (a variety, rather than a form, not named by Fries on this occasion), "*Dacrymyces lutescens* Bref. sensu Neuhoff, Arkiv för Bot. **28** A[1]: 41 [= 43, 48]. 1936", and "*Dacrymyces deliquescens* f. [= var.] *fagicola*

Bourd. & Galz. Hymén. France 67 [= 68]. 1928". Thus, she actually identified *D. lutescens* sensu Neuh. with the North American *D. minor*. She did not explain the "teste Neuhoff". I am not aware that Neuhoff ever identified the two. Neuhoff's latest description (see p. 274 for an English translation) does not readily support this identification, although he described the individual fruitbodies as small (1–3 mm wide) and often becoming confluent at maturity.

The inclusion (without any comment) of *D. deliquescens* var. *fagicola* ≡ *D. fagicola* was apparently not the result of an inspection of authentic material. To judge from its original description ("tubercules lenticulaires, 0,5 mm diam., en groupes serrés") the fruitbodies of this species are not only differently shaped, but they are also much smaller and more densely crowded. In all these respects *Dacrymyces fagicola* immediately brings to mind *D. succineus* sensu Boud. Since there is still a clear and apparently broad margin of doubt it seems wise to treat *D. fagicola* for the present as a species distinct from *D. minor*.

When I had to decide whether to merge *D. minor* in the complex of *D. lacrymalis* (as here delimited) or to keep it separate I chose the second alternative mainly to draw attention to it. Apparently the species had already been described from Europe under the name of *D. gallaicus*. This was found on gymnosperm wood, but although *D. minor* is nearly always reported from angiosperm wood it may be recalled that Kennedy gave the habitat as "angiosperm or rarely gymnosperm wood".

Compare *Tremella guttata* Bon. and *Dacrymyces saccharinus* Sacc. & Trav., both published at an earlier date than *D. minor*.

(**115**). *Dacrymyces lutescens* Bref.—Brefeld (*1888a*: 152 *pl.* 10 *fs.* 1, 2) compared this species with his *D. deliquescens*[11] and gave a description that was mainly differential and contained the following information.

Fruitbodies in comparison with *D. deliquescens* on an average somewhat larger and brighter in colour, viz. pale orange, when young showing only a few folds, the latter increasing in number while the spores are being shed and then developing into crater-like depressions, the two fruitbodies depicted 12 and 13 mm in diam.; context firmer and not diffluent during or after sporulaton, colourless with orange hymenial layer on section. Basidia wider and larger. Spores wider and larger, 28 × 10 μ [presumably erroneous measurements, see below], but same kidney-shaped form and also becoming 3- (rarely 4-)septate. No arthrospores ('Gemmen') formed, at least these not observed either in nature or in cultures. — The size of the spores as computed from the figures (*pl.* 10 *f.* 2: 3) is 17.8 × 7.2 μ.

[11] As conceived by Brefeld (*1888a*: 141 *pl.* 9) this is *Dacrymyces stillatus* sensu stricto (**120**). He described in great detail both its arthrosporous and its basidiferous state, as well as the behaviour of the spores in culture. It is surprising to find that in this case his measurements of the spores are correct: 15 × 5 μ; this also agrees with measurements computed from the figures, for instance, 16.5 × 5.7 μ (*pl.* 9 *f.* 3: 3). In connection with Brefeld's statement that on an average *D. lutescens* has the larger fruitbodies it may be pointed out that this would hardly be true if the fruitbodies of *D. deliquescens* he depicted (*pl.* 9 *f.* 1) had been drawn correctly to scale ('natural size'); in that case the fruitbodies of *D. lutescens* would have been unusually large.

On dead wood of frondose trees. Winter. Germany, presumably Westphalia, near Münster (Brefeld).

There is a remarkable discrepancy between the statement that the basidia and spores are considerably larger than in *D. stillatus* and the measurements computed from the plate, the latter being much smaller than the measurements given in the text. This would lead to the conclusion that perhaps in none of the aspects mentioned are the spores of *D. lutescens* essentially different from those of Brefeld's interpretation of *D. stillatus*.

Neuhoff (*1936b:* 43, 49) has given a description and notes of his interpretation of Brefeld's species of which the following is a translation from the German:

Fruitbodies scattered or gregarious, at first almost orbicular, disk-shaped and appressed or with somewhat deflexed margins, soon forming few sharply contrasting folds then developing irregularly (often almost foliaceous), with age often confluent as in *D. deliquescens* [= *D. stillatus*] and with blunt-edged gyrose folds on the surface; individual fruitbodies 1–3 mm wide; colour pale yellow to golden yellow, in dried condition [fruitbody] often hardly visible. Spores 10–14(–16) × 4–5.5 μ, usually indistinctly septate, some more or less distinctly 4-celled.

On frondose wood.

Observations.—*Dacrymyces lutescens*, which grows only on frondose wood,[12] is the most polymorphous one of all the species of *Dacrymyces*. . . . The flat disk-shaped young stages . . . are distinguishable not only by the kind of wood but also by a difference in colour; in older specimens the shape of the fruitbodies is mostly distinctly different from those of [*D. stillatus*]. The spores of *D. lutescens* show a more pronounced cell-formation more often than those in *D. caesius* and *D. cerebriformis*; in this respect they then frequently agree with [*D. stillatus*].

I have given full information on both Brefeld's fungus and Neuhoff's interpretation of it *inter alia* in connection with the opinion (Kennedy, *1959b*) that *Dacrymyces lutescens* Bref. were merely a synonym of typical *D. deliquescens* [= *D. stillatus* sensu stricto] (p. 910), and *D. lutescens* Bref. sensu Neuh. a synonym of *D. minor* Peck (p. 908), the last a species originally described from North America and not previously reported from Europe (**114**). It is regrettable that Kennedy did not comment on these conclusions. It might have been expected that she would have invalidated Brefeld's dictum that his *D. lutescens* differed from his conception of *D. deliquescens* (=*D. stillatus*) by its inability to produce arthrospores even in culture, since, as one of the main features, she emphasized for *D. deliquescens* the production of "arthrospores in the basidiocarp or in separate sporocarps (rarely absent)"!

The general tendency is to disregard the size of the spores given by Brefeld (28 × 10 μ) as merely an error—an error of the unusually large magnitude of about one hundred per cent! The possibility remains that in reality the true *D. lutescens* also has larger spores than *D. stillatus*. After all, Brefeld did find some unusual species of *Dacrymyces* (cf. *D. longisporus*, *D. ovisporus*) and this may be one of them.

Summarizing, *D. lutescens* Bref. (sensu orig.) is either a species very close to *D. stillatus*—perhaps too close for convenient separation—, or, conceivably, a good

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[12] Implying that *D. delinquescens* sensu Neuh. (= *D. stillatus*) was restricted to coniferous wood, which is not the case (**120**).

species distinguishable from *D. stillatus* not only by its lack of arthrospore formation but also by its, on an average, considerably larger spores.

If this second alternative is not ruled out a *priori*, then the name *D. lutescens* Bref. must be reserved for this still hypothetical large-spored taxon, and in any case dropped for the species to which Neuhoff applied Brefeld's appellation. The name *D. lutescens* Neuh. (non Bref.), being a later homonym, is not available at all.

(**116**). *Dacrymyces cerebriformis* Bref.—The following description is drawn up from Brefeld's account (*1888a:* 153 *pl. 10 fs. 4–8*).

Fruitbody on wood, erumpent through the loose covering bark, 3–12 mm in diam. (from the figures), may reach considerable sizes, often gregarious, outstanding by the surface which is from the start thrown into abundant brain-like gyrose folds, when young pale yellowish; on hedges of birchwood the fruitbodies may cover inch-broad surfaces and then are somewhat more strongly coloured and occasionally showing a brownish tint in the centre of older portions, rather firm, not diffluent. Basidia still larger than in *D. lutescens*. Spores big, long, 25–28 × 8 μ [measurements presumably incorrect], more strongly curved and (from figure) more slender than in *D. deliquescens* [= *D. stillatus*] and *D. lutescens*, immediately after being shed becoming 3- (rarely 4–5-)septate. — The size of the spores calculated from the plate (*pl. 10 f. 6: 3, 4*) is different from that stated in the text, viz. 20 × 6.6–7.2 μ, the length measured in a straight line from base to top.

Preferentially on dead wood of *Betula*. Winter, Germany, presumably Westphalia, near Münster (Brefeld).

As conceived by Neuhoff (*1936b:* 43) the spores of this species would be 10–14 (–16) × 4–4.5 μ. This shows that he considered Brefeld's spore dimensions to be one hundred per cent too large.

If the spore measurements given by Brefeld are ignored, then Neuhoff's interpretation (*1936b:* 43, 50) seems to agree very closely with Brefeld's description and may very well be taken as correct. Neuhoff was not quite sure, however, that the species could be maintained in the future, perhaps implying that it might be too closely related to *D. lutescens* Bref. sensu Neuh.

Kennedy (*1959b:* 911) reduced *D. cerebriformis* (with a question mark) and *D. cerebriformis* sensu Neuh. (without a question mark) to *D. ellisii* Coker without any comment. The latter species she interpreted as a taxon not producing arthrospores; this feature has been contested (**121**).

(**117**). In publishing *Dacrymyces harperi*, Bresadola fell victim to Brefeld's spore measurements (if these are in fact incorrect, which is very likely). The description reads exactly like that of *D. cerebriformis*; Bresadola remarked of his new species, "Habitus *Dacryomycetis cerebriformis* et *D. lutescentis*, sed sporis duplo minoribus diversus" (**115**, **116**).

(**118**). *Dacrymyces longisporus* Bref. seems to be an extremely rare species which, as far as I am aware, has not been recorded since its description by Brefeld. Neuhoff (*1936b:* 39, 52) dismissed it casually as a synonym of *Dacrymyces chrysocomus*, but

this must be an error; apparently it was caused by a superficial likeness between the spores of the two species. In other respects *D. longisporus* is widely different, even in some important spore characters. The following description may serve to underline this conclusion; it was drawn up from Brefeld's original account (*1888a:* 158 *pl. 10 fs. 18, 19*).

Fruitbodies gregarious, closely resembling those of *D. ovisporus*, small, punctiform, hardly reaching the size of a small pin-head, vaulted, surface even, without any indication of folds, pale yellow. Spores oblong-cylindrical, adaxially flattened to depressed, the base somewhat attenuate, distinctly apiculate (after figures), 35–40 × 15 μ [presumably incorrect measurements], becoming 11–14-septate, with some longitudinal walls in central portion. — The size of the spores as computed from the figures (*pl. 10 f. 18: 6, 7*) is about 31.3–34.7 × 10–11 μ.

Old hedges. Germany, presumably Westphalia, near Münster (Brefeld).

This species was found mixed with *Dacrymyces ovisporus* Bref. (**119**); the fruitbodies of the two species could be distinguished only by looking at the spores. This strongly suggests that the fruitbodies of *D. longisporus* are the same as in *D. ovisporus*, pin-head shaped, pustulate, rather than disk- to cup-shaped and fairly large like in full-grown fruitbodies of *D. chrysocomus* to which species Neuhoff reduced Brefeld's fungus. Moreover, in the latter species the spores become not more than 8-septate (according to Neuhoff himself). Not only is the number of septa smaller, but no longitudinal walls develop in the spores of *D. chrysocomus*.

(**119**). *Dacrymyces ovisporus* Bref. is a rare species of which only four collections are on record for Europe. These were described by Brefeld (*1888a:* 158 *pl. 10 fs. 20, 21*) from Germany (type apparently not preserved), Laurila [1930 (AVa 10⁴): 2] from Finland, and Neuhoff (*1936b:* 40, 44) and Kennedy (*1959b:* 899) from Sweden. The descriptions supplement and correct one another. The species is now relatively well known and highly characteristic.

The following is an attempt to draft an 'original' description from Brefeld's account (*1888a:* 158 *pl. 10 fs. 20, 21*).

Fruitbodies apparently gregarious, closely resembling those of *D. longisporus*, no difference worth mentioning to be detected except microscopically. Basidia with vaulted top between the two sterigmata, which arise subapically instead of apically as in the other species of the genus. Spores (when shed) globose, resembling *Tremella*-spores, 20–25 × 15 μ [presumably incorrect measurements] (according to the figures, broad ovoid, with subeccentric apiculus), tardily divided by walls in various directions into numerous small cells. — Spore measurements computed from the figures agree with the recorded ones, the largest dimensions being 23 × 16.7 μ.

Old hedges, in the company of *D. longisporus*. Germany, presumably Westphalia, near Münster (Brefeld).

(**120**). In a previous paper (Donk, *1964*) I discussed at some length most of the 'old' species of *Dacrymyces*. One of the conclusions is that the type species of the generic name, viz. *Dacrymyces stillatus* Nees, is the same as the fungus that has been quite often called *D. deliquescens*. This is the one European species with three-septate spores

that occurs in nature in two states usually formed in the neighbourhood to each other, generally on coniferous, but fairly often also on frondose, wood. In my opinion Nees's protologue is based mainly on the basidiferous state, but the arthrosporous state is also traceable in his account. When Fries revalidated the name *D. stillatus* in the starting-point book ("Systema") he relied completely on Nees's protologue (except for the variety he admitted). This will explain why I felt obliged to restore the name *D. stillatus* in its orginal sense. It could have been rejected on the ground that it is a nomen ambiguum, a name used in many different senses. Since, however, it is the type species of the generic name *Dacrymyces* and considering that many names in the genus could be rejected for the same reason, I found it preferable to maintain the correct denomination.

To replace the name *D. stillatus* by *D. deliquescens* (**113**) would not be an acceptable solution; I feel obliged to dismiss the latter name as a nomen dubium and certainly not likely to be synonymous with *D. stillatus* in the present sense.

Neuhoff conceived *D. deliquescens* sensu auctt. [= *D. stillatus* sensu stricto] as a strictly "Nadelholz"-inhabiting species; when he was later confronted with arthrospore formation on frondose wood, he placed the "Laubholz" element of the species in a special form of *D. lutescens* Bref. (f. *subdeliquescens*). When he cited Brefeld's conception of *D. deliquescens* correctly in the synonymy of his own interpretation of *D. deliquescens* (Neuhoff, *1936b:* 44) he must have overlooked that Brefeld stated that 'one looks hardly ever in vain for *D. deliquescens* in winter during rainy weather in any place where dead frondose wood is copiously present.'

I wish to emphasize that arthrosporous fruitbodies often occur on frondose rather than only on coniferous wood, as Neuhoff originally believed: if there is only one arthrospore-forming species, then it occurs on both kinds of wood. This one species must then be called *D. stillatus* rather than *D. deliquescens* (cf. Donk, *1964:* 2–6), while *Dacrymyces lutescens* f. *subdeliquescens* Neuhoff, later instituted for the arthrospore-forming forms on frondose wood, must be referred to *D. stillatus* as a synonym. The publication of this form shows that in practice Neuhoff eventually used only a single character to differentiate between *D. stillatus* and *D. lutescens*, the substratum being coniferous wood in the former, frondose wood in the latter.

The conception that *D. stillatus* is based *only* on the arthrosporous state goes back to Corda (1838 I. 2: 32); it was vigorously defended by Bonorden. Thus the fiction that *D. stillatus* was the correct name for the imperfect state was later on accepted by many authors.

(**121**). Neuhoff (*1936b:* 48) listed *Dacrymyces ellisii* Coker as a synonym of his conception of *D. lutescens*. This is at variance with Kennedy's views. She identified *D. cerebrifomis* sensu Neuh. with *D. ellisii*. Some years ago Olive [1958 (BTC 85): 108] examined the type of *D. ellisii* and found that it produced arthrospores ("catenulate oidia"). He concluded that in other respects also it compared favourably with *D. deliquescens* (= *D. stillatus*). A carefully study of Coker's protologue, supplemented with Olive's data, would seem to require the equation of *D. ellisii* with *D. lutescens* f. *subdeliquescens* Neuhoff and with *D. stillatus* Nees.

(**122**). After E. L. Tulasne (*1853:* 211–219 *pl. 12 fs. 13–19*) had misapplied the name *Dacrymyces stillatus* (**120**) to a species with many-septate spores, it was often used either for a mixtum compositum (details of these spores were engrafted on earlier published 'macroscopic' descriptions: Berkeley, Fries, Schroeter) or for other species with similarly septate spores. The confusion thus proliferated has not yet been adequately disentangled.

Dacrymyces stillatus Nees per Fr. sensu Bref.—The following description was compiled from Brefeld's somewhat lengthy account (*1888a:* 155 *pl. 10 fs. 9–11*) of the species he erroneously called *D. stillatus*.

Fruitbodies often gregarious and in rows, erumpent through bark, after removal of bark appearing to consist of a head and a stalk-like prolongation, not conspicuous because of colour which is duller and darker than in the other species of the genus (known to Brefeld), more reddish then yellowish; head as a rule globular with superficial folds, about 1.5–3.5 mm in diam. (after figures); stalk-like prolongation irregular, its length depending on the thickness of the bark, colourless; context solid, firm, cartilaginous-gelatinous; young fruitbodies sterile. Basidia large. Spores larger and less curved than in *D. cerebriformis*, 25–30 × 12 μ [presumably erroneous measurements], becoming 7–9-septate. — The single so far not-germinating spore depicted (*pl. 10 f. 10*: 1) measures about 20 × 6.6 μ (relying on the indicated magnification), hence considerably less than the text would suggest.

On fallen branches of *Pinus silvestris*. During the cold season. Germany, presumably Westphalia, near Münster.

Brefeld himself considered this species to be the same as that previously described by E. L. Tulasne (*1853:* 219) under the name *Dacrymyces stillatus* Nees (= *D. tulasnei* Neuhoff). Not only was the name *D. stillatus* misapplied in both cases (cf. Donk, *1964:* 2–6) but the identity of the fungi described by Brefeld with *D. tulasnei* is also in doubt. A notable difference seems to be that the mature fruitbodies of Brefeld's species do not become concave and almost cyathiform when they form the hymenium.

The citation of "*D. stillatus* Bref." as a synonym of *D. deliquescens* (= *D. stillatus* sensu orig.) by Neuhoff (*1936b:* 44) is evidently a slip.

Both the consistency and the stalk-like prolongation as mentioned by Brefeld might be taken as pointing in the direction of *Ditiola*. As conceived by Kobayasi (*1939b:* 106, 107) this genus has thick-walled hyphae except for those of the subhymenial region, and a more or less pronounced stalk. Both characters of Brefeld's fungus may, however, also be encountered in *Dacrymyces:* a cartilaginous-gelatinous context (but thin-walled internal hyphae throughout) occurs in some species of the than genus *Dacrymyces*. The stalk might well be induced by the substratum, owing its existence and length to the presence of the bark through which the fruitbodies must grow.

There is a remote possibility that *Septocolla stipitata* Bon. is this species.

Ditiola

(**123**). Recently Kennedy (*1964*) published a monograph of this genus in which she accepted a broadly conceived *Ditiola radicata*. She listed as synonyms *Dacryopsis brasiliensis* Lloyd, *Dacryomitra brunnea* G. W. Mart., *Dacrymyces cupularis* Lloyd sensu Brasf., *Ditiola fagi* Oud., *Coryne gyrocephala* Berk. & C., *Ditiola nuda* B. & Br., *Tremella stipitata* Peck, and *Dacrymyces stipitatus* (Bourd. & G.) Neuh., all names, except for *Ditiola nuda* and *Dacrymyces stipitatus*, based on extra-European material. As some of these identifications are very doubtful, if not outright erroneous, I have taken no account of names not based on European types. *Ditiola nuda* and *Dacrymyces stipitatus* are left in *Dacrymyces* until further evidence is published showing that they do really not belong to that genus.

Femsjonia

(**124**). *Cyphella friesii* Weinm. ≡ *Guepinia cyphella* Fr. is a 'lost' species not recognized by recent mycologists who have refrained from giving an opinion. To me the description strongly suggests *Femsjonia pezizaeformis*; had the protologue called the hymenium yellow instead of 'fuscescent' I should not have entertained much doubt. Fries's remark is significant: "Non liquet utrum *Guepinia* an *Cyphella*, hujus forma, substantia vero cartilatineo-gelatinosae *Guepiniae*".

Guepiniopsis

(**125**). Recently McNabb (*1965c:* 160–162) acted as if the names "*Guepiniopsis torta* Pat." and "*Dacrymyces contortus* Ces." were names based on specimens of *Guepiniopsis buccina*. From a nomenclative point of view this is misleading. I repeat what Donk (*1964:* 12–13) wrote about these names:

"For some time Fries (1849: 359, 470) believed most species of *Dacrymyces* to be mere states of discomycetes referable to *Calloria* Fr. Some years later, with this in mind, Cesati (1855 [in Rab. F.e.]: No. 1948) associated what was presumably a species of *Dacrymyces* (lacking in the copy I studied) with the pezizoid *Guepiniopsis buccina*, and referred both to a single species. His specimens were distributed by Rabenhorst with the following labelling: "1984. *Dacrymyces contortus* Fr. / Confer Fr. Summ. veg. p. 359 et 471 de evolutione *D. contorti* in *Calloriam deliquescentem*, de qua vestigia reperiuntur in specimin. sub b adlatis." This accompanying reference also removes all doubt that 'contortus' was a mere error for 'tortus' which, however, resulted in such a different epithet that it seems advisable to consider it a misapplied isonym: *Dacrymyces contortus* Ces. ≡ *D. tortus* (Willd.) per Fr. (No descriptive matter was added by Cesati.) De Bary (1884: 62) transferred "*Dacrymydes contortus* Rabenh. Herb. Mycol. Nr. 1984" to *Guepinia* Fr., however, without adequate explanation.

"There is no doubt that this was the source of Patouillard's misinterpretation which he perpetuated initially as "*Tremella torta* Willd. (*Dacrymyces tortus* Fr.)" (Doassens & Patouillard, 1883 [(Rm 5)]: 96), and, later on as *Guepiniopsis tortus* when he introduced the new genus *Guepiniopsis* for it (Patouillard, 1883 [T.a. 1]: 28 *f. 62*). However, some years afterwards he seems to have become convinced of having committed an error of determination and started to call the fungus *Guepiniopsis merulina* (Patouillard, 1887: 159). . . ."

In my opinion '*Guepiniopsis torta* Pat.' and '*Dacrymyces contortus* Ces.' must both be cited in the synonymy of *Guepiniopsis buccina* as '*Guepiniopsis torta* (Willd. per Fr.) Pat. sensu Pat.' and '*Dacrymyces contortus* Ces. sensu Ces.' to indicate that the types of these names belong elsewhere. Moreover it is incorrect to cite '*Guepiniopsis contorta* (Ces.) de Bary' as a "nom. nud." under *Guepiniopsis buccina*. The recombination was validly published by a reference to the basionym (as cited above), but simultaneously misapplied: hence, '*Guepiniopsis contorta* (Ces.) Bary sensu Bary'. On this check list I have entered these names in accordance with the above conclusions.

EXOBASIDIALES

EXOBASIDIACEAE

Exobasidium

(**126**). This genus proved to be a most difficult one to harness for the present check list, partly because of incomplete descriptions, partly because specific delimitations vary from author to author. Thus Fuckel, Burt (*1915*), and Savile (*1959*) have conceived *E. vaccinii* as an inclusive species, basing their conceptions mainly on the morphology of the spores and to a lesser degree of the basidia and sterigmata. Others have also devoted their attention to the different types of infection: for instance, Juel (*1912*) and Nannfeldt. I have allied myself with this second group.

The various symptoms may be classified thus:

(i) Localized infections. (a) Small spots without hypertrophy of host tissue. If such spots appear thickened, this is caused by the thick hymenium developing beneath the cuticula. Examples, *Exobasidium ledi* and *E. dubium*. (b) Galls. These consist of more or less irregular spots to more general infections, even of whole shoots, resulting in deformations and/or excrescences. The affected portions always show considerable hypertrophy of tissue and are notably thickened when still fresh. Examples, *E. vaccinii*, *E. oxycocci*.

(ii) Systemic infection, most often affecting whole shoots without causing considerable increase in thickness of the host organs. The shoots may be enlarged or develop more abnormally into witches' brooms. Examples, *E. myrtilli*, *E. vaccinii-uliginosi*.

Originally new specific names were usually based on macroscopic features (viz. the symptoms caused by the infection) and the identity of the host. A modern species conception should also take into account certain microscopical details (especially of the spores and the basidia) and when possible cultural characters as well. It is now generally accepted that at least some species may occur on different hosts and induce galls that may vary in appearance. Inversely, some host species may be infected by more than one species of *Exobasidium*.

(**127**). In Europe most species are restricted to Ericaceae. Those that occur on hosts of other families may well be congeneric, although this is not always even approximately certain. Some minor amputations of the genus were the exclusion of *Exobasidiellum* Donk (**75**), a monotypic genus on Gramineae; and more recently *Articomyces* Saville, which was introduced for *Exobasidium warmingii* parasitizing certain species of *Saxifraga* (Saxifragaceae), discussed below (**141**). In Europe there are only a few species that do not attack Ericaceae: these are found, except for those ones on *Saxifraga*, on Anacardiaceae, Lauraceae (**148**), Rutaceae, and (in the case of a doubtful species) Aquifoliaceae.

Outside Europe the genus is also known from Empetraceae, Theaceae, Epacridaceae, and Symplocaceae, and perhaps some other families, provided one wishes also to consider certain very insufficiently described species.

(**128**). I seize this opportunity to plead for the adoption of some standardized method of measuring the spores for purposes of comparison. By some authors spores have been used as the most important source from which specific characters are derived. Usually the spores studied and measured have been taken directly from the galls and the like, and usually no mention was made of the medium in which the spores were studied; no doubt various media, such as water and KOH solutions have been used. Savile (*1959:* 644) observed the spores in lactophenol. A generally acceptable standard method for arriving at comparable results may be the one used by Sundström (*1964:* 55). He placed diseased portions of a host plant in petri dishes at 20° C in which the spores could be shed on malt agar. After three hours the spores were measured. (The spores with the shortest latent germination period germinated after three hours.) Mean values were based on 15–40 spores in each case. In some species the difference between Sundström's and Juel's findings are astonishingly large.

(**129**). Savile (*1959:* 642, 646, 649) rejected *Exobasidium angustisporum* without really discussing it ("fully typical *E. vaccinii*"); he conceived *E. vaccinii* in a very broad sense.

The basis for entering the species as valid on the present check list is that it was recorded from Sweden by Sundström (*1964:* 10), who indicated that cultures were isolated from systemic attacks of *Arctostaphylos alpina* (= *Arctous alpina*).

(**130**). The number of species described in the genus *Exobasidium* from species of *Rhododendron* (inclusive of *Azalea*) is proportionately high. The following list enumerates these species on a world-wide basis; the entries consist further of the date of publication, the type locality (country), and the host. The names of host species that periodically shed their leaves (the so-called azaleas) are preceded by an asterisk (*).

Exobasidium azaleae Peck 1873 (U.S.A., New York), on **Rhododendron nudiflorum* (L.) Torr., *E. burtii* Zeller 1934 (U.S.A., Oregon), on *R. albiflorum* Hook.,

E. butleri H. & P. Syd. apud Syd. & Butl. 1912 (India), on *R. arboreum* Sm.,
E. canadense Savile 1959 (U.S.A., North Hampshire), on **R. canadense* (L.) Torr.,
E. caucasicum Woronich. 1920 (U.S.S.R., Transcaucasia), on *R. caucasicum* Pallas,
E. decolorans Harkn. 1884 (U.S.A., California), on **R. occidentale* A. Gray,
E. discoideum J. B. Ell. 1874 (U.S.A., New Jersey), on **R. viscosum* (L.) Torr.,
E. dubium Rac. 1909 (Poland), on *Azalea pontica* L. [= **R. flavum* G. Don] = **R. luteum* Sweet,
E. hemisphaericum Shirai 1896 (Japan), on *R. metternichii* Sieb. & Zucc.,
E. japonicum Shirai 1896 (Japan), on *Azalea indica* L. = **R. indicum* (L.) Sweet,
E. magnusii Woronich. 1913 (U.S.S.R., Caucasia), on **R. flavum* = **R. luteum* Sweet,
E. pentasporium Shirai 1896 (Japan), on **R. indicum* (L.) Sweet,
E. rhododendri (Fuck.) Cramer apud Geyler 1874 (Switzerland), on *R. ferrugineum* L.,
E. rhododendri Quél. 1886 (France), on *R. ferrugineum* L.,
E. shiraianum P. Henn. 1902 (Japan), on *R. metternichii* Sieb. & Zucc.,
E. vulcanicum Rac. 1900 (Indonesia, Java), on *R. javanicum* (Bl.) Bennett and *R. retusum* (Bl.) Bennett,
E. yoshinagai P. Henn. 1902 (Japan), on *R. tosaense* Makino,
E. zeylanicum Petch 1909 (Ceylon), on *R. arboreum* Sm.

The six names (epithets spaced) based on, or recorded from (*E. discoideum*), European material collected from indigenous hosts, are *E. caucasicum*, *E. dubium*, *E. magnusii*, *E. rhododendri* (twice), and *E. discoideum*. According to Siemaszko [cited by Trotter 1926 (SF 24): 1325] and Woronichin (*1926:* 296) *E. dubium* and *E. magnusii* are synonymous, a conclusion that, judging from the published descriptions, seems correct. Also synonymous are the two homonyms (*E. rhododendri*). This would leave the following four species as occurring wild in Europe: *E. caucasicum* and *E. rhododendri* (Fuck.) Cramer, both on evergreen species of *Rhododendron*, the first systemic, the second causing galls; and *E. dubium* (small spots) and *E. discoideum* (marginate galls) on deciduous-leafed species (azaleas). I have not gone deeply into the matter and do not know whether these names should not perhaps be synonymized with other names listed above or not. *A priori* it is not likely that they are to be taken as synonyms of *E. vaccinii* (see also below). The determination of the European material as *E. discoideum* is still in need of critical comparison with material from North America, where the type was found. For the alien *E. japonicum*, see (**131**).

Certain authors have considered *E. japonicum* and *E. rhododendri* as belonging to *E. vaccinii*. Graafland (*1960:* 364–365) found that *Vaccinium vitis-idaea* was not infected by *E. japonicum*, and that conversely azalea cultivars were not infected by *E. vaccinii*. This difference in pathogenicity, added to certain differences between their cultures, led him to regard the two as specifically distinct. He also found cultural differences between *E. japonicum* and *E. rhododendri* and between *E. rhododendri* and *E. vaccini*, which led him to assume that *E. rhododendri* "must also be considered as a physiological specialized form" (Graafland, *1960:* 365).

(**131**). *Exobasidium discoideum* was described from North America where it was found on *Rhododendron viscosum* (L.) Torr. It was reduced to the synonymy of *E.*

vaccinii by Burt and Savile. In Europe the name has been applied to what may appear to be two different species of *Exobasidium*. Petri (*1907*) referred to it the species that produce galls in the form of deformed host portions on cultivated azaleas, viz. to what is considered an alien and called *E. japonicum* on this check list. Other authors (P. Magnus, Raciborski, Woronichin) have applied the name to the species that occurs on a horst indigenous to Europe, *Rhododendron luteum* Sweet (=*Azalea pontica* L. = *Rhododendron flavum* G. Don), on which it causes galls of a quite different habit, viz. more or less marginate and flattened excrescences attached to the leaves by a narrow, central base. The determination as *E. discoideum* would appear to be the correct one or at least the one expressing most closely the relationship of the wild European form. To settle this question comparison of specimens from the two continents is desirable. I have not come across reports of *E. japonicum* in its usual greenhouse expression as occurring on wild European azalea species.

(**132**). *Exobasidium dubium* has been reported only from Europe, where it occurs on *Rhododendron luteum* Sweet. One of the localities (Caucasia) coincides with the main distribution area of the host, the other (Sandomier forest, Poland) is an isolated and restricted locality. Like in *E. ledi* the fungus causes small yellow spots without hypertrophy of host tissue; critical comparison of the two species is recommended.

Raciborski (*1909*) hesitated to consider *E. dubium* distinct from *E. discoideum* (**131**), which was also found in the same locality and even on the same plant. He thought it conceivable that the two were merely different expressions of the same species, their microscopical details being much the same. In view of Richards's findings (*1896*) in connection with *E. andromedae* Peck (**138**) such a possibility should not be rejected without careful consideration. In the latter case, however, the differences are between two types of galls, viz. localized deformations of the type as it occurs in *E. vaccinii* against often enormous bag galls, while in the case of *E. dubium* and *E. discoideum* the differences are between non-hypertrophied small, yellow spots against galls in the form of quite notable and characteristically shaped excrescences.

The species was described twice, once from Poland (*E. dubium*) and once from Caucasia (*E. magnusii*). Woronichin (*1926:* 296), the author of the second name, considered *E. dubium* a nomen nudum, and, therefore, rejected it. This was not correct. When publishing *E. dubium* in his "Mycotheca polonica", Raciborski, it is true, did not accompany the name by a description, but he referred to his description of the fungus as *Exobasidium* sp. in another, previous publication (Raciborski, *1909:* 388).

Exobasidium dubium was also called *E. vaccinii* f. *rhododendri-flavi* Bubák (nomen nudum).

(**133**). *Exobasidium rhododendri* is not rare in Europe on the native evergreen species of *Rhododendron*. Apparently, however, it does not easily invade the extraneous evergreen species so profusely cultivated in various regions of western Europe.

I have come across remarkably few records in which these extraneous species and hybrids were reported as being infected by *E. rhododendri*, and these records contained so few descriptive details that it is impossible to form a well-founded opinion about the parasite. An early record is by Cooke [1879 (GCh 12^{II}): 119]: "small apple-like galls on the leaves and shoots of × *Rhododendron Wilsoni*." Another is by Fockeu (*1894:* 355), who found galls on *Rhododendron* "*dadouricum*" [*R. dauricum* L.]. — See also (**130**).

(**134**). *Exobasidium* galls are also very common in Europe on cultivated, extra-European azaleas; they have been recorded from around the year 1900 on. Assuming that only one parasitic species is involved (which seems the most likely premise), the question of its correct name should now be discussed, but since the fungus is in all probability an alien this point will be only briefly touched upon here. The name now most often used is *E. japonicum*; its hosts are various cultivars generally referred to as *Azalea obtusa* and *A. indica* by horticulturists. Other names applied to this fungus are *E. azaleae* and *E. discoideum*, both earlier published names, but because the identity of these species with *E. japonicum* is still highly questionable for the present they are not taken into consideration. The use of the name *E. pentasporium* would appear an evident misdetermination; this name was given to a systemic parasite (causing witches' brooms) that produces the basidia on spots that are not accompanied by deformations of the leaves on which they appear, while *E. japonicum* produces true galls (deformations). See also (**130**).

(**135**). The fact that two taxa were called *Exobasidium andromedae* has led to the assumption that they were identical and to an interchange of the author's citations (P. A. Karsten and Peck), for instance by Migula, Ulbrich, and other authors. *Exobasidium andromedae* Peck, originally described from *Andromeda ligustrina* from North America, produces (sometimes enormous) bag galls, while *E. andromedae* P. Karst. (≡ *E. karstenii*), originally described from *A. polifolia* from Finland, produces systemic infections. Burt (*1915:* 646, 647, 649) reduced both to the synonymy of *E. vaccinii*. In this he was followed by Savile (*1959:* 646). The fact that Nannfeldt [1939 (LNF 11–12): 34 No. 589; 1958 (LNF 51–52): 29 Nos. 2558, 2559] maintains *E. karstenii* as a distinct species, strongly supports the correctness of the separate treatment on this check list.

(**136**). It would appear from Sundström's data (*1964:* 55–57 *f. 19*) that the size of the spores of *Exobasidium vaccinii* and *E. myrtilli* (each apparently comprizing several 'host-races') have different ranges, although there is considerable overlapping. That the two taxa are very likely different species is indicated not only by this but also by the behaviour of the basidiospores on a given agar substratum (forming only conidia in *E. vaccinii* and mycelia in *E. myrtilli*), plus the 'double infections' occasionally observed in *Vaccinium vitis-idaea*, bearing localized infections of the former species on leaves that also showed the systemic infection of the latter (Sundström, *1964:* 10. 11, 53–54 *f. 4*), and also by several other arguments.

(**137**). When Rostrup first published the name *Exobasidium oxycocci* (1885) he had not yet made up his mind about the rank of the taxon, "Naermere Undersøgelser maa afgjøre om den rettest skal betragtes som en Varietet eller en egen Art: *E. oxycocci*." Hence, he published the name as a provisional name (nomen eventuale). The fact that Rosenvinge, in the French résumés at the end of the volume (separately paged; p. 26), rendered this as, "Sur l'*Oxycoccus palustris* j'ai observé une déformation particulière en grande quantité, née sans doute d'une espèce particulière: *Exobasidium Oxycocci* qui . . .", apparently makes no difference since it would seem to be a clear case of 'incidental mention'. Another instance of 'incidental mention' is in my opinion that by von Tubeuf (1895: 440).

Nannfeldt [1958 (LNF 51–52): 30] considered Shear (1907) to be the author who first validly published Rostrup's name, but a year earlier Rostrup himself had again published the name, this time without evincing any doubt about the specific status of *E. oxycocci*.

(**138**). *Exobasidium vaccinii* has often been interpreted as a more or less inclusive species. This is not the place for an extensive discussion on this question. Suffice it to state that it would seem as if Burt (*1915*) and Savile (*1959*) went too far in lumping together a good number of the species treated as distinct on this check list. As to European species, pending further observations, *E. japonicum* Shirai (supposed to be an alien) (**131**, **134**), *E. angustisporum* (**129**), *E. cassiopes*, *E. karstenii* (≡ *E. andromedae* P. Karst.), *E. ledi*, *E. myrtilli* (including *E. vaccinii-myrtilli*) (**136**), *E. oxycocci* (**137**), and *E. rhododendri* (**133**) are all listed separately, while in agreement with these authors as well as with Juel and Nannfeldt only *E. cassandrae* is reduced to the synonymy of *E. vaccinii*. Several other names listed as synonyms by either Burt or Savile or both, based on extra-European collections and not reported from Europe, have been omitted from the synonymy of *E. vaccinii:* these are *E. andromedae* Peck (**135**), *E. peckii* Halst., *E. agauriae* P. Henn., and *E. parvifolii* Hotson. There are indications that at least some of these may also prove to be distinct species.

Following Fuckel, Brefeld (*1888c*), too, favoured a rather inclusive conception of *Exobasidium vaccinii*. From the introductory remarks to this species it appears that apart from *E. vaccinii* he also included *E. myrtilli* and *E. rhododendri* under the first name. It was not stated from which of these elements his cultures were derived so that he is not cited on the check list proper, although it is most likely that he worked with *E. vaccinii*.

In a much-quoted paper by Richards (*1896*) the conclusion was advanced that *Exobasidium vaccinii* and *E. andromedae* Peck cannot well be distinguished, a conclusion based on infection experiments, and, as far as I am aware, never seriously questioned. It is not surprising that later the existence of two species of the same name (*E. andromedae* Peck and *E. andromedae* P. Karst. ≡ *E. karstenii*) led to confusion. Since *E. andromedae* Peck (like *E. vaccinii*) is based on a gall producing fungus, typically inducing large bag galls on *Andromeda ligustrina* (= *Lyonia ligustrina*), while *E. andromedae* P. Karst. is a systemic parasite, this has tended to make Richard's conclusion still more important.

What Richards's actually did was to demonstrate that one type of galls found on *Andromeda ligustrina* and closely resembling those caused by typical *E. vaccini* on *Vaccinium vitis-idaea* was produced by the same fungus that caused the other type of galls on the same host (bag galls). His infection experiments did not include spores derived from indisputable *E. vaccinii* in the strictest sense! From the data presented the only conclusion that appears justified is that "the form and extent of the hypertrophy depends both on the host and the age of the tissues affected. The older tissues do not respond so readily to the stimulation of the parasite, and the result is a more local hypertrophy [referred to as the *E. vaccinii* galls] or none at all." The identity of *E. andromedae* Peck with *E. vaccinii* sensu stricto was not proven, but strong evidence was furnished that the same fungus could produce different types of galls (inclusive of merely somewhat thickened spots). Spores from the 'vaccinii' type of galls experimentally transferred from *Andromeda ligustrina* also produced galls on *Gaylussacia resinosa* (= *G. baccata*). This second set of experiments tends to prove that one species or 'race' of *Exobasidium* may occur on more than one host species or genus.

(**139**). *Exobasidium arctostaphyli* was described from *Arctostaphylos pungens* from California, and originally stated to have spores 10–12 × 4–5 μ. These measurements are apparently incorrect and material collected by Harkness, the author of the species, has yielded larger spores: compare Burt (*1915:* 647; 12–18 × 3–5 μ) and Linder (1947: 272 *f. 5f, fide* Savile, illustrated about 15–20 × 4–5 μ). Savile (*1959:* 649) retains the taxon as a variety of *E. vaccinii, inter alia* on the basis of some collections from *Arctostaphylos uva-ursi*, for a systemic parasite with spores measuring 12.5–16.5 × 3.3–5.0 μ.

Lind (1913: 350, 352) reported *E. arctostaphyli* as common on *Arctostaphylos uva-ursi* in Denmark and in the neighbouring countries as well. He did not describe it in detail and it is possible that in reality he was dealing with either typical *E. vaccinii*, which species has been recorded from *A. uva-ursi* from central and northern Europe, or with other fungi quite different from *Exobasidium* (cf. Juel, *1912:* 262–363, 369–370). Hence I am not prepared to record *E. arctostaphyli* as a European species.

(**140**). The curious galls formed on the stem of the species of *Laurus* in the Mediterranean and the Canary Islands are usually thought to be induced by the action of the fungus described as *Exobasidium lauri* Geyler. Similar associations are also known from Java, Ceylon, and Japan on other Lauraceae (*Cinnamomum*). Our knowledge of all these fungi themselves, however, is still too insufficient to decide whether or not they belong to *Exobasidium*. As for the European species, opinions differ about whether this fungus is really the causative agent of the galls; compare Geyler (*1874*), Baldini (*1886*), Baccarini (*1913*), von Tubeuf (*1913*). It would seem that the present concensus is that the galls are indeed caused by the fungus.

Previous to the publication of *Exobasidium lauri* Geyler the galls were also described by Brotero as *Clavaria lauri*. It is quite likely that he described not only the galls but also the fungus ("... tota planta demum Maio et Jul., polline albido tecta"), in

which case *Clavaria lauri* Brot. 1804 (d.n.) ≡ *Calocera lauri* (Brot.) per Fr. 1832 would be the first validly published name for the fungus. It cannot be recombined into a correct name because the recombination would be pre-occupied by *Exobasidium lauri* Geyler, but were the species to be removed from the genus, the name *Calocera lauri* should be taken seriously into consideration.

(**141**). It may well be doubted whether it was justifiable to segregate *Articomyces* (based on a single species, *Exobasidium warmingii*) from *Exobasidium* in its still current sense, which is rather wide if the range of its hosts is considered (**127**). Under these circumstances to be generally acceptable the segregation from *Exobasidium* of a species parasitizing Saxifragaceae should have a sound morphological foundation. This is so far hardly the case. Savile states that "in the present fungus the basidia arise from a stroma as in *Kordyana*, but merge in a fascicle either through a stoma or between two epidermal cells; the mycelium is both inter- and intracellular; paraphyses are lacking and conidia are present, as in *Exobasidium*". The 'stromata' alluded to are apparently little more than accumulations of little specialized hyphae (not further described) in the space allowed by the substromatal chambers. This condition of the mycelium, as well as that of basidia emerging in fascicles, is not truly unique, since in certain species of *Exobasidium* the same is true: *E. hesperidum* Maire (on a species of Anacardiaceae) and *E. unedonis* Maire (on a species of Ericaceae) are examples. Basidia, number and shape of the sterigmata, spores (shape, septation), and conidia also suggest only *Exobasidium*. The family to which the host belongs seems the strongest of the presented arguments for maintaining the genus, but in view of the series of families on which *Exobasidium* (as currently conceived) occurs this may not be sufficient.

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(**ObL**), Op. bot., Lund — (**ÖbZ**), Oesterr. bot. Z. — Opiz **1852,** Seznam rostl. květ. české — Oud. **E.,** Enum. syst. Fung. — Overh. **1942,** Polyp. Pennsylv. Poria (*in* Bull. School Agric., agric. Exper. Stn, St. Coll. Pennsylv. No. 418). — (**ÖVS**), Öfvers. K. VetAkad. Förh. [Stockholm].

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Alphabetical index,
including names omitted from the check list proper

The following list consists of two kinds of indices, (i) one of the names admitted to the check list proper (pp. 151–207), and (ii) one of names that were left out of it.

Ad (i). Names in roman type are those accepted on the 'Check list'. Author citations are quoted only when needed to avoid ambiguity. When two or more generic names follow a specific epithet, the one accepted on the 'Check list' comes first and is in roman type; the rejected generic names that were, or have been, combined with the epithet follow in alphabetical order and are in italics. Some of the latter are preceded by an asterisk (*) which denotes that the combination was not validly published and is not mentioned on the 'Check list'. The genera are treated on the 'Check list' proper in alphabetical order, each in one of the six sections captioned, in this order, Septobasidiales, Auriculariineae, Tremellineae, Tulasnellaceae, Dacrymycetales, and Exobasidiales. The section in which a genus is placed is mentioned between brackets after the correct generic name.

Examples.—

"*abietinus* Pers., *Dacrymyces*, *Tremella* = Dacrymyces stillatus." This means that the epithet 'abietinus Pers.' in specific combinations with the succeeding generic names will be found listed on the 'Check list' as synonyms of *Dacrymyces stillatus.*

"adpressa, [Dacrymyces], *Septocolla*." This measn that *Dacrymyces* is the genus accepted for the species (the square brackets indicating that the specific combination has not actually been made), and that the combination with *Septocolla* is rejected as being incorrect.

"Achroomyces (Auriculariineae)" means that *Achroomyces* is listed as a genus of Auriculariineae.

Ad (ii). 'Omitted names'. These are interspersed between the entries of index (i). They form a very mixed lot given either (a) to taxa that have been placed wrongly in genera whose names are typified by species of the hymenomycetous Heterobasidiae or (b) to a selection of taxa that have been thought to belong to these Heterobasidiae. In each case some information is added (as far as available) on the current (not necessarily correct) name and the taxonomic position of the taxon.

Some exceptions are made. Specific combinations with *Auricularia*, *Epidochium*, *Rhizoctonia*, and *Stilbum* of taxa that are not now included in the Heterobasidiae are not listed. These combinations with *Auricularia* will be taken into consideration in the check list devoted to the Aphyllophorales now in preparation. The combinations with *Epidochium*, *Rhizoctonia*, and *Stilbum* that are left out do not belong to the Basidiomycetes (as far as is known). The pseudospecific (but essentially non-binomial) names given to 'Orcheomycetes' are also left out in contradistinction to combinations with the validly published generic name *Orcheomyces*.

abietina, -us Pers., *Dacrymyces*, *Tremella* = Dacrymyces stillatus; sensu J. Schroet. = *Dacrymyces* spp. (mixtum compositum; not listed); sensu P. Karst. = Dacrymyces stillatus sensu P. Karst.; sensu Coker = *Dacrymyces* sp. (not listed)

abietinus P. Karst., *Dacrymyces*, *Hormomyces* = Dacrymyces stillatus

abietis, *Corticium*, *Thelephora acerina* forma = Sebacina calcea

abromeitii, *Exidia*, Neuh. 1935 (former East Prussia) (syn.) ≡ *Exidia cartilaginea* f. *abromeitii* Neuh.

Achroomyces (Auriculariineae)

Acrospermum [Tode sensu Pers., exclusive of type = *Acrospermum*] Pers. 1797 C.: 220/88 (nom. anam.) (d.n.), not ~ Tode 1790 (d.n.) per Fr. 1822; not ~ S. Schulz. 1863; *Tremella* sect. ~ (Pers.) per Pers. 1822; lectotype: *Clavaria galeata* Holmskj., *q.v.*

acrospermum, *Tremella*, Nees 1816 (d.n.) ≡ *Acrospermum dubium* Pers. (nom. anam.) ≡ *Tremella dubia* (Pers.) Pers., *q.v.*

Actinomyce F. Meyen 1827 [1958 (Ta 7): 165]; monotype: *A. horkelii* F. Meyen, *q.v.*

aculeiformis, *Calocera*, *Clavaria*, *Tremella* = Calocera cornea

acuorum, *Dacrymyces*, Fautr. & Roum. in Roum. 1890 (Rm 12): 61 (France) (nom. anam.).—Fide Höhn. 1909 (SbW 118): 1238, 1239 = *Linodochium hyalinum* (Lib.) Höhn. — Deuteromycetes.

acuum, *Dacrymyces*, Lasch in Rab. 1844 Kl.: No. 571 (Germany).—Nomen dubium.

aderholdii, *Moniliopsis*, *Rhizoctonia* = Thanatephorus cucumeris

admirabilis, *Peniophora*, Burt 1926 (AMo 12): 304 (U.S.A., New York) (nom. conf.).—Fide Rog. & Jacks. 1943 (Fa 1): 310 = *Tulasnella bifrons* Bourd. & G. (p. 191), growing over the surface of overwintered fructifications of one or more "thelephoraceous" fungi.

adnata, *Tremella*, L. 1755: 430 (Sweden) (generic name n.v.p.); *Merrettia* (L.) per S. F. Gray 1821.—Nomen dubium. Fide Ag. 1824: 28 = *Chaetophora plana* Ag., apparently another nomen dubium. Algologists also recognize a '*Tremella adnata* Huds.' but this is in error because Huds. 1778: 565 merely records Linnaeus's species for England. *Tremella adnata* 'Huds.' became *Gloeocystis adnata* ("Huds.") Naeg., Chlorophyceae. Drouet & Dailey 1956 (BBU 12): 166–167 think that *T. adnata* L. = "Lichen ?"

adpressa, [Dacrymyces], *Septocolla*

adpressus, *Dacrymyces*, Grogn. 1863: 200 (France), not ~ Y. Kobay. 1939.—Nomen dubium. Höhn. 1908 (SbW 117): 1026 thought of *Tremella mesenterica* Retz. per Fr.

aequale, Exobasidium

affinis, *Tremella*, Retz. 1795: 294 (d.n.) per Steud. 1824.—A binomial name for "*Agaricum lichenis facie aureum*. Mich. p. 124, 11 ?" of O. F. Müll. 1780 (Fd 5 / F. 14): 8 *pl. 840 f. 1*, which Fr. 1821: 441 referred to *Thelephora evolvens* Fr. per Fr. ≡ "*Corti-*

cium" *evolvens* (Fr. per Fr.) Fr., presumably thinking of the cucullate form of this species. This identification is doubtful.

Agarico-gelicidium = Auricularia

agaricoides, *Tremella*, Retz. 1769 (SVH 30): 250 (Sweden) (d.n.).—Fide Pers. 1801: 631 & Fr. 1822: 167 = *Peziza/Bulgaria inquinans* ≡ *Phaeobulgaria inquinans* (Pers. per Pers.) Nannf. — Discomycetes.

Agyrium Fr. 1821 (nom. nud.) [1958 (Ta 7): 166], not ∼ Fr. 1822; holotype: *Tremella cinnabarina* Bull., *q.v.*

alabastrina, *Tremella* = Tremella encephala

alba, *Exidia*, Oud. 1920 E. 2: 481 ("Bref."). —An error for *E.* '*albida*', *q.v.*

albescens, Tremella ('Microtremella'), *Epidochium*

albicans.—"[*Tremella*] *albicans*. A.S.", Steud. 1824: 414.—Apparently an error, no *T. albicans* being described by A. & S. 1805.

albida Huds., Exidia, *Gyraria*, *Tremella*; sensu Fr. = Exidia cartilaginea; sensu Bon. = Myxarium hyalinum; sensu Berk. 1873 = *Ductifera pululahuana* (not listed); sensu Bourd. & G. = Tremella candida

albida, *Tremella*, Mont. 1835 (syn.), not ∼ Huds. per Hook. 1821; ≡ [*Tremella lutescens* "a. albida. Bull. . . ." Fr. 1822 (unnamed form) ≡] *Tremella mesenteriformis* var. *alba* Bull. 1791 H.: 230 [*pl. 406 f. C*] (France) (d.n.).—A 'foliaceous' species of *Tremella*, thus far not satisfactorily identified.

albida, *Tubercularia* = Tremella tubercularia

albida, Tulasnella

alboglobosa, *Exidia* = Myxarium hyalinum

albolilacina, Tulasnella

albus, *Dacrymyces* = Sebacina incrustans

allantospora, Tulasnella

alliciens, Eichleriella, *Exidiopsis*, *Stereum*

allii, *Tremella*, Dicks. 1785 P.c. 1: 14 (England) (d.n.) per Steud. 1824.—Dickson cited *Helvella mesenterica* Holm 1781 (Denmark) as synonym. *Sclerotium* sp., apparently an imperfect state of a species of Sclerotiniaceae (Discomycetes). — Deuteromycetes.

alni, Septobasidium

alpina, [Thanatephorus], *Rhizoctonia*

alutacea, *Sebacina* = Sebacina helvelloides

alutacea, *Tremella*, Schum. 1803: 439 (Denmark) (d.n.) per Pers. 1822.—Nomen dubium. Fide Fr. 1822: 228 = *Naematelia rubiformis*, but the original description does not support this identification.

alveolata, *Tremella* Scop. 1772: 402 (Yugoslavia, Carniola) (generic name n.v.p.) per Steud. 1824.—Apparently based on the plasmodium of a Myxomycete.

ambigua, *Sebacina*, *Thelephora* = Sebacina epigaea

amesii, *Sebacina* = ? Sebacina incrustans

amethystea, *Tremella*, Bull. 1791 H.: 229 [*pl. 449 f. 5*] (France) (nom. anam.) (d.n.) per St-Am. 1821.—Fide Fr. 1822: 217 = *Tremella sarcoides* Fr., *q.v.*

anceps, Ceratobasidium, *Corticium*, *Tulasnella*

andromedae P. Karst., *Exobasidium* = Exobasidium karstenii

andromedae, *Exobasidium*, Peck 1873 (BBf 1): 63 & 1874 (RNS 26): 73, not ∼ P. Karst. 1881.—Reported from Europe through confusion with *E. andromedae* P. Karst. (**135**). — Sensu Mig. = Exobasidium karstenii

angustisporum, Exobasidium

annulata, *Tremella*, Willd. 1788 (MB 2 / 4. Stück): 17 *pl. 4 f. 15* (Germany) (d.n.). —Nomen dubium. Algae.

anomala, *Rhizoctonia* = [Thanatephorus] *Orcheomyces* maculati

Aporpium (Tremellineae)

applanata, *Exidia* = Exidia plana

applanata, *Tremella*, (Schum.) Steud. 1824 (syn.) ≡ *Tremella subclavata* var. Schum. 1803: 442 (Denmark) (d.n.) per Pers. 1822. —Nomen dubium.

aquaeductorum, *Calocera*, Auersw. (in litt. ad Heufl.), Poetsch & Schied. 1872 (Austria) (nom. nud.).

aquosa, *Tremella*, Bon. 1864 (AbH 8): 120 (Germany).—Nomen dubium.

araneosa, Tulasnella

arborea, *Exidia*, *Tremella* = Exidia glandulosa; sensu Hoffm. = Exidia plana; sensu Lloyd, see (**37**)

arbuti, *Exobasidium*, P. Karst. ("in sched. Mus. bot. berol.").—Fide P. Magn. 1905: 139 = *Exobasidium vaccinii*, but possibly *E. unedonis* Maire.

arctica, *Tremella*, Sommerf., Fr. 1849: 341 (nom. nud.).—Apparently in error for *T. erecta* Sommerf., *q.v.*

Arcticomyces = Exobasidium

arctostaphyli, *Exobasidium*, Harkn. 1884 (BCA 1): 30 (U.S.A., California).—Reported

from Europe, but this is questionble, cf. (**139**).

argillaceus, Polyporus, Poria = Aporpium caryae

Arrhytidia = ? Dacrymyces

arrhytidiae, [Achroomyces], *Platygloea*

arundinis, Tremella, Pers. 1822: 109 (Switzerland) (nom. anam.); *Hymenella* Fr. 1822; *Hymenula* Fr. 1828.—This was excluded from *Hymenella* (*q.v.*) ≡ *Hymenula* by Vestergren [1899 (ÖVS[8]): 840] who placed it in a genus of its own for which he used the name *Hymenella*, while the name *Hymenula* was reserved for the original genus, an inadmissible course. The transfer to *Hymenopsis* Sacc. is taxonomically unacceptable. There seems to be no correctly named genus available to receive this species. — Deuteromycetes.

asari, Exobasidium = Helicobasidium brebissonii

asclerotica, [Thanatephorus], *Rhizoctonia*

asparagi, Rhizoctonia = Helicobasidium brebissonii

astroites, Fungus, Scop. 1772 P.s.: 117 *pl. 45 f. 2* ('Hungary') (d.n.); *Gomphus* (Scop.) per Pers. 1825.—Nomen dubium. Fide Fr. 1822: 172 = *Ditiola sulcata, q.v.*

Atkinsonia Lloyd 1916 (LMW 5): 576 (not accepted: n.v.p.; "McGinty") [1958 (Ta 7): 167].—Introduced in connection with *Sebacina amesii* Lloyd which is probably only a form of *Sebacina incrustans* (p. 176), the type species of *Sebacina* Tul.

atra, Sebacina = Sebacina molybdea

atra O. F. Müll., *Tremella* = Exidia glandulosa

atra Schrank, Tremella = ? Exidia plana

Atractiella (Auriculariineae)

atrata, *-um*, Oliveonia, *Ceratobasidium, Corticium*

atrata, Sebacina = Sebacina epigaea

atroglobosa, Tremella = Tremella moriformis

atrovirens Fr., *Agyrium, Epidochium, Tremella* = Tremella exigua

atrovirens, Tremella, Bull. 1783: *pl. 184* & 1791 H.: 225 (France) (d.n.), G. F. Re 1827 (d.n.), not ~ Secr. 1833, not ~ (Fr.) Sacc. 1888.—Fide Born. & Flah. 1888 (ASn VII 7): 203 = *Nostoc commune* Vauch. per Born. & Flah. — Nostocaceae heterocysteae. — Sensu Schum. = Exidia plana

atrovirens, Tremella, Secr. 1833 M. 3: 282 ["Schum. Saell. 2, p. 438. *Tr. atrovirens* (excl. syn. Bull.)"], not ~ Bull. 1783 (d.n.), not ~ (Fr.) Sacc. 1888; ≡ *Tremella collematiformis* Schleich., *q.v.*—By the reference quoted above *T. atrovirens* Secr. might be taken as a validly published 'new' name for *T. atrovirens* Bull. sensu Schum. = *Exidia plana* (p. 168). However, Secretan's own description shows that he simultaneously 'misapplied' the name to a species (Lichenes?) difficult to determine.

aurantia, Tremella, Schw. 1822: 114 (U.S.A., North Carolina): Fr. 1822; *Dacrymyces* Farl. 1883, misapplied; sensu Fr. 1828 E. 2: 33 (nomen) & Weinm. 1836: 530 (as *Tremella*) = *Tremella elegans* Fr., *q.v.*, fide Fr. 1874: 691; sensu Farl. = Dacrymyces palmatus.

aurantiaca, Sphaerocolla, P. Karst. 1892 (H 31): 294 (Finland) (nom. anam.).—Fide Höhn. 1917 (Am 15): 295, cf. *Hormomyces aurantiacus* Bon., *q.v.* — Deuteromycetes.

aurantiaca, Tremella, Grove 1918 (JBL 56): 286 (Scotland) nom. anam.).—Fide Grove, l.c., = imperfect state of *Nectria magnusiana* Rehm.— Deuteromycetes.

aurantiacum, Encephalium = Tremella encephala

aurantiacus, Hormomyces = Tremella mesenterica

aurea, Clavaria, Ehrh. 1791–3 P.c.: No. 279 (presumably nom. nud.) (n.v.), not ~ Schaeff. 1774 (d.n.) per Fr. 1838, not ~ Humb. 1793 (d.n.).—Fide Pers. 1797 C.: 185/53 & Fr. 1821: 486 = *Clavaria viscosa* ≡ *Calocera viscosa* (p. 196).

aurea Humb., *Clavaria* = ? Calocera viscosa

aurea, Peziza, Pers. 1796 O. 1: 41 (Germany) (d.n.) per Pers. 1822, not ~ (Bolt.) Sow. 1798 (d.n.).—Erroneously referred as synonym to *Peziza chrysocoma* Bull. [sensu Fr.] by Fr. 1822: 140; fide Donk 1964 (PNA 67): 14 = *Orbilia* sp. — Discomycetes.

Aureobasidium Viala & Boyer 1891 (nom. anam.) [1956 (Re 4): 114; 1963 (Ta 12): 156]; ≡ *Chrysobasidium* Clem. 1902; ≡ *Aureobasis* Clem. & Shear 1931; monotype: *Aureobasidium vitis* Viala & Boyer, *q.v.*

Aureobasis Clem. & Shear 1931 [1956 (Re 4): 114] ≡ *Aureobasidium* Viala & Boyer, *q.v.*

aureofulva, Ceracea = Dacrymyces corticioides

Auricula O.K. 1891 (nom. nud.) [1958 (Ta 7): 167], not ~ Hill 1756 (Primulaceae), not ~ Spach 1840 (Primulaceae), not ~ Castr. 1873 (Bacillariophyceae), not ~

Lloyd 1922 (Punctulariaceae, Aphyllophorales); type: "Auricula Judae Batt." ≡ *Auricula judae* O.K. (n.v.p.) = *Hirneola auricula-judae* (p.158), the type of *Hirneola* Fr.

auricula, *Auricularia*, *Exidia*, *Helvella*, *Hirneola*, *Merulius*, *Peziza*, *Tremella* = Hirneola auricula-judae

auricula-felis, *Tremella*, Paul. 1793 T. 2: 401 (descr.), Ind. [*pl. 186 fs. 4, 5*, as *Omoriza carnosa* Paul.] (France) (d.n.).—Perhaps *Peziza* (*Galactinia*) sp. — Discomycetes.

auricula-judae, Hirneola, *Auricularia*, *Exidia*, *Peziza*, *Tremella*; sensu Fr., in part = Exidia glandulosa

auricula-major, *Conchites*, Paul. 1793 T. 2: 398 (descr.), Ind. [*pl. 185 fs. 1, 2*, as *Fungoides hyosotis* Paul.] (France) (d.n.).—This has been referred to *Polyporus varius* (Pers.) per Fr. and *P. melanopus* Pers., but the figures suggest one of the large species of Pezizaceae: cf. Donk 1960 (Pe 2): 219. — Discomycetes.

auricula-minor, *Conchites*, Paul. 1793 T. 2: 398 (descr.), Ind. [*pl. 184 f. 5*, as *Peziza leporina* ?Paul.] (France) (d.n.) = *Otidea* sp. — Discomycetes

auricula-ursi, *Conchites*, Paul. 1793 T. 2: 399 (descr.), Ind. [*pl. 185 fs. 3, 4*, as *Omoriza onosotis* Paul.] (France) (d.n.) = *Otidea* sp. — Discomycetes.

Auricularia Bull. per Mérat (Auriculariineae); sensu Brogn. = Hirneola; sensu Fr. 1825 = *Stereum* (not listed); sensu Wahlenb., in part = Exidia

Auriculariella = Hirneola

auricularis, *Auricularia*, *Gyraria*, *Hirneola* = Hirneola auricula-judae

auriculatus, *-um*, *Hydnum*, *Tremellodon* = Pseudohydnum gelatinosum

auriformis, *Tremella* = ? Tremella mesenterica

austriaca, *Kordyanella*, Höhn. 1904 (Am 2): 274 (Austria) (nom. anam.).—Originally regarded as closely related to *Kordyana* (Exobasidiaceae). Fide D. P. Rog. 1957 (M 49): 902 an unidentified imperfect state forming sporodochia. — Deuteromycetes.

azaleae, *Exobasidium*, Peck 1873 (BBf 1): 63 & 1874 (RNS 26): 72 (U.S.A., New York); sensu Ritz. Bos 1901 (LbT 9): 77 = *E. japonicum* Shirai, *q.v.*, & cf. (**131**).

badia, *Tremella* = ? Tremella foliacea

badio-umbrina, Exidia, *Ulocolla*

baglietto anus, *-um*, *Corticium*, *Hypochnus*, *Septobasidium*, *Stereum* = Septobasidium quercinum

balbisii, *Tremella*, Bertola *c.* 1826 (n.v.) [cf. G. F. Re 1827: 324] (Italy).—Nomen dubium. Cf. Sacc. 1916: 1284: "Verosimilmente si tratta di un ammasso disseccato di micelii di Mucedinee saprogene."

banatica, Sebacina

basale, *Corticium* = Sebacina helvelloides

basicola, *Hypochnus* = Thanatephorus cucumeris

Basidiodendron (Tremellineae)

betae, *Rhizoctonia* = Thanatephorus cucumeris

betae, *Hypochnus* = Thanatephorus cucumeris

betulae, *Propolis*, Fuck. 1871 (Jna 25–26): 327 (Germany) ≡ *Propolis faginea* [= *P. versicolor* (Fr.) Fr.] var. *betulae* (Fuck.) Rehm 1888 (RKF 1[3]): 150.—Fuckel erroneously included in this species *Exidia repanda* which he believed to be the conidiophorous state. — Discomycetes.

bifrons, Tulasnella

biparasitica, *Tremella*, Fr. 1822: 219; *Phyllopta* Fr. 1849; ≡ *Sclerotium foliaceum* Fr. 1815 (Sweden) (d.n.).—Based on an abnormal growth on the stalk of *Nyctalis parasita* Fr., perhaps an excrescense of a similar nature to what has been called *Tremella mycetophila* Peck, *q.v.*

boletiformis, *Tremella* = Exidia recisa

borealis, *Guepinia*, P. Karst. 1895 (Finland) (nom. nud.).

Botryochaete Corda = Phleogena

botryoides, *Tremella*, (L.) Schreb. 1771 (generic name n.v.p.); *Byssus* L. 1753: 1169 ≡ *Phytoconis botryoides* (L.) Bory, the correct name according to Drouet & Dailey 1956 (BBU 12): 145. These authors regarded *Botrydinia vulgaris* Bréb. [apud Menegh.] as an isonym. If this were correct, and Brébisson had correctly interpreted the Linnaean species, than *Tremella botryoides* is (i) either a nomen confusum if Jaag [1933 (Bsb 42): 169–185 *6 fs.*] is correct in interpreting *Botrydinia vulgaris* as a lichen-like association of moss protonema and various species of *Coccomyxa* Schmidle, or (ii) the name of a true lichen if Geitler [1956 (ÖbZ 103): 469–474 *2 fs.*] is followed.

Bourdotia (Tremellineae)

brachyorrhiza, *Clavaria* = Calocera viscosa

brachyspora, Heterochaetella

brassicaecola, *Tremella*, B. & Br.—Mentioned by W. G. Sm. 1908: 452 as "probably a form of *Hypocrea rufa* Fr."
brebissonii, Helicobasidium, *Protonema*
brefeldianum f. microsporum, Sirobasidium
brefeldii, [Calocera], *Guepinia*
bresadolae, *Sebacina* = Sebacina incrustans
bresadolae, *Typhula* = Eocronartium muscicola
brevieri, *Exobasidium* = Herpobasidium filicinum
brinkmannii, Tulasnella
britzelmayri, *Tremella* = ? Dacrymyces palmatus
britzelmayriana, *Tremella*, Ade 1923 (ZP 2): 63.—An error for *T. britzelmayri*, *q.v.*
brunaudiana, -um, Atractiella, *Atractium*
brunnea, *Tremella*, Opiz 1852 (Czechoslovakia, Bohemia) (nom. nud.).—See Klášt. & al. 1958: *f. 8* (on p. 37) for herbarium label.
brunneola, Exidia
buccina, Guepiniopsis, *Helotium*, *Peziza*, *Phialea*; sensu Fr., Quél. = species of discomycetes (not listed)
buccina, *Guepinia* (see p. 335) = Guepiniopsis buccina
butyracea, *Tremella*, Timm 1788 (d.n.) ≡ *Tremella unctuosa*, *butyri colore et figura* Wulff 1765: 36 (Germany).—Nomen dubium.
byssoides, *Corynoides*, (Bull. per Mérat) S. F. Gray 1821; *Clavaria* Bull. 1788: *pl. 415 f. 2* & 1791 H.: 209 (France) (generic name n.v.p.) per Mérat 1821.—Fide Fr. 1832: 294 = *Ceratium hydnoides* (Jacq.) A. & S. [= *Ceratomyxia fruticulosa* (O. F. Müll.) Macbr.]. — Myxomycetes.
byssoides, *Thelephora*, Pers. 1801: 577 (Germany) (d.n.) per Fr. 1821 ≡ *Amphinema byssoides* (Pers. per Fr.) Jo. Erikss., Corticiaceae. — Sensu Bon. = Sebacina incrustans

cabralii, Septobasidium
caesia Bres. & Torr., *Bourdotia*, *Bourdotia pululahuana* subsp., *Sebacina* = Bourdotia galzinii
caesia Pat., Sebacina
caesia, *Sebacina*, (Pers.) Tul. 1871, misapplied, not/an ~ Pat. 1889; *Corticium* Pers. 1796 O. 1: 15 *pl. 3 f. 6* (Germany) (d.n.) per Fr. 1821; *Sebacina laciniata* subsp. Bourd. & G. 1928, misapplied.—Nomen dubium & ambiguum. Sensu Tul. = ? Sebacina incrustans; sensu Bourd. & G. = Sebacina caesia Pat.; sensu M. P. Christ. = Sebacina sp. — Cf. (51).
caesiocarnea, [Tulasnella], *Thelephora*
caesiocinerea, *Thelephora*, Killerm. 1922 (Dba 15): 6.— An error for *T. caesiocarnea* Britz. (p. 193).
caesiocinerea, -um, Basidiodendron, *Bourdotia*, *Corticium*, *Gloeocystidium*, *Sebacina*
caesius, Dacrymyces
calcea, *-um*, Sebacina, *Auricularia*, *Corticium*, *Exidiopsis*, *Thelephora*; sensu Bourd. & G. = *Sistotremastrum suecicum* Jo. Erikss. (not listed), Corticiaceae
calcea rimosa, *Thelephora*, Secr. 1833 M. 3: 223 (double epithet: n.v.p.) ≡ *Thelephora calcea* Pers. ≡ *Sebacina calcea* (p. 174)
callae, [Thanatephorus], *Rhizoctonia*
Calloria Fr. 1835 [1958 (Ta 7): 173]; lectotype: *Peziza fusarioides* Berk., *q.v.*—Formerly treated as a genus of "Tremellinei". — Discomycetes.
Calocera (Dacrymycetales)
Calopposis = Calocera
calospora, Sebacina, *Exidiopsis*
calospora, Tulasnella, *Gloeotulasnella*, *Prototremella*
camelliae, *Exobasidium*, Shirai 1896 (BMT 10): 51 *pl. 4 fs. 1–3* (Japan).—An alien. A collection from England referred here by Dennis & Wak. 1946 (TBS 29): 142 *f. 1*. — Descriptions & illustrations: Akai 1939 (BMT 53): 118 *fs. 1–6*, *pl. 1*; S. Ito 1955: 48 *f. 31*; McNabb 1962 (TNZ 1): 261 *f. 1*: *1*, *pl. 1 f. 1*.
Campylobasidium = Septobasidium
candida Pers., Tremella
candida, *Tremella*, Timm 1788: 253 (Germany) (d.n.), not ~ Pers. per Pers. 1822, not ~ Lloyd 1919.—Nomen dubium. Apparently not a species of Basidiomycetes, cf. *Endogone* Link per Fr. ?
canescens, *Aporpium*, *Poria* = Aporpium caryae
capitata, *Guepinia*, Feltg. (Luxemburg).—A herbarium name, incidentally mentioned by Höhn. 1907 (SbW 116): 142 = "*Tuberculariа* (*vulgaris* ?)". — Deuteromycetes.
caraganae, *Tremella* = Hirneola auriculajudae
carbonacea, *Tremella*, Retz. 1769 (SVH 30): 250 (d.n.).—Fide Fr. 1832: 332 = *Sphaeria* [= *Hypoxylon*] spp. — Pyrenomycetes.
carestiana, -um, Septobasidium, *Mohortia*
carneola, Sebacina
carneum, *Nostoc*, (Lyngb.) Ag. 1824 (d.n.) per Born. & Flah. 1888 (ASn VII 7): 196;

Nostoc commune var. *carneum* Lyngb. 1819 (d.n.) (Faeroes).—This was annotated by Steud. 1824: 297 with "cfr. *Exidia glandulosa*", evidently in error. — Nostocaceae heterocysteae.

carotae, Hypochnus, Rostr. (in herb.), Lind 1913 (Denmark) (nom. nud.).—Presumably = *Thanatephorus cucumeris* (p. 187).

carpinea, Tremella fragiformis var., A. & S. 1805: 301 (Germany) (d.n.); *Dacrymyces fragiformis* forma (A. & S.) per Fr. 1822; *Mylittopsis* Höhn. 1917, misapplied.—Nomen dubium. Sensu Höhn. = Mycogloea macrospora

cartilaginea, Exidia

cartilagineo-lenta, Exidia, Lundell (in litt.), Neuh. 1935 (syn.) = *Exidia cartilaginea* (p. 167).

caryae, Aporpium, *Polyporus, Poria*

cassiopes, Exobasidium

castaneus, Dacrymyces, Rab. 1844: 53 (Italy).—Nomen dubium. Neuhoff (*1936a:* 47) thought of *Exidia badio-umbrina*, Kennedy (*1959b:* 900) suggested *Dacrymyces enatus* sensu stricto.

caucasicum, Exobasidium

cavarae, Calocera

cavarae, Septobasidium

cavendishiani, [Thanatephorus], *Rhizoctonia*

Ceracea Cragin 1885 [1958 (Ta 7): 174]; monotype: *Ceracea vernicosa* Cragin, *q.v.*; sensu Pat. = Cerinomyces; some species now referred to *Arrhytidia*. — Special literature: Martin, *1949*. — Deuteromycetes.

ceranoides, Tremella, With. 1776 (generic name n.v.p.) ≡ *Tremella palustris gelatinosa, Damae cornuum facie* Dill. 1741: 51 *pl. 10 f. 10* (England).—Dillenius's species is now usually referred to *Chaetophora incrassata* (Huds.) Haz. — Chlorophyceae.

cerasi Tul., Craterocolla, *Ditangium, Exidia, Ombrophila, Tremella*

cerasi, Dacrymyces, Lib. ("in Herb."; Roum. 1880 & Cooke 1880, incidental mention) ex Sacc. 1888 (SF 6): 802 (Belgium).—Nomen dubium.

cerasi, Sirobasidium, Bourd. & G. 1909 (BmF 25): 19 (France) (nom. anam.) ≡ *Endostilbum cerasi* (Bourd. & G.) Malenç. 1964 (BmF 80): 111, possibly the imperfect state of *Coryne solitaria* Rehm, cf. M. P. Christ. 1963 (Fr 7): 81 *f. 4*. — Special literature: Christiansen, *1963:* Malençon, *1964*. — The separation of *Endostilbum* Malenç. from *Pirobasidium* Höhn. may appear untenable. — Cf. also *Hyaloria europaea* Killerm. and *Killermannia* Neuh. —Deuteromycetes.

cerasi, Tremella, Schum. 1803: 438 (nom. anam.) (d.n.).—Nomen dubium (**25**). — Sensu Tul. = Craterocolla cerasi

cerasina, Helvella ("*Elvela*"), Wulf. 1786 (CoJ 1): 347 (Austria) (d.n.); *Peziza* Pers. 1801 (d.n.); *Peziza* (Wulf.) per Steud. 1824 ("Batsch. [error] / *Elvela cerasina*. Wulf."); *Ombrophila rubella* var. Quél. 1886, misinterpreted, cf. (**26**). — Discomycetes.

Ceratobasidium (Tulasnellaceae)

cerebriformis, Dacrymyces = Dacrymyces lacrymalis

cerebrina, Tremella, *Ulocolla*

cerina, Tremella, Rox. Clem. 1807: 321 (Spain) (generic name n.v.p.) —Fide Ag. 1823 S.A. 1: 146 = *Encoelium sinuosum* (Roth) Ag. ≡ *Colpomenia sinuosa* (Roth) Derb. & Sol. — Phaeophyceae.

Cerinomyces (Dacrymycetales)

chalybea.—["*Tremella*] *chalybea* Pers.", Steud. 1824 (syn.).—An error for *Corticium* ('*Tomentella*') *chalibaea* Pers.

chlorascens, Sebacina = Sebacina helvelloides

Chrysobasidium Clem. 1902 (nom. nud. & anam.) [1956 (Re 4): 114] ≡ *Aureobasidium* Viala & Boyer, *q. v.*

chrysocoma, Dacrymyces, *Bulgaria, Calloria, Guepiniopsis, Hymenoscyphus, Orbilia, Peziza*; sensu Sow. 1798: *pl. 152* = *Orbilia* sp. (not listed), fide Donk 1964 (PNA 67): 13–14; sensu Sacc. 1878 (Mi 1): 429 (*Calloria*), Pat. 1884 T.a. 1: 130 *f. 293* (*Calloria*), Sacc. 1889 (SF 8): 624 (*Orbilia*) = species of discomycetes (not listed); sensu Bref. = Dacrymyces estonicus; sensu Brasf. = *Heterotextus* sp. (not listed)

chrysocoma, Tremella = Tremella mesenterica

chrysosperma, Dacrymyces = Dacrymyces palmatus

cincta, Clavaria, Clavaria cornea var. = ? Calocera cornea; sensu Secr. = Calocera furcata

cinerea, -um, Basidiodendron, *Bourdotia, Sebacina, Thelephora*

cinerea, Tremella, (Batsch) With. 1792 (d.n.), not ~ Bon. 1851: *Peziza* Batsch 1786: 197 *pl. 26 f. 137* (Germany) (d.n.) ≡ *Mollisia cinerea* (Batsch per Pers.) P. Karst. — Discomycetes.

cinerea Bon., *Tremella* = Exidia plana

cinerella, *Bourdotia*, *Sebacina* = Basidiodendron caesiocinereum

cinereoviridis, *Tremella*, Schum. 1803: 439 (Denmark)(d.n.) per Lind 1913.—Nomen dubium (**70**).

cinereus, [Sebacina], *Hypochnus*

cinnabarina, *Tremella*, Wulf. 1787 (SBe 8): 155 (Austria) (d.n.), not ~ Bull. 1789 (d.n.) & (Bull. per Mérat) Fic. & Schub. 1823, not ~ (Mont.) Pat. 1900; ≡ *T. ruberrima* Gmel. 1791.—Nomen dubium.

cinnabarina, *Tremella*, Bull. 1789: *pl. 455 f. 2* (France) (nom. anam) (d.n.), not ~ Wulf. 1787 (d.n.), not ~ (Mont.) Pat. 1900; *Tubercularia* (Bull.) per Mérat 1821; *Gyraria* S. F. Gray 1821; *Tremella* Fr. 1822: 233 ("*cinnabarrina*"; incidental mention), Fic. & Sch. 1823: 316 ("P."); ≡ *Tremella fucata* Gmel. 1791 (d.n.).—Sometimes (Ferraris 1910: 24) referred to *Tubercularia vulgaris* Tode per Fr., the imperfect state of *Nectria cinnabarina* (Tode per Fr.) Fr. *Tremella cinnabarina* "Spreng." is an application of the present name. — Deuteromycetes.

cinnamomescens, Exidia

citri, Exobasidium

citriforme, Uthatobasidium

clandestinum.—*Hydnum* "*clandestinum* Nees", J. Schroet. 1888: 397 (syn.) = *Hydnum gelatinosum* Scop. sensu Nees 1816: 234 *pl. 32 f. 244* & 1817: 61 ("Pers.") = *Hydnum gelatinosum* var. *clandestinum* Pers., not *Hydnum clandestinum* Batsch per Steud. 1824; = *Pseudohydnum gelatinosum* (p. 173).

Note.—Persoon (1825: 172) adopted for his *Hydnum gelatinosum* var. *clandestinum* Nees's description of "*Hydnum Apus gelatinosum* Pers.", which was accompanied by a figure copied from Schaeffer's plate 145 (as *Hydnum gelatinosum* Scop.). The figure corresponds with the left hand fruitbody depicted by Schaeffer in his figure 4. Nees excluded Schaeffer's plate 144 from his concept of *Hydnum gelatinosum* (cf. Nees 1816: 234). Persoon cited in addition to Nees's figure also "Schaeff. 144": this may well be an error for '145'. The type (here chosen) of Persoon's varietal name is the fungus copied by Nees from Schaeffer. (Schaeffer's plates 144 and 145 made out part of the original conception of *Hydnum clandestinum* Batsch = *Hydnum repandum* L.)

clavaeformis, see *clavariaeformis*

clavariaeformis, Tremella, Wulf. 1788 (CoJ 2): 174 (Austria) (d.n.); Steud. 1824 ("*clavaeformis*"; syn.); ≡ *Gymnosporangium clavariaeformis* (Wulf.) per DC. 1805. — Uredinales.

clavarioides, *Thelephora*, Thuill. (in herb.).—Fide Tul. 1872(ASn V 15): 225 = *Sebacina incrustans* (p. 176).

clavata, *Tremella*, (Pers.) Pers. 1801 (d.n.); *Acrospermum* Pers. 1797 C.: 222/90 (Germany) (non. anam.) (d.n.); *Coryne* (Pers.) per S. F. Gray 1821; *Tremella* Pers. 1822: Fr. 1822: 218.—Description & illustration: Pers. 1804 I.p.: 24 *pl. 10 f. 2* (*Tremella*). — Cf. *Tremella sarcoides* Fr., *q.v.*

coccinea, *Ndematelia*, Wettst. 1885 (VW 35): 554 (Austria).—Nomen dubium.

coccinea, *Tremella*, Scop. 1772: 402 (Yugoslavia, Carniola) (d.n.) per Steud. 1824. —Nomen dubium.

cochlearis, *Guepinia* = Guepiniopsis buccina

cochleata, *Conchites*, Paul. 1791 T. 2: 398 (descr.), Ind. [*pl. 184 f. 6*, as *Peziza cochleata* (Paul.) Paul.] (France) (d.n.).—*Otidea* sp. — Disomycetes.

cokeri, *Sebacina* = Sebacina epigaea

collematiformis, *Tremella*, Schleich. 1821 (Switzerland) (nom. nud.) = *Tremella atrovirens* Secr., *q.v.*

colorata, *Tremella* = Tremella moriformis

compressa, *Tremella*, Steud. 1824: 414, 425 ("Dillw."; syn.).—An error for *Tremella marina tenuissima* & *compressa* Dill. 1741: 48 *pl. 8 f. 9* ≡ *Ulva compressa* L. ≡ *Enteromorpha compressa* (L.) Grev. — Chlorophyceae.

concha-marina, *Conchites*, Paul. 1793 T. 2: 397 (descr.), Ind. (d.n.) ≡ *Concha saligna marina* Sterb. 1712: 252 *pl. 27 f. E* (pre-Linnaean name).—The identity of the 'basionym' (Belgium) is doubtful; the species depicted by Paul. 1812–35: *pl. 184 f 3* belongs to the Pezizaceae.

Conchites = Hirneola

confluens, Dacrymyces

conformis, *Dacrymyces*, *Ditiola* = Femsjonia pezizaeformis

conglobata, *Tremella*, Britz. 1893 (BCb 54): 105 [*pl. 748 f. 15*] (Germany).—Nomen dubium.

conglobatus, *Dacrymyces* = Craterocolla cerasi

conica, *Tremella*, (Hedw. f. ex DC.) Poir. 1808 (d.n.) ≡ *Gymnosporangium conicum* Hedw.

f. ex DC. 1805: 216 (Europe) = *Gymnosporangium* sp.—A nomen ambiguum at the specific level, fide Hylander & al. 1953 (ObL 1[1]): 15. De Candolle, l.c., cited *T. juniperina* L. (*q.v.*) as synonym. Fide Kern 1911 (BNY 7): 461 = ? *G. sabinae* (Dicks.) per Wint. — Uredinales.

conigenus, *Dacrymyces*, Niessl 1881 (Czechoslovakia, Moravia) (nom. anam. & nud.) ≡ *Pseudopatellina conigena* (Niessl) ex Höhn. 1908 (SbW 117): 1024, 1025. — Deuteromycetes.

conopeae, [Thanatephorus], *Orcheomyces*

conspersa, *Peniotulasnella*, Bourd. & G. 1928: 65, in obs. (France) (nom. prov.).—Nomen dubium.

contorta, *-us*, *Polyozus*, *Thelephora* = Tremellodendropsis tuberosa

contortus, *Dacrymyces* = Dacrymyces tortus; sensu Ces., in part = Dacrymyces palmatus

coralloides, *Tremella*, Scop. 1772: 402 (Yugoslavia, Carniola) (d.n.) per Steud. 1824. —Nomen dubium.

Corallomorpha Opiz 1856 [1958 (Ta 7): 174]; lectotype: *Corallomorpha schoblii* Opiz.—Nomen dubium. Opiz thought that the genus "sich an die Fries'sche Gattung *Calocera* anschlieset", but it seems more likely that it belongs to the Deuteromycetes.

cordylina, *Poria* = Aporpium caryae

coreacea, *Tremella*, Schleich. 1821 (nom. nud.) ex Secr. 1833 M. 3: 286 (Switzerland), not *T. coriacea* (Vauch.) Poir. 1808 (d.n.), not ~ Sacc. & Trott. 1912.—Nomen dubium. Cf. Secretan, l.c.: "Sa teinte est un vert obscur ...." — Lichenes ?

coriacea Sacc. & Trott., *Tremella*, = Tremella ('Microtremella') coriaria

coriacea, *Tremella*, (Vauch.) Poir. 1808 (d.n.), not *T. coreacea* Schleich. per Secr. 1833, not *T. coriacea* Sacc. & Trott. 1912; *Nostoc* Vauch. 1803: 226 *pl. 16 f. 4* (Switzerland) (d.n.).—Fide Born. & Flah. 1888 (ASn VII 7): 204 = *Nostoc commune* Vauch. per Born. & Flah. — Nostocaceae heterocysteae.

coriaria, Tremella ('Microtremella')

cornea, Calocera, *Clavaria*, *Corynoides*

cornea, *Tremella*, Schleich. 1821 (Switzerland) (nom. nud.).

corniculata, *Tremella*, With. 1776: 733 (generic name n.v.p.) ≡ *Lichenoides pellucidum fuscum corniculatum* Dill. 1741: 143 *pl. 19 f. 30* (England) = *Leptogium palmatum* (Huds.) Mont. — Lichenes.

cornigera, Calocera

cornigerum, Ceratobasidium, *Corticium*

cornuta, *Clavaria*, Schaeff. 1774: 121 [*pl. 289*] (Germany) (d.n.), not ~ Lam. 1778 (d.n.), not ~ Retz. 1779 (d.n.), not ~ Wulf. 1781 (d.n.).—Fide Fr. 1821: 486 = *Clavaria viscosa* ≡ *Calocera viscosa*, but this identification is very doubtful. Perhaps an abnormal growth of *Lentinus* sp.

cornuta, *Tremella*, Neck. 1768: 524 (generic name n.v.p.), not ~ (Pers.) per Pers. 1822.—From the synonyms cited this may be a species of *Chaetophora*; cf. *C. incrassata* (Huds.) Haz. — Chlorophyceae.

cornuta, *Tremella*, (Pers.) Pers. 1801 (d.n.), not ~ Neck. 1768 (generic name n.v.p.); *Acrospermum* Pers. 1797 C.: 222/88 (Germany) (d.n.); *Tremella* (Pers.) per Pers. 1822; Fr. 1822: 218 (not accepted).—Fide Sacc. 1888 (SF 6): 702 = *Tremella sarcoides* Fr., *q.v.*

corrugata Relh., *Auricularia*, *Tremella* = Auricularia mesenterica

corrugata With., *Helvella* = Auricularia mesenterica

corrugativa, *Exidia* = Myxarium hyalinum

corticalis, *Calocera*, (Batsch per Steud.) Fr. 1828; *Clavaria* Batsch 1786: 231 *pl. 28 f. 162* (Germany) (d.n.) per Steud. 1824; ≡ *Lentaria corticalis* (Batsch per Steud.) Corner 1950: 440 (in error as '*corticola* Quél.'), Clavariaceae. — Sensu Bref. = Calocera cornea

corticioides, Dacrymyces, *Ceracea*

corticola, *Muciporus*, (Fr.) Juel 1897, misapplied; *Polyporus* Fr. 1821: 385; ≡ *Oxyporus corticola* (Fr.) E. Komar., Polyporaceae. — Sensu Juel, in part = Tulasnella violea

Coryne, *Tremella* "stirps" ~ , Nees 1816: 157 & 1817: 40 (inadmissible term denoting rank) (nom. anam.); *Coryne* (Nees) Nees (nom. prov. & alternative name) ex S. F. Gray 1821 (nom. anam.) (nom. rejic. prop.), not ~ Tul. 1865 (nom. cons. prop.); *Tremella* sect. *Coryne* (Nees) ex Pers. 1822; *Tremella* subgen. Fr. 1822; *Tremella* [trib.] Fr. 1838; ≡ *Tremella* sect. *Clavaeformes* Fr.; lectotype: *Acrospermum dubium* Pers. ≡ *Tremella acrospermum* Nees, *q.v.* — This form-genus is now known as *Piro-*

basidium Höhn. (imperfect state of *Coryne* Tul., Discomycetes). — Deuteromycetes.

Corynoides = Calocera

Craterocolla (Tremellineae)

crenata, Guepinia = Guepiniopsis buccina

crispa, Tremella, Schreb. 1771, Sibth. 1794; (generic name n.v.p.), not ~ Lloyd 1922; ≡ *Tremella terrestris tenera, crispa* Dill. 1741: 52 *pl. 10 f. 12* (England); ≡ *Ulva crispa* Lightf. 1777 (typonym), not ~ (L.) DC. 1805; *Tremella* With. 1776 (generic name n.v.p.); ≡ *Prasiola crispa* (Lightf.) Kütz. (typonym). — Chlorophyceae.

cristata, -um, Corticium, Cristella, Merisma, Thelephora, Sebacina = Sebacina incrustans; sensu Pat. = *Cristella fastidiosa* (Pers. per Fr.) Brinkm., Corticiaceae

Cristella Pat. 1887 [1957 (Ta 6): 68].—D. P. Rog. 1944 (M 36): 78 stated that the type species "presumably is a *Sebacina*". This is incorrect, the type species "*Crist. cristata*" sensu Pat. is undoubtedly *Corticium fastidiosum* (Pers. per Fr.) P. Karst. ≡ *Cristella fastidiosa* (Pers. per Fr.) Brinkm., cf. Donk 1952 (Re 1): 485–486. — Corticiaceae.

crocata, Hirneolina = Eichleriella alliciens

croceotingens, Gloeocystidium = Basidiodendron eyrei

croci, Tuber = Helicobasidium brebissonii

crocorum, Rhizoctonia, Sclerotium, Thanatophytum = Helicobasidium brebissonii

crozalsii, Sebacina

cruenta, Tremella, Sm. 1807 (EB 25): *pl. 1800* (generic name n.v.p.) per Hook. 1821; *Olivia* (Sm. per Hook.) S. F. Gray 1821 ≡ *Porphyridium cruentum* (Sm. per Hook.) Näg. = *P. purpureum* (Bory) Drew & Ross. — Rhodophyceae.

crustulina, -us, Cerinomyces, *Ceracea*; sensu Brasf. = *Cerinomyces pallidus* G. W. Mart. (not listed)

crypta, Tremella, Lib. ("in Herb."), Roum. 1880 (syn.), Cooke 1880 (G 8): 82 (accepted?), Mussat 1901 ("*cripta*"; syn.).— Nomen dubium. Fide Roum. 1880 (Rm 2): 15 = *Tremella unicolor* Fr., *q.v.*, almost certainly in error.

crystallina, Heterochaetella, Sebacina = Stypella papillata

crystallinum, -us, Hydnum, Tremellodon = Pseudohydnum gelatinosum

cucullata, -us, Brond., *Auricularia, Cantharellus, Merulius* = Hirneola auricula-judae

cucumeris, Thanatephorus, *Hypochnus*

culmorum, Tremella = Sebacina incrustans

cuprina.—"*Tremella cuprina* Bory" is cited by Ag. 1824: 22 under *Nostoc rufescens* Ag. [= *N. carneum* (Lyngb.) Ag. per Born. & Flah.] as "huic videtur proxima".

curvispora, Tulasnella

cylindrica, Tremella, (Vahl) Schum. 1803 (d.n.) per Pers. 1822; *Acrospermum* Vahl 1792 (Fd 6 / F. 18): 8 *pl. 1076 f. 4* (Norway).— Fide Fr. 1822: 218 = *Tremella sarcoides* Fr. (var.), *q.v.*

cyphella, Guepinia = ? Femsjonia pezizaeformis

cystidiophora, Exidiopsis = Basidiodendron cinereum

cystidiophora, Tulasnella, *Gloeotulasnella, Tremella*

Cystobasidium (Auriculariineae)

Dacrymycella Bizzoz. 1885 [1962 (Ta 11): 82]; monotype: *Dacrymycella fertillissima, q.v.*

Dacrymyces (Dacrymycetales); sensu Corda = Dacrymyces, imperfect state.

Dacryomitra = Calocera

Dacryomyces = Dacrymyces, *q.v.*

Dacryonaema (Dacrymycetales)

Dacryopsella Höhn. 1915 [1954 (Re 2): 457]; holotype: *Dacryopsis typhae* Höhn., *q.v.*— This genus, which has been merged in *Pistillina* Quél., does not belong to the Dacrymycetaceae as von Höhnel thought.

dauci, Rhizoctonia = Helicobasidium brebissonii

deciduum, Sclerotium = Ceratobasidium anceps

*decorticata, Onygena, Phleogena, *Pilacre* Lloyd 1925 = Phleogena faginea

deformans, Herpobasidium

deglubens, Corticium, Sebacina = Sebacina incrustans

deglubens, Eichleriella, *Radulum*

deliquescens, Calloria, Dacrymyces, Tremella = ? Dacrymyces lacrymalis; sensu Fr., Duby = Dacrymyces stillatus

deliquescens var. *castaneus, Dacrymyces* = Dacrymyces enatus

deliquescens (nom. conf.), *Muciporus*, in part = Tulasnella calospora

deliquescens, Tulasnella = Tulasnella calospora

deminuta, -um, Basidiodendron, *Bourdotia, Sebacina*

dendroidea, Sebacina, (B. & C. apud B. & Br.) Lloyd 1915; *Hymenochaete* B. & C. apud B. & Br. 1873 (JLS 14): 69 (Venezuela).—Not a

species of Heterobasidiae. The precise identity and nature is still under discussion. Fide Petch 1912 (APe 5): 280 the collection from Ceylon represents mycelial growth on which the spores of the substratum (*Ganoderma* sp.) have been deposited and which is often parasitized by *Hypomyces chrysocomus* B. & Br. A similar growth has occasionally been reported from Europe; cf. *Septocylindrium lindtneri* Kirschst. 1936 (ZP 15): 118 *pl. 15 f. 2.*

depressa, Exidia, Bon. 1851: 336 *pl. 12 f. 244.* —An error for *Exidia impressa, q.v.*, described on p. 153 of the same work.

Dermatangium = ? Tremella

dichotoma, Tremella, With. 1776: 733 (generic name n.v.p.) ≡ *Lichenoides gelatinosum, foliis angustioribus tuniformibus* Dill. 1741: 142 *pl. 19 f. 28* (England) = *Leptogium fluviatile* (Huds.) Leight. — Lichenes.

difformis, Tremella, L. 1755: 429 (Sweden) (generic name n.v.p.), not ~ With. 1776 (generic name n.v.p.); ≡ *Leathesia difformis* (L.) per Aresch. — Phaeophyceae.

difformis, Tremella, With. 1776: 733 (generic name n.v.p.), not ~ L. 1755 (generic name n.v.p.); ≡ *Lichenoides maritimum gelatinosum* . . . Dill. 1741: 137 *pl. 19 f. 19* (England).

digitata, Tremella, Hoffm. 1787 V.c. 1: 33 *pl. 7 f. 2* (Germany) (d.n.), not ~ Vill. 1789 (d.n.); = *Gymnosporangium* sp.—Hoffmann cited *Tremella sabinae* Dicks. as synonym. — Uredinales.

digitata, Tremella, Vill. 1789: 1007 (France) (d.n.), not ~ Hoffm. 1787 (d.n.).—Fide Kern 1911 (BNY 7): 464 = *Gymnosporangium clavariaeformis, q.v.* — Uredinales.

dimitica, Sebacina

dimorphum, Septogloeum = Kriegeria eriophori

disciforme, -is, Achroomyces, *Cryptomyces, Epidochium, Platygloea, Tremella*

discoideum, Exobasidium; sensu Petri = *Exobasium japonicum, q.v.*

discoideum var. *horvathianum, Exobasidium* = Exobasidium discoideum

Ditangium = Craterocolla

Ditiola (Dacrymycetales)

divisa, Pilacre = ? Phleogena faginea

dubia, Heterochaetella, *Heterochaete, Sebacina*

dubia, Tremella, (Pers.) Pers. 1801 (d.n.); *Acrospermum* Pers. 1797 C.: 224/92 (Germany) (nom. anam.) (d.n.); *Tremella* (Pers. per S. G. Gray) Pers. 1822, not ~ Spreng. 1827; ≡ *Tremella acrospermum* Nees. —Fide Pers. 1822: 321 = *Peziza sarcoides* (Jacq.) per Pers.; fide Fr. 1822: 217 = *Tremella sarcoides* Fr., *q.v.*

dubia, Tremella, Spreng. 1827, not ~ (Pers. per S. F. Gray) Pers. 1822; ≡ *Phlebomorpha rufa* Pers. 1822: 61 *pl. 6 fs. 1, 2* (Europe). —Nomen dubium. Possibly the plasmodium state of a Myxomycete.

dubium, Exobasidium

dubyi, Guepinia = Hirneola auricula-judae

dufouri, Tremella, Brond. 1854 (AFA 1): 59 (France).—Nomen dubium.

dulciana, Tremella, Roum. 1890 (Rm 12): 1 (France) (nom. prov. ?), Sacc. 1891.—Nomen dubium. Perhaps abnormal growth produced by the 'host' [fruitbody of *Clitocybe nebularis* (Batsch per Fr.) Kumm.], similar to what has been called *Tremella mycetophila, q.v.*

Ecchyna Fr. 1819 (nom. nud.) & 1825 (nom. prov.), not ~ Fr. 1849 [1958 (Ta 7): 173]; monotype: an unnamed species.

Ecchyna Fr. ex Boud. = Phleogena

Echin-agaricus Haller 1742 (pre-Linnaean name) [1958 (Ta 7): 194].—By lectotypification = *Pseudohydnum* P. Karst. (p. 173).

effusa, -us, Achroomyces, *Platygloea*

effusa, Exidia, (A. & S.) per Neuh. 1926; *Tremella candida* var. *effusa* A. & S. 1805: 302 (Germany) (d.n.).—Nomen dubium.

effusa, Sebacina, *Exidiopsis, Thelephora*

effusus.—"*D*[*acrymyces*] *effusus* est *Thelephora* junior", fide Fr. 1822: 231.

eichleriana, Tulasnella

Eichleriella (Tremellineae)

elegans, Tremella, Fr. 1822: 214 (U.S.S.R., Russia, Kamchatka).—Reported from Petrograd [= Leningrad], Russia, by Fr. 1874: 691. The collection referred to was originally published as *Tremella aurantia* Schw. sensu Fr. 1828 E. 2: 33, Weinm. 1836: 530. Also reported from Bavaria by Allesch. 1889 [cf. 1890 (H 29): 301]. Nomen dubium.

elliptica, Tremella, Pers. 1822: 109 (Europe) (nom. anam.).—Fide Fr. 1822: 234 = *Hymenella vulgaris* Fr. ("etiam huc spectat").

ellisii, Dacrymyces = Dacrymyces stillatus

elongata, Calocera, (Weinm.) Streinz 1861 (syn.); *Calocera viscosa* f. *elongata* Weinm. 1836: 517 (U.S.S.R., Russia).—Fide

McNabb 1965 (NZB 3): 53, cf. *Calocera viscosa*.

enata, -us, Dacrymyces, *Arrhytidia*, *Tremella*

encephala, Tremella, *Naematelia*

encephaliformis, *Naematelia*, *Tremella* = Tremella encephala

Encephalium (nom. conf.), in part = Tremella

encephalodes, *Tremella*, Schum. 1803: 439 (Denmark) (d.n.), not/an *T. encephaloides* Gmel. 1791.—Nomen dubium. Fide Fr. 1822: 228 = *Naemetelia rubiformis* Fr., but this identification is improbable.

encephaloidea Spreng., *Tremella* = Tremella encephala

encephaloides Gmel., *Tremella* = Tremella encephala

Eocronartium (Auriculariineae)

epapillata, *Exidia* = ? Exidia plana

Epidochiopsis P. Karst. 1892 (H 31): 294 (nom. anam.); monotype: *Epidochium atrovirens* (Fr.) Fr. sensu P. Karst. = *Epidochiopsis atrovirens* P. Karst.—Originally based on a misinterpretation of *Epidochium atrovirens q.v.* — Deuteromycetes.

Epidochium = Tremella

epigaea, Sebacina, *Sebacina laciniata* subsp., *Tremella*

epilobii, *Propolis*, Fuck. 1870 (Jna 23–24): 253 (Germany).—Fide Rehm 1888 (RKF 1[3]): 149 = *Propolis faginea* (Schrad.) per P. Karst. [= *P. versicolor* (Fr.) Fr.]. Fuckel erroneously stated that the conidiophorous state was a species of *Exidia*. — Discomycetes.

epimyces, *Tremella*, Pass. 1872 (NGi 4): 165 (Italy).—Nomen dubium. Perhaps abnormal growth produced by the 'host' [fruitbody of *Hygrophorus hypothejus* (Fr. per Fr.) Fr.], similar to what has been called *Tremella mycetophila*, *q.v.*

episphaeria, *Tremella*, Chaill. (in litt.), Fr. 1828 (syn.), Streinz 1861 ("*epistatica*", error; syn.), not ~ J. Rick 1958.—Fide Fr. 1828 E. 2: 33 = *Tremella indecorata* (p. 181) & cf. (**71**).

epistatica, *Tremella*, Streinz 1861 (syn.).—Error for *T.* '*episphaeria*', *q.v.*

erecta, *Tremella*, ?DC., Steud. 1824: 415, not ~ Sommerf. 1827; "Tremelle inédite, que l'on pourroit nommer Trémelle couchée" Girod-Chantr. 1802: 162 *pl. 22 f. 57*. — Algae.

erecta, *Tremella*, Sommerf. 1827 (MNv 7): 296 (Norway), not ~ ?DC., Steud. 1824.—Nomen dubium. The description strongly suggests *Tremiscus helvelloides* (p. 185). Cf. *Tremella arctica*.

erikssonii, *Corticium*, Maubl.—Cited by Vienn-B. 1949: 1179 as synonym of *Helicobasidium purpureum* "(Tul.) Pat." = *Helicobasidium brebissonii* (p. 156).

eriophori, Kriegeria, *Platygloea*, *Xenogloea*

estonicus, Dacrymyces

Eucronartium = Eocronartium

euphorbiae, *Dacrymyces*, Lasch 1846 (Germany) (nom. nud.).

euphrasiae, *Corticium*, *Hypochnus*, *Monilia* = Thanatephorus cucumeris

europaea, *Hyaloria*, Killerm. 1936 (BdG 54): 165 *pl. 25* (Germany) (nom. anam.).—Cf. Killerm. 1940 (DrG 21): 81, "*Sirobasidium cerasi* Bourd. . . . scheint identisch zu sein." If this is correct then the protologue is misleading. See also *Killermannia* Neuh. — Special literature: Killermann, *1936*. — Deuteromycetes.

europaea, [Exidia], *Heterochaete*

exarata, *Peziza*, *Phialea* = Guepiniopsis buccina

Exidia (Tremellineae)

Exidiopsis = Sebacina

exigua, Tremella

Exobasidiellum (Tulasnellaceae)

Exobasidium (Exobasidiales)

expallens, *Calocera*, Quél. 1888: 457 (France).—I would exclude this from the Dacrymycetaceae and for the present consider it a doubtful species of Clavariaceae. I cannot agree with McNabb's suggestion [1965 (NZB 3): 54], "possibly *Calocera cornea*".

expansa, *Tremella* = Tremella mesenterica

eyrei, Basidiodendron, *Bourdotia*, *Gloeocystidium*, *Sebacina*

fabarum, *Corynoides*, S. F. Gray 1821; ≡ *Clavaria fabae* Sow. 1814 (EB 36): Ind. Engl. Fungi; ≡ *Clavaria rugosa* Sow. 1809: *pl. 404* (England) (d.n.), not ~ Bull. 1789 (d.n.) per Fr. 1821, not ~ Sow. 1801 (d.n.).; ≡ *Merisma pusillum* Pers. 1822.—Nomen dubium. Doubtfully heterobasidious.

facata.—"*Tremella facata* Buill.", Humb. 1793: 126, in obs.—An error for *Tremella fucata* Gmel. ≡ *T. cinnabarina* Bull., *q.v.*

fagi, *Ditiola* = [Dacrymyces] *Ditiola* nuda

fagicola, Dacrymyces, *Dacrymyces deliquescens* var.

faginea, Phleogena, *Botryochaete*, *Ecchyna*, *Onygena*, *Pilacre*

faginea, *Tremella*, **Exidia* Neuh. 1936 (syn.) = Exidia plana

falcatispora, *Clavaria* = Eocronartium muscicola (& see p. 335).

farinacea, *-um*, Saccoblastia, *Helicobasidium*, *Helicogloea*

farinacea, *Sebacina* = Basidiodendron cinereum

farinellum, *-us*, *Corticium*, *Xerocarpus* = Sebacina calcea

farinosa, *Corynoides*, (Holmskj.) per S. F. Gray 1821; *Ramaria* Holmskj. 1781 (SVS, Nye Samml. 1): 299 *plate f. 6* (Denmark) (nom. anam.) (d.n.); ≡ *Paecilomyces farinosa* (Holmskj. per S. F. Gray) Ag. Brown & G. Sm. 1957 (TBS 40): 50 *f. 6*. — Deuteromycetes.

farlowii, *Protomerulius* = ? Stypella papillata

fasciculare, -is, ? Protodontia, *Hericium*, *Hydnum*, *Mucronella*, *Mucronia*, *Protohydnum*

fasciculata, *Clavaria*, Pers. sensu Bon. = Calocera cornea

fasciculata, *Tubercularia*, Tode 1790: 20 *pl. 4 f. 32* (Germany) (nom. anam.) (d.n.) ≡ *Cryptosporiopsis fasciculatus* (Tode per Pers.) Petr. 1923 (Am 21): 187 (with descr.).—Fide Tul. 1865 C. 3: 182 = *Peziza carpinea* Pers. (fruitbody not fully developed) ≡ *Pezicula carpinea* (Pers. per Pers.) Sacc., imperfect state. — Deuteromycetes.

Femsjonia (Dacrymycetales)

femsjoniana, *Guepinia* = Femsjonia pezizaeformis

fendzleri, *Microporus*, *Polyporus*, *Polystictus* = ? Aporpium caryae

fenestratum, *Corticium* = Uthatobasidium ochraceum

fennicus, Dacrymyces

ferax (nom. conf.), *Corticium*, in part = [Achroomyces] *Platygloea* peniophorae

ferruginea, *Tremella*, Schum. 1803: 441 (Denmark) (d.n.) per Pers. 1822, not ~ Sm. 1805 (d.n.) per Hook. 1821.—Fide Fr. 1821: 478; 1823: 219; 1828 E. 1: 230 = *Clavaria contorta* Holmskj. per Fr. ≡ *Clavariadelphus fistulosus* var. *contortus* (Holmskj. per Fr.) Corner 1950: 273 *f. 102*. — Clavariaceae.

ferruginea Sm., *Gyraria*, *Tremella* = Tremella foliacea

fertillissima, *Dacrymycella*, Bizzoz. 1885 (AIv VI 3): 309 (Italy) (nom. anam.).—The author thought this to represent a conidial state of *Calloria* Fr. or *Dacrymyces*, apparently in error. — Deuteromycetes.

filamentosa, *-us*, *-um*, *Pellicularia* (Pat. apud Pat. & Lag.) D. P. Rog. 1943, misapplied; *Hypochnus* Pat. apud Pat. & Lag. 1891 (BmF 7): 163 *pl. 11 f. 2* (Ecuador) (**80**), not ~ Burt 1926; *Ceratobasidium* L. Olive 1957 (incomplete reference: n.v.p.), misapplied; sensu D. P. Rog., in part = Thanatephorus cucumeris

filicina, ? Protodontia

filicinum, Herpobasidium, *Gloeosporium*, *Helicobasidium*

fimbriata, *Tremella* = Tremella foliacea

fimetaria, *-um*, [Achroomyces], *Exobasidium*, *Helicobasidium*, *Platygloea*, *Tremella*

fimicola, *Achroomyces*, *Platygloea* = [Achroomyces] *Platygloea* fimetaria

fissa, *Guepinia*, Berk. 1843 (AM 10): 383 *pl. 12 f. 15*, in part ("Malacca and Siam"). —An alien, reported from a hothouse at Berlin by P. Henn. 1899 (VBr 40): 118. — Fide Bres. 1911 (Am 9): 273 & McNabb 1965 (NZB 3): 63, 64 = *Guepinia*/*Dacryopinax spathularia*, *q.v.*

flabellum, *Dacrymyces* = Dacrymyces palmatus

flaccida, *Tremella* = Exidia glandulosa

flammea, Schaeff., *Calocera*, *Clavaria* = Calocera viscosa

flavescens, *Pellicularia*, (Bon.) D. P. Rog. 1943, misapplied; *Hypochnus* Bon. 1851: 160 (Germany); *Corticium* Wint. 1882 & *Botryobasidium* D. P. Rog. 1935, misapplied.—Nomen dubium. Sensu Fuck. = Uthatobasidium fusisporum

flavescens, *Tubercularia* = Ditiola radicata

flavida, *Calocera* = Calocera furcata

flavidula, *Tremella* = ? Tremella lutescens

flexilis, see *fluxilis*

fluviatilis, *Tremella*, Rox. Clem. 1807 (d.n.): ≡ *Tremella fluviatilis gelatinosa* & *uterculosa* Dill. 1741: 54 *pl. 10 f. 16* (England); *Tremella* Streinz 1861 (syn.).—Fide L. 1753: 1158 (as to 'basionym') = *Tremella verrucosa* L., *q.v.*

fluxilis, *Tremella*, (Fr.) Streinz 1861 ("*flexilis*"; syn.) ≡ *Tremella sarcoides* var. *fluxilis* Fr. 1822: 218 (Sweden) (nom. anam.).—*Tremella sarcoides* Fr., *q.v.*

foliacea, Tremella, *Exidia*, *Gyraria*, *Naematelia*, *Ulocolla*; sensu Bref. = Exidia saccharina

foliicola, *Tremella*, Fuck. 1870 (Jna 23–24): 402 (Germany) (nom. anam.).—Fide Sacc.

1884 (SF 3): 699 = *Hainesia rubi* (Westend.) Sacc. — Deuteromycetes.

foliodistortum, *Herpobasidium*, Gould apud Kent & Melh. 1943 (RIa 1942–3[1]): 136 (lacking Latin description: n.v.p.).—Fide Gould 1945 (IaJ 19): 317 = *Herpobasidium deformans* (p. 158).

fragiformis, *Dacrymyces*, *Naematelia*, *Tremella* = Tremella encephala

fraxini, [Thanatephorus], *Rhizoctonia*

friesiana, *Exidia* = Exidia pithya

friesii Weinm., *Cyphella* = ? Femsjonia pezizaeformis

friesii, *Pilacre*, Weinm. 1834 (Li 9): 413 (U.S.S.R., Russia), not ~ Weinm. 1832. —Nomen dubium. Listed by Shear & Dodge 1925 (JaR 30): 414, 415 as synonym of *Pilacre faginea* [≡ *Phleogena faginea*], but the original description does not agree with this determination.

frondosa Fr., Tremella, *Naematelia*; sensu Tul. = Tremella foliacea; sensu Bon. = Tremella mesenterica; sensu Quél. = ? Tremella cerebrina

frondosa, *Tremella*, Roth 1806: 348 (Germany) (generic name n.v.p.), not ~ Fr. 1822; *Palmella* Lyngb. 1819. — Algae.

frustulosum, *Corticium* = Uthatobasidium ochraceum

fucata, *Tremella*, Gmel. 1791 (d.n.), Humb. 1793 ("*facata*", error); ≡ *Tremella cinnabarina* Bull., *q.v.*

fuciformis, *Tremella*, Berk. 1856 (HJB 8): 277 (Brazil).—An alien, occasionally found in hothouses. — Descriptions & illustrations: A. Möll. 1895 (BMS 8): 115, 170 *pl. 1 f. 5*, *pl. 4 f. 13*; P. Henn. 1899 (VBr 40): 113, 117; Pilát 1928 (MP 5): 86 *fig.*; &c.

fugacissima, Sebacina, *Exidiopsis*; sensu Whelden = Sebacina sublilacina

fugax, *Collema*, *Lichen*, *Parmelia* = Exidia plana

fugax, Tulasnella, *Corticium*, *Pachysterigma*, *Prototremella*

fulva, Exidia

fungiformis, *Tremella* = Exidia recisa

furcata, Calocera, *Clavaria*

fusarioides, *Dacrymyces*, (Berk.) Bon. 1864 (syn.); *Peziza* Berk. 1837 (MZB 1): 46 *pl. 2 f. 4* (England) ≡ *Calloria fusarioides* (Berk.) Fr.—Cf. Dennis 1960: 121. — Discomycetes.

fusca, *Rhizoctonia* = Thanatephorus cucumeris

fusca, *Tremella*, (DC.) Poir. 1808 (d.n.), not ~ (With.) Steud. 1824 (n.v.p.), not ~ Lloyd 1917; ≡ *Gymnosporangium fuscum* DC. 1805: 217 (basionym). — Uredinales.

fusca, *Tremella*, (With.) Steud. 1824 (syn.), not ~ (DC.) Poir. 1808 (d.n.), not ~ Lloyd 1917; *Tremella arborea* var. *fusca* With. 1792: 224 (England) (d.n.).— Steudel referred *Tremella fusca* as synonym to [*T.*] "*ustulata*" which is evidently an error for *T. undulata* Hoffm. — An *Tremella foliacea*.

fuscoviolacea, Tulasnella

fuscoviolaceum, Septobasidium, *Helicobasidium*

fusispora, Tremella ('Microtremella')

fusispora, *-us*, -um, Uthatobasidium, *Corticium*, *Hypochnus*, *Pellicularia*, *Peniophora*; sensu Höhn. & L. = *Jaapia ochroleuca* (Bres. apud Brinkm.) Nannf. & Erikss. (not listed), Coniophoraceae

galeata, *Tremella*, (Holmskj.) per Pers. 1822; *Clavaria* Holmskj. 1799: 25 *pl.* [*10*] (Denmark) (nom. anam.) (d.n.). — Fide Fr. 1822: 218 = *Tremella sarcoides* Fr. (var.), *q.v.*

gallaicus, *Dacrymyces* = Dacrymyces minor

galzinii, Bourdotia, *Bourdotia pululahuana* subsp., *Exidiopsis*, *Sebacina*

galzinii, Septobasidium

gangliformis, *Dacrymyces* = Dacrymyces enatus

gangliformis, *Tremella* = [Tremella ('Microtremella')] *Sebacina* sphaerospora

Gausapia = Septobasidium

gelatinosa Bull., *Exidia*, *Peziza* = Exidia recisa

gelatinosa, *-us*, -um, Scop., Pseudohydnum, *Exidia*, *Hydnogloea*, *Hydnum*, *Steccherinum*, *Tremellodon*

gelatinosa Holmskj., **Clavaria* Fr. 1821 (syn.), *Ramaria* = Calocera viscosa

gelatinosa, *Thelephora* = Sebacina incrustans

gelatinosum, *Hydnum*, Latourr. = Pseudohydnum gelatinosum,

gemmata, *Exidia*, *Naematelia*, *Tremella* = Myxarium hyalinum

genistae, *Tremella* = Tremella exigua

gigaspora, *Clavaria* = Tremellodendropsis tuberosa

gilvescens, *Poria*, Bres. 1908 (Am 6): 40 (Europe), Polyporaceae. — Sensu Overh. = Aporpium caryae

glacialis, *Tremella* = Tremella ('Microtremella') grilletii

glaira, [Sebacina], *Exidiopsis*, *Tremella*

glandulosus, *Agaricus*, "Bull. . . . tab. 426" is cited by Oud. 1923 E. 4: 799 as synonym of *Exidia glandulosa* through confusion with *Tremella glandulosa* Bull. *pl. 420.*

glandulosa (Bull. per St-Am.) Fr., Exidia, *Auricularia*, *Spicularia*, *Tremella*; sensu Fr., in part = Exidia plana

glandulosa Neuh., *Exidia* = Exidia plana

glauca, *Tremella* = ? Exidia albida

glaucopallida, *Exidia*, P. Karst. 1868 (Nfe 9): 374 (Finland); *Tremella* P. Karst. 1889.—Nomen dubium.

Glenospora = Septobasidium

globosa Hedw., see *globulosa*

globosa, *Tremella*, Weiss 1770: 28 (generic name n.v.p.), not ~ (Farl.) Arth. 1901 (Uredinales); ≡ *Ulva granulata* L. 1753: 1164 (Sweden) ≡ *Botrydium granulatum* (L.) Grev. — Xanthophyceae.

globulosa, *Tremella*, Hedw. 1798: 217 *pl. 36 fs. 1–6* (d.n.) (n.v.), Ag. 1824: 29 ("*globosa*"; syn.), not ~ Speg. 1880.—Fide Roth 1806: 338 = *Rivularia dura* Roth. — Nostocaceae heterocysteae.

globulus, *Naematelia*, Corda 1837 I. 1: 25 *pl. 7 f. 299* (Czechoslovakia, Bohemia); *Tremella* Quél. 1888, not ~ Bref. 1888.—Nomen dubium. Fide Neuh. 1936 (PM 2a): 29 = *Dacrymyces* sp., but I cannot follow him in this. — Sensu Lloyd = Myxarium hyalinum

globulus Bref., Tremella

gloeocystidiata, *Sebacina* = Basidiodendron cinereum

gloeophora, Sebacina

Gloeosebacina = Stypella

Gloeotulasnella = Tulasnella

Glomerularia Peck = ? Herpobasidium

Glomopsis = ? Herpobasidium

glossoides Pers., Calocera, *Clavaria*, *Dacryomitra*, *Tremella*; sensu Cost. & Duf. = [Calocera] *Dacryomitra* pusilla

glossoides Bref., *Dacrymyces*, *Dacryomitra* = [Calocera] *Dacryomitra* pusilla; sensu Lloyd = *Dacrymyces* sp. (not listed); sensu Brasf. (not listed)

goodyerae-repentis, [Thanatephorus], *Rhizoctonia*

gracilis, *Rhizoctonia* ≡ [Thanatephorus] *Rhizoctonia* sphacelati

gracillima, *Calocera*, Weinm. 1836: 517 (U.S.S.R., Russia)—Nomen dubium fide McNabb 1963 (NZB 3): 54.

grambergii, *Exidia* = Exidia glandulosa

graminicola, Exobasidiellum, *Exobasidium*

graminicola, Helicogloea, *Saccoblastia*

graminis, *Exobasidium*; error (Pat. 1900: 36) for *E. graminicola q.v.*

grandinioides, Basidiodendron, *Bourdotia*, *Sebacina*

grandis, *Tremella* = Tremella foliacea

grantii, *Stereum* = Tremellodendropsis tuberosa

granulata, *Tremella*, (L.) Huds. 1778 (generic name n.v.p.); *Ulva granulata* L. 1753: 1164 (Sweden); ≡ *Botrydium granulatum* (L.) Grev. — Xanthophyceae.

granulosa, *Tremella*, Retz. 1769 (SVH 30): 250 (Sweden) (d.n.), not ~ Bull. 1791 (d.n.). —Fide Fr. 1823: 414 = *Sphaeria conglobata* Fr. per Fr. ≡ *Cucurbitaria conglobata* (Fr. per Fr.) Ces. & Not. — Pyrenomycetes.

granulosa, *Tremella*, Bull. 1791 H.: 227 [*pl. 499 f. 2*] (generic name n.v.p.), not ~ Retz. 1769 (d.n.).—Fide Zahlbr. 1925 C. 3: 97 = *Collema pulposum* Ach., but cf. Degelius 1954 (Sbu 13²): 167, "description agrees rather well with [*Collema pulposum*] but the figure suggests . . . probably a *Nostoc* . . . ." — Lichenes or Nostocaceae heterocysteae.

granulosum, *Trichoderma*, Fuck. 1870 (Jna 23–24): 364 (Germany).—Occasionally listed as synonym of *Pilacre faginea* [≡ *Phleogena faginea*], for instance by Lambotte 1884 F.m. 3: 257 because the type distribution had been issued under the name *Onygena faginea*. — Deuteromycetes.

grilletii, Tremella ('Microtremella'), *Exidia*

grisea.—"*Naemaspora grisea* Corda", Crouan 1867: 59 (syn.).—Listed as synonym of *Tremella exigua*. This is an error: *Naemaspora grisea* Pers. 1801: 110 (: Fr. 1832) sensu Corda 1839 I. 3: 26 *pl. 4 f. 68* ("*Nemaspora*") seems to be a species of Melanconiales.

griseorubella, Tulasnella, *Gloeotulasnella*

grisea, Sebacina, *Exidiopsis*, *Thelephora*

Guepinia Fr. = Tremiscus; sensu Bref. = Femsjonia; sensu Ulbrich = *Guepiniopsis*; sensu G. W. Mart. 1936 [1958 (Ta 7): 199, in obs.] = *Dacryopinax* (not listed)

Guepiniopsis (Dacrymycetales)

guttata, [Dacrymyces], *Tremella*

guttifera, *Exidia*, Wallr. 1833: 558 (Germany). —Nomen dubium.

guttulatus, *Aleurodiscus* = Basidiodendron cinereum

Gyraria = Tremella

Gyrocephalus Pers. 1824 [1958 (Ta 7): 200]; lectotype: *Gyrocephalus aginnensis* Pers. ≡ *Helvella sinuosa* Brond. = *Gyromitra esculenta* (Pers. per Fr.) Fr.—A nomen rejiciendum *v. Gyromitra* Fr. — Sensu Bref. = Tremiscus

gyrosa, *Tremella*, Hoffm. 1797–1811 V.s.: 30 *pl. 17 f. 1* (Germany) (d.n.) per Streinz 1861.—Nomen dubium.

harperi, *Dacrymyces* = Dacrymyces lacrymalis

helvelloides, Sebacina, *Corticium*, *Thelephora*

helvelloides, Tremiscus, *Guepinia*, *Gyrocephalus*, *Phlogiotis*, *Tremella*

Helicobasidium (Auriculariineae)

Helicobasis = Helicobasidium

Helicogloea (Auriculariineae)

helicospora, Tulasnella, *Gloeotulasnella*

hellebori, *Hypochnus* = Thanatephorus cucumeris

helleborines-latifoliae, [Thanatephorus], *Orcheomyces*

helleborines-palustris, [Thanatephorus], *Orcheomyces*

hemisphaerica, *Tremella*, L. 1753: 1158 (generic name n.v.p.), not ~ Schleich. ex Secr. 1833.—Fide Ag. 1824: 25 = *Rivularia atra* Roth. [per Born. & Flah.]. — Nostocaceae heterocysteae.

hemisphaerica, *Tremella*, Schleich. 1821 (nom. nud.) ex Secr. 1833 M. 3: 288 (Switzerland), not ~ L. 1753 (generic name n.v.p.). —Nomen dubium. Fide Bandoni 1961 (AMN 66): 327 = *Tremella virescens* Bref. This suggestion is not acceptable.

Herpobasidium (Auriculariineae)

Heterochaete (Tremellineae)

Heterochaetella (Tremellineae)

Heteromyces L. Olive = Oliveonia

Heteroradulum Lloyd 1917 (not accepted: n.v.p.; "McGinty") [1958 (Ta 7): 202]. —Introduced in connection with *Radulum kmetii* Bres. = *Eichleriella deglubens* Lloyd. (p. 166).

Hirneola (Auriculariineae)

Hirneolina = ? Heterochaete

hispanica, Tremella

holospirum, Helicobasidium

horkelii, *Actinomyce*, F. Meyen 1827 (Li 2): 442.—The true nature of this species has not yet been stablished: it can be accepted with confidence, I believe, as non-basidiomycetous and perhaps even as non-vegetable. Cf. also von Heyden 1839 (Li 13, Litt.): 51.

Hormomyces = Tremella

hyalina, *-us*, -um, Pers., Myxarium, *Dacrymyces*, *Tremella*; sensu Bourd. & G. = Dacrymyces caesius; sensu Lloyd = ? Dacrymyces tortus

hyalina.—"*T*[*remella*] *hyalina* Boud.", Cost. & Duf. 1895: 289.—An error for *T. hyalina* 'Pers'?

hyalina, Tulasnella, *Gloeotulasnella*

hyalinogriseum, *Protohydnum*, Romell ("in herb."), Lundell 1932 (SSN 22): 33 (nom. nud.), Bourd. 1932 (BmF 48): 206 (syn.). —Fide Kühner apud Bourd., l.c. = *Protohydnum piceicola* ≡ *Protodontia piceicola* (p. 172).

hyalinus, *Dacrymyces*, Lib. 1837 P.A.: No. 333 [cf. Matthieu 1853: 263] (Belgium) (nom. anam.) ≡ *Linodochium hyalinum* (Lib.) Höhn. 1909 (SbW 118): 1238, 1239. — Deuteromycetes.

Hydnogloea = Pseudohydnum

hydnoides, *Tremella*, Jacq. 1778 (MaJ 1): 145 *pl. 16* (generic name n.v.p.).—Fide Lister 1911: 25 = *Ceratomyxa fruticulosa* (O. F. Müll.) Macbr. — Myxomycetes.

Hydrabasidium Park.-Rh. 1954 (nom. nud.) [1957 (Ta 6): 73]; holotype: *Corticium atratum* Bres. ≡ *Oliveonia atrata* (p. 186).

Hygromitra Nees 1816 ex Fr. 1821 [1958 (Ta 7): 205]; holotype, *Tremella stipitata* Bosc, q.v.—Fries originally included *Hygromitra* [= *Leotia* Fr.] in the Tremellini.

Hymenella Fr. 1821 (nom. nud.) (n.v.), 1822: 233 (nom. anam.), not ~ Moç. & Sessé ex DC. 1824 (Caryophyllaceae); lectotype: [*Hymenella ebuli* Fr. ≡] *Hymenella vulgaris* Fr.—Fries soon modified this generic name into *Hymenula* Fr. 1828 E. 2: 37, which name has come into general use. However, there is no nomenclative reason to reject the original form. The use of '*Hymenella*' (with retention of *Hymenula* as a distinct genus) for an excluded species [*Hymenella arundinis* (Pers.) Fr., *q.v.*] resulted in the later homonym *Hymenella* Vestergr. — Deuteromycetes.

Hymenula Fr. ≡ *Hymenella* Fr., *q.v.*

hypnophila, *Calocera*, Saut. 1841 (Fl 24^{1}): 317 ("*Caloceras hypnophilum*") (Austria).—No-

men dubium. McNabb 1965 (NZB 3): 54 thinks of *Eocronartium muscicola*.

hypochnoides (nom. conf.), *Stypella*, in part = Helicobasidium sp.

hypogaeus, *Irpex* = Sebacina incrustans

ilicis, *Tremella*, Myxarium hyalinum

impressa, *Exidia*, *Tremella* = Exidia glandulosa; sensu Bourd. & G. = Exidia recisa

incarnata, *-um*, J.-Ols., *Corticium*, *Pachysterigma*, *Tulasnella* = ? Tulasnella violea

incarnata, *Eichleriella*, *Hirneolina* = Eichleriella alliciens

incarnata Bres., *Tulasnella* = Tulasnella violea

incarnatum, *Corticium*, (Pers. per Fr.) Fr. 1838; *Thelephora* Pers. 1801: 573 (Germany) (d.n.) per Fr. 1821; ≡ *Peniophora incarnata* (Pers. per Fr.) P. Karst. 1889, Mass. 1889, Corticiaceae. — Sensu Tul. ["*Corticium incarnatum* (*pinicola*)"] = Tulasnella violea

incarnatus, *Dacrymyces*, P. Karst. 1887 (Mfe 14): 83 (Finland).—Nomen dubium.

inclusa, Sebacina

inclusa, Tulasnella, *Gloeotulasnella*

inconspicuum, *Helicobasidium* = Helicogloea lagerheimii

incrustans, *Clavaria* = Sebacina incrustans

incrustans, Sebacina, *Corticium*, *Thelephora*

indecorata, Tremella, *Exidia*; sensu P. Karst. = *Exidia* sp. (not listed)

insigne, *Ditangium* = Craterocolla cerasi

interna, Sebacina

intestinalis, *Tremella*, O. F. Müll. 1782 (Fd 5 / F. 15): 5 *pl. 885 f. 2* (generic name n.v.p.).—Fide Ag. 1824: 19 = *Nostoc muscorum* Ag. [per Born. & Flah.]. — Nostocaceae heterocysteae.

intestiniformis, *Tremella*, Plan. 1788: 270 (Germany) (generic name n.v.p.) [cf. 1788 (BM 2 / 4. Stück): 165].—Nomen dubium. *Nostoc* sp. ? (but cf. 'albida' in the description).

intumescens, Tremella, *Exidia*, *Gyraria*; sensu Bon. = Exidia plana; sensu Britz., P. Karst. = *Exidia* spp. (not listed)

invisibilis, Sebacina

involucrum, *Corticium* = Basidiodendron deminutum

involuta, *-us*, *Dacrymyces*, Schw. 1832: 186 (U.S.A., North Carolina); *Arrhytidia* Coker 1928. — Sensu auctt. nonn. = Dacrymyces corticioides

japonica, *Naematelia*, *Tremella* = Tremella encephala

japonicum, *Exobasidium*, Shirai 1896 (Japan) (**131**, **134**). — Shirai 1896 (BMT 10): 52 *pl. 4 fs. 9–11*; A. L. Sm. 1912 (TBS 3): 374; Laubert 1925 (GwB 29): 429 *fs. 1, 2*; 1932: 287 *fs. 72, 73*; Vienn.-B. 1949: 1187 *fs. 539, 540*; S. Ito 1955: 53 *f. 40*; Graafland *1957*, 1960 (Abn 9): 352 *fs. 1–6*, *pl. 1, fs. A, B* (*Exobasidium*); McNabb 1962 (TNZ 1): 267 *f. 2: 1, pl. 1 f. 2* (*Exobasidium vaccinii* var.).

M.—*Exobasidium azaleae* Peck sensu Ritz. Bos 1901 (LbT 9): 77 (perhaps first record for Europe). — Maubl. *in* Bourd. & G. 1928: 76; Göttgens 1960 (PhZ 38): *fs. 8, 9* (on p. 409).

M.—*Exobasidium discoideum* J. B. Ell. sensu Petri 1907. — Petri 1907 (Am 5): 341 *fs. 1–8*; Eftimiu & Kharbush 1927 (RPv 14): 62, 75 *fs. 1, 6, 7, tplate fs. 1–13*.

judae, *Auricula* = Hirneola auricula-judae

judae, *Auricularia* = Hirneola auricula-judae

juglandis, *Exobasidium*, (Béreng.) Pat. 1900; *Fusidium* Béreng. 1847 (MTr 5): 49 (Italy) nom. anam.); ≡ *Microstroma juglandis* (Béreng.) Sacc. — Deuteromycetes.

juniperi, *Tremella*, (Pers.) Streinz 1861 (syn.; error); *Puccinia juniperi* Pers. 1794 (NMB 1): 118 / 1797 T.: 38 *pl. 2 f. 1* (Germany) (d.n.) per Pers. 1801 = *Gymnosporangium fuscum* DC. — Uredinales.

juniperina, *Tremella*, P. Karst. 1869 F.F.: No. 812 (with description), not ~ L. 1753 (generic name n.v.p.; Uredinales); *Exidia* P. Karst. 1889.—The following note is by Dr. R. W. G. Dennis (in litt.): The material [K] is quite good, yellowish when dry, hyaline when soaked up, with abundant basidia, some empty and cruciately septate, others with sterigmata but I can find no spores. The small basidia, only about 9 μ diameter, small carpophores and colour suggest *Exidia grilletii* (Boud.) Neuh. to me as to [Dr. D. A. Reid]. The host is odd if so but Karsten's hosts were often wrong. I suspect the 'sporae sphaeroideae' were the basidia." — This last supposition agrees with Karsten's own conclusion: in later work [1889 (BFi 48) : 452] he replaced 'spores' by 'basidia', 10–12 μ in diam. — Tremellineae.

juniperina, *Tremella*, L. 1753: 1157 (Sweden)

(d.n.), Pers. 1801: 625 (generic name n.v.p.), not ~ P. Karst. 1869; *Gyraria* (L. per Mart.) S. F. Gray 1821; ≡ *Gymnosporangium juniperina* (L.) per Mart. 1817.—Fide Hylander & al. 1953 (ObL 1[1]): 15 a nomen ambiguum in as much the precise identity within *Gymnosporangium* cannot be established. Often identified with *Gymnosporangium tremelloides* Hartig. *Tremella juniperina* emend. Huds. included also *Tremella mesenterica*, fide Fr. 1822: 214. — Uredinales.

juratensis, *Gyrocephalus* = Tremiscus helvelloides

karstenii Lind, *Exobasidium* = Exobasidium karstenii

karstenii Sacc. & Trott., Exobasidium

Killermannia Neuh. apud Killerm. 1940 (DrG 21): 81 (nom. anam.; incidental mention: n.v.p.); monotype: *Hyaloria europaea* Killerm., *q.v.*

killermannii, *Helicobasidium*, *Stypinella* = Saccoblastia farinacea

klebahnii, *Moniliopsis* = Thanatephorus cucumeris

kmetii, *Eichleriella*, **Heteroradulum* Lloyd 1917, *Hirneolina*, *Radulum* = Eichleriella deglubens

Kordyanella Höhn. 1904 [1956 (Re 4): 117; 1963 (Ta 12): 156] (nom. anam.); monotype: *Kordyanella austriaca* Höhn., *q.v.*

Kriegeria (Auriculariineae)

kruchii, *Exobasidium*, "Wuill.", Sacc. & Trav. 1910 (SF 19): 693.—An error for *Exoascus kruchii* Vuill. 1891 (Rm 13): 141 ≡ *Taphrina kruchii* (Vuill.) Sacc. — Taphrinales.

laccata, Sebacina, *Exidiopsis*

lacera, *Tremella*, (Sw. apud Ach.) Streinz 1861 ("Roth" in error; syn.) ≡ *Lichen lacerus* Sw. apud Ach. 1795 (SVH 16): 18, not ~ Gmel. 1791.—Fide Zahlbr. 1925 C. 3: 136–137 (for *L. lacerus*) = *Leptogium lichenoides* (L.) Zahlbr. Streinz's recombination apparently originated through confusion with '*Lichen tremella* Roth'. — Lichenes.

laciniata, *Sebacina*, (Schaeff. per St-Am.) Bres. 1903, misapplied; *Clavaria* Schaeff. 1774: 122 [*pl. 291*] (d.n.) per Mérat 1821, misapplied, not ~ Ehrenb. apud Fic. & Sch. 1823; = *Clavulina cristata* (Holmskj. per Fr.) J. Schroet., Clavulinaceae. — Sensu Bull., Bres. = Sebacina incrustans. — Cf. (**54**).

laciniata, *Tremella*, Bull. 1791 H.: 226 [*pl. 499 f. 1*] (generic name n.v.p.), not ~ With. 1776 (generic name n.v.p.).—Fide Degelius 1954 (Sbu 13[2]): 167 "probably a species of Collemataceae (*Collema cristatum* ?)". — Lichenes ?

laciniata, *Tremella*, With. 1776 (generic name n.v.p.), not ~ Bull. 1791 (generic name n.v.p.); ≡ *Tremella terrestris cornuta* Dill. 1741: 52 *pl. 10 f. 13* (England).—Dr. R. A. Maas Geesteranus suggested (private communication): detached thalli of *Evernia prunastri* (L.) Ach. that were collected on the ground. — Lichenes.

lacrymalis, Dacrymyces, *Gyraria*, *Tremella*; sensu Corda = Dacrymyces stillatus; sensu Sommerf. = Dacrymyces tortus

lactea, *Auricularia*, *Auricularia auricula-judae* var. = Hirneola auricula-judae

lactea, *Tremella*, Hedw. f. 1802 O.: *pl. 2*.—An error for *T. nivea* Hedw. f. (*q.v.*), the name used in the text.

lactea, Tulasnella

laevis, Dacrymyces

laevisporum, *Dermatangium* = ? Tremella steidleri

lagerheimii, Helicogloea, *Platygloea*

lanuginosa, [Thanatephorus], *Rhizoctonia*

Laschia Fr. = Hirneola

lasioboli, Cystobasidium, *Iola*

lauri Brot., *Calocera*, *Clavaria* = Exobasidium lauri

lauri Geyler, Exobasidium

ledi, Exobasidium

lentiformis, *Ditiola*, *Helvella* = ? Ditiola radicata

letendreana, *Heterochaete*, *Thelephora*, *Sebacina* = Sebacina calcea

leucophaea, Eichleriella, *Exidiopsis*, *Hirneolina*

leveillei, *Peziza* = Tremiscus helvelloides

lichenoides, *Merulius* = Tremella foliacea

lichenoides, *Tremella*, L. 1753: 1157 (generic name n.v.p.); *Conchites* Paul. 1793 (generic name n.v.p.), misapplied ?; ≡ *Leptogium lichenoides* (L. per Wulf.) Zahlbr. 1935 C. 3: 137. — Lichenes. — Sensu Paul., cf. Lév. 1855: 99.

ligularis, *Tremella*, Bull. 1788: *pl. 427 f. 1* (France) (d.n.) per Pollini 1824.—Fide Kern 1911 (BNY 7): 464 = *Gymnosporan-*

gium clavariaeforme (Wulf.) per DC. — Uredinales.

ligulata, Tremella, Schum. 1803: 442 (Denmark) (d.n.) per Pers. 1822.—Fide Fr. 1822: 219 = *Pistillaria quisquiliaris* (Fr.) per Fr. ≡ *Typhula quisquiliaris* (Fr. per Fr.) P. Henn. — Clavariaceae.

lilacea = *lilacina* (Wulf.) Schrank, *Tremella*

lilacina, Helvella, Ombrophila, sensu Quél. = Craterocolla cerasi

lilacina, Rhizoctonia, Sappa & Mosca 1954 (All 2): 184 *f. 6* (Somalia) (nom. anam.). —Saks. & Vaart. 1961 (CJB 39): 632 erroneously stated that this was found in Italy.

lilacina, Tremella, (Wulf.) Schrank 1789 (in error as "*lilacea*"; d.n.); *Helvella* ("*Elvela*") Wulf. 1786 (CoJ 2): 347 (Austria) (d.n.); *Craterocolla* Sacc. 1888, misapplied; *Ditangium* Pat. 1900, misapplied; ≡ *Ombrophilia lilacina* (Wulf. per Fr.) P. Karst., Discomycetes. — Sensu Quél. = Craterocolla cerasi (**26**)

lilacina, -um, J. Schroet., *Tulasnella, Corticium, Prototremella* = Tulasnella violea

lilacinum, Corticium, Post (in herb.).—Fide Neuh. 1936 (ABS 28[1]): 54 = *Tulasnella violea* (p. 193).

lilacinum, Quél., *Corticium, Corticium sanguineum* var. = Helicobasidium brebissonii

lilacinus, Dacrymyces = Myxarium hyalinum

limbata, Tremella, O. G. Costa *1857:* 261 (Italy, Sicilia) [cf. Trott. 1925 (SF 23): 580].—Nomen dubium.

linearis, Tremella, Pers. 1822: 109 (Europe) (nom. anam).; *Hymenella* Fr. 1822; *Hymenula* Fr. 1832.—The correct name seems to be *Hymenella linearis* (Pers.) Fr. See also under *Hymenella*. — Deuteromycetes.

lithophila, Tremella, Willd. 1788 (MB 2 / 4. Stück): 17 *pl. 4 f. 16* (Germany) (d.n.). —Nomen dubium. — Algae ?

livescens, Dendrodochium, Bres. 1898 F.t. 2: 64 *pl. 174 f. 1* (Italy) (nom. anam.).—Fide Bres., l.c., "vix dubie" the imperfect state of *Sebacina livescens*. — Deuteromycetes.

livescens, Protohydnum, Bres. (in litt.) apud Bourd. 1932 (BmF 48): 205 (syn.) ≡ *Protohydnum lividum* Bres. = *Protodontia subgelatinosa* (p. 172).

livescens, Sebacina, *Exidiopsis, Thelephora*

lividum, Protohydnum, **Protodontia* Park.-Rh. 1956 = Protodontia subgelatinosum

lobata, Auricularia, Exidia, Patila = Auricularia mesenterica

loeselii, Orcheomyces, B. Huber 1921 (SbW 130): 323 *plate fs. 3–5* (Austria) (generic name not definitely accepted, "Er gehört zur Sammelgattung *Rhizoctonia repens* Bernard ...": n.v.p.). — Deuteromycetes.

longisporus, Dacrymyces

lonicerae, Glomerularia, Glomopsis = Herpobasidium deformans

lupini, [Thanatephorus], *Rhizoctonia*

lutea, Tremella, Plan. 1788: 270 (Germany) [cf. 1788 (BM 2 / 4. Stück): 165].—Nomen dubium. *Dacrymyces* sp.?

luteo-alba, Ditiola, Femsjonia, Guepinia = Femsjonia pezizaeformis

luteogriseum, Basidiodendron = ? Basidiodendron eyrei

lutea mesenterica, Tremella, Secr. 1833 M. 3: 285 (double epithet: n.v.p.) ≡ *Tremella mesenterica* var. *lutea* Bull. = *Tremella* cf. *mesenterica* Retz. per Fr.

lutescens Bref., *Dacrymyces* = Dacrymyces lacrymalis

lutescens Neuh., *Dacrymyces* = Dacrymyces lacrymalis

lutescens, Tremella, *Tremella mesenterica* var.; sensu Quél. = Guepiniopsis buccina; sensu Bref. = Tremella mesenterica

lycoperdoides, Tremella, Humb. 1793: 125 *pl. 2 f. 3* (Germany) (d.n.) per Steud. 1824. —Nomen dubium. Cf. *Endogone* Link per Fr.

lythri, Dacrymyces, Desm. 1846 [cf. Desm. 1847 (ASn III 8): 190] (France) (nom. anam.) ≡ *Hainesia lythri* (Desm.) Höhn. 1918 (H 60): 164 [& cf. Höhn. 1906 (SbW 115): 687], the imperfect state of *Discohainesia oenotherae* (Cooke & Ell.) Nannf. — Deuteromycetes.

macrochaete, Heterochaete

macrospermum, see *megaspermum*

macrospora, Mycogloea, *Dacrymyces*

maculati, [Thanatephorus], *Orcheomyces*

magnusii, Exobasidium = Exobasidium dubium

major, Clavaria, (Pers.) Steud. 1824 (syn.); *Clavaria cornea* var. Pers. 1801 (d.n.); ≡ *Clavaria flava, gelatinosa* ... O. F. Müll. 1777 (BbG 3): 351 *pl. 9 fs 5, 6* (Denmark) (non-binomial phrase-name).—This is apparently a species of *Calocera*.

marianii, Septobasidium
medicaginis DC., *Rhizoctonia*, *Sclerotium* = Helicobasidium brebissonii
medicaginis, *Sclerotium*, Biv. 1816 S. 4: 26 *pl. 6 f. 2* (Italy, Sicilia) (generic name n.v.p.), not ~ (DC. per St-Am.) Spreng. 1827.—Listed by some authors (Oud. 1921 E. 3: 855) as synonym of *Rhizoctonia medicaginis*, but this is certainly not correct. — Apparently root-tubercles.
medularis, **Clavaria* Fr. 1821 (syn.), *Ramaria* = Calocera furcata
megaspermum, *Exobasidium*, Lagerh. "in litt. et sched." apud Briosi & Cavara 1896 F.p.: No. 261 as synonym of *Exobasidium vaccinii-uliginosi* (p. 207); A. Blytt 1905: 140 ("*macrospermum*") as synonym of *Exobasidium myrtilli* "Thuem.", misinterpreted.
menthae, *Rhizoctonia*, B. & Br. 1861 (AM III 7): 455 (England).—The protologue suggests *Rhizoctonia crocorum*, but the type does not bear this out: compare Buddin & Wak. 1927 (TBS 12): 137.
merulina, *Ditiola*, *Guepinia*, *Guepiniopsis*, *Peziza* = Guepiniopsis buccina
mesenterica, *-us*, *-um*, Dicks., Auricularia, *Helvella*, *Merulius*, *Oncomyces*, *Patila*, *Phlebia*, *Stereum*, *Thelephora*
mesenterica Schaeff., *Helvella* = Tremella mesenterica
mesenterica Pers., *Tremella* = Tremella mesenterica
mesenterica Retz., Tremella
mesenterica Steud., *Tremella* = Tremella mesenterica
mesentericus, *Dacrymyces* = Femsjonia pezizaeformis
mesenteriformis, *Auricularia* = Auricularia mesenterica
mesenteriformis, *Helvella* = Auricularia mesenterica
mesenteriformis, *Tremella*, Gilib. 1792: 606 (d.n.), not/an ~ Jacq. 1778 (d.n.).
mesenteriformis Jacq., &c., *Tremella* = Tremella mesenterica
mesenteriformis, *Ulocolla* = Tremella foliacea
mesenteroides, *Tremella* = Tremella mesenterica
mesomorpha, *Sebacina* = Sebacina laccata
mespili, *Tremella*, Arth. 1901 (PIA 1900): 135 ≡ *Gymnosporangium mespili* (Arth.) Kern 1911 (BNY 7): 462 *f. 24*. — Uredinales. — This name was originally a recombination of *Aecidium mespili* DC. 1815: 98 (Belgium) (nom. anam.), but since it also included the perfect state [≡ *Gymnosporangium confusum* Plowr.], it is now to be dissociated from its 'basionym'.
metachroa, *Gloeotulasnella* = Tulasnella hyalina
metallica, *Tulasnella* = Oliveonia atrata
meteorica, *Tremella*, Pers. apud Gmel. 1791: 1446 (Germany) (d.n.).—Nomen dubium.
mexicana, *Eichleriella* = Eichleriella alliciens
michelianum, *-us*, *Corticium*, *Hypochnus*, *Septobasidium* = Septobasidium orbiculare
micra, [Achroomyces], *Platygloea*
microbasidia, Sebacina
microspora, [Achroomyces], *Platygloea*
microspora, Tulasnella
microsporus, *Dacrymyces*, P. Karst. 1889 (BFi 48): 459 (Finland).—Nomen dubium.
Microstroma Niessl 1861 [1956 (Re 4): 117; 1963 (Ta 12): 156] (nom. anam.); *Exobasidium* sect. ~ (Niessl) Pat. 1900; monotype: *Fusisporium pallidum* Niessl, *q.v.* — Currently considered to be a genus of Deuteromycetes. — Special literature: Maire, *1913*; Wolf, *1929*.
miculacea, *Tremella*, Wallr. ("olim"), 1833: 260 (syn.) = *Myxarium nucleatum* Wallr. = *Myxarium hyalinum* (p. 171).
miedzyrzecensis, *Platygloea* = [Achroomyces] *Platygloea* sebacea
miliaria, *Dacrymyces* = ? Dacrymyces stillatus
miniata, *Tremella*, Reb. 1804: 284 (Germany) (nom. anam.), not ~ Trog. 1844.—Fide Fr. 1822: 231, in part = *Dacrymyces urticae*, *q.v.* ("cum Tuberc. *Acaciae* confusa"). Reb., l.c., cited "*Tremella urticae* Pers." [≡ *Cylindrocolla urticae* (Pers. per Mérat) Bon.] as synonym.
miniata, *Tremella*, Trog 1844 (MiB): 62 (Switzerland) , not ~ Reb. 1804 (d.n.). —Nomen dubium.
minor, Dacrymyces
minor, *Stypella*, A. Möll. sensu G. W. Mart. = [Tremella ('Microtremella')] *Sebacina* sphaerospora. — Cf. (**72**).
minuta, *Tremella*, Schleich. 1821 (Switzerland) (nom. nud.).—See under *Tremella viridis muscorum* Secr.
minutissima, *Exidia* = Tremella ('Microtremella') grilletii
minutula, *Exidia* = Tremella exigua
Mohortia = Septobasidium
molybdea, Sebacina, *Exidiopsis*

moniliformis, Tremella, Willd. 1787: 420 (Germany) (generic name n.v.p.). —Algae.
Moniliopsis = Thanatephorus
moriformis, Tremella, *Dacrymyces*, ? **Phyllopta* Fr. 1849
mucida, Calocera, (Pers.) Wettst. 1885, misapplied, not ~ Sacc. 1916; *Clavaria* Pers. 1797 C.: 187/55 *pl. 2 f. 3* (d.n.) per Fr. 1821, Clavariaceae. — Sensu Hornem. = an unidentified species; sensu Wettst. = Calocera furcata
mucida, Calocera, Sacc. 1916: 1221 (Denmark). —Nomen dubium. Name introduced for *Clavaria mucida* Pers. sensu Hornem. 1806 (Fd 8 / F. 22): 8 *pl. 1305 f. 1* to replace *Calocera furcata* with which Fr. 1838: 581 had identified it. Wettstein (see preceeding entry) had done the same but in contradistinction to Saccardo he did not expressly exclude Persoon's species from the conception. — Sensu Sacc. = Calocera furcata
mucida, Ditiola, S. Schulz. 1860 (VW 10): 322 *pl. 1 fig.* (Yugoslavia, Slavonia) (nom. anam.). — Fide Juel 1922 (ABS 18[6]): 10, 12 = *Crinula caliciiformis* (Fr.) per Fr., "jedenfalls nahestehend". — Deuteromycetes.
Muciporus ((nom. conf.), in part = Tulasnella
mucoroides, [Thanatephorus], *Rhizoctonia*
mucoroides, Tremella, Bull. 1791 H.: 228 [*pl. 499 f. 4*] (France) (d.n.) per Pollini 1824, Steud. 1824, not *T. mucoroidea* Pat. 1897. —Fide Link 1824: 34 & Fr. 1832: 433 = *Bactridium flavum* Kunze per Fr. — Deuteromycetes.
mucosa, Bourdotia = Basidiodendron deminutum
multiseptatus, Dacrymyces = Dacrymyces palmatus
murina, Sebacina, Basidiodendron cinereum
Musciclavus = Eocronartium
muscicola, Eocronartium, *Ceratella*, *Clavaria*, **Cronartium* Pilát 1957 (syn.), *Pistillaria*, *Typhula*
muscigena, Anthina, Atractiella = Eocronartium muscicola
muscigena, Clavaria, Eocronartium, Typhula = Eocronartium muscicola
muscigena, Protopistillaria = Eocronartium muscicola
muscorum, Tremella, Schleich. 1821 (Switzerland) (nom. nud.).—See under *T. viridis muscorum* Secr.
mycetophila, Tremella, Peck 1876 (RNS 28): 53 *pl. 1 f. 4* (U.S.A., New York); *Exobasidium* Burt 1901 (BTC 28): 287 *pl. 23*.—Fide Burt 1915 (AMo 2): 656, "a teratological production of *Collybia dryophila*". — Descriptions & illustrations: Peck 1901 (RNS 54): 172 (*Tremella*); Burt, l.c., 1901; Boud. 1917 (BmF 33): 13 *pl. 2 f. 2* (*Exobasidium*). — Also reported from Europe: Ramsb. 1933 (TBS 18): 253; O. Rostr. 1916 (DbA 2[5]): 24, 1935 (DbA 8[8]): 27; Boud., l.c.; &c. — Special literature: Ramsbottom, *1933*.
Mycogloea (Auriculariineae)
mycophaga, Tremella
mycophagum, Ceratobasidium, M. P. Christ. 1959 (DbA 19): 45 *f. 39* (Denmark).— Excluded; probably a species of *Galzinia* Bourd. — Corticiaceae.
myosurus, Tremella, (Ducluzeau) Hornem. 1818 (generic name n.v.p.); *Batrachyospermum* Ducluzeau 1805: 76 (France); *Palmella myosurus* (Ducluzeau) Lyngb., 1819. — Algae.
myriadeus, Dacrymyces, (Bourd. & G.) Neuh. 1936 (syn.); *Dacrymyces deliquescens* var. Bourd. & G. 1909 (BmF 25): 33 (France). —Nomen dubium. Cf. Neuh. 1936 (ABS 28[1]): 39, 45 ("pr. p.?") = *Dacrymyces punctiformis* Neuh. [= *D. tortus* (Willd.) per Fr.].
myricae, Tremella = ? Exidia plana
myrtilli Siegm., Exobasidium
myrtilli Thüm. ex P. Karst., *Exobasidium, Exobasidium vaccinii* f. & subsp. = Exobasidium myrtilli
Myxarium (Tremellineae)
Myxoporus Clem. 1902 (nom. nud. & conf.) [1957 (Ta 6): 84] ≡ *Muciporus* Juel, *q.v.*

Naematelia (nom. conf.), in part = Tremella
Nakaiomyces (nom. conf.), in part = ? Tremella
napae / napaeae / napi, Rhizoctonia = Thanatephorus cucumeris
natans, Tremella, Hedw. 1798: 218 *pl. 36 fs. 7–10* (d.n.) ≡ *Gloeotricha natans* (Hedw.) per Born. & Flah. 1886 (ASn VII 4): 369. — Nostocaceae heterocysteae.
neglecta, Exidia = Exidia plana
neglecta, Tremella, Tul. 1871 (JLS 13): 34; 1872 (ASn V 15): 222 (France); *Naematelia*

Lloyd 1922 (LMW 7): 1150 (incidental mention: n.v.p.).—Nomen dubium: basidia and spores unknown. I do not believe that the following suggestions are correct: Neuh. 1936 (PM 2a): 46, cf. *Exidia grilletii*; Bandoni 1961 (AMN 66): 327 = *Tremella exigua*.

neottiae, [Thanatephorus], *Orcheomyces*, *Rhizoctonia*

nigra, *Exidia*, Opiz 1852 (Czechoslovakia) (nom. nud.).—Cf. Svrček *in* Klášt. & al. 1958: 81.

nigra Bon., *Tremella* = Exidia plana

nigra, *Tremella*, With. 1776 (d.n.), not ~ Bon. 1851; ≡ "*Lichenoides tuberculosum compressum nigrum*, *lignis putridis adnascens* [leg.:] D. Richards. [Ray 1724:] Syn. St. Br. III. p. 71. n. 51" Dill. 1741: 127 *pl. 18 f. 7* (England).—The last mentioned name has been (apparently erroneously) listed as synonym of *Sphaeria tuberculosa* Lightf. and *Lycoperdon nigrum* Huds.

nigrescens, *Achroomyces*, Höhn. 1904 (Am 2): 273 (nom. prov.) ≡ *Stictis betuli* Fr. "... varietas nigrescens in *Tilia*" Fr. 1822: 193 (unnamed var.) (Sweden).—Nomen dubium. Höhn., l.c., thought that this variety might possibly belong to *Achroomyces tiliae* (Lasch) Höhn. = *A. disciformis*.

nigrescens Fr., *Exidia*, *Tremella* = Tremella intumescens; sensu P. Karst. = *Exidia* sp. (not listed)

nigrescens, *Tremella*, S. Schulz. 1866 (Yugoslavia, Slavonia) (nom. nud.).

nigricans, Dacrymyces, *Dacrymyces deliquescens* var.

nigricans, *Epidochium*, (Fr.) Fr. 1849; *Agyrium* Fr. 1822: 232 (Sweden) (nom. anam.); *Tremella* Sacc. 1888, not ~ With. 1776 (d.n.), not ~ Poir. 1808 (generic name n.v.p.), not ~ Bull.1789 (d.n.) & (Bull. per Mérat) G. F. Re 1827.—Mentioned here because the specific epithet was borrowed for *Platygloea nigricans* J. Schroet. (**6**).

nigricans, *Platygloea* = Achroomyces disciformis

nigricans, *Tremella*, Bull. 1789: *pl. 455 f. 1* & 1791 H.: 217 (France) (nom. anam.) (d.n.), not ~ With. 1776 (d.n.), not ~ Poir. 1808 (generic name n.v.p.); *Tubercularia* (Bull.) per Mérat 1821: Fr. 1822, not ~ (Fr.) Spreng. 1827; *Tremella* (Bull. per Mérat) G. F. Re 1827, not ~ (Fr.) Sacc. 1888; ≡ *Tubercularia nigrescens* St-Am. 1821.—Sometimes (Ferraris 1910: 24) referred to *Tubercularia vulgaris* Tode per Fr., the imperfect state of *Nectria cinnabarina* (Tode per Fr.) Fr. — Deuteromycetes.

nigricans, *Tremella*, Poir. 1808 (generic name n.v.p.), not ~ With. 1776 (d.n.), not ~ Bull. 1789 (d.n.) & (Bull. per Mérat) G. F. Re 1827, not ~ (Fr.) Sacc. 1888; ≡ *Nostoc lichenoides* Vauch. 1803: 227 *pl. 16 f. 5* (Switzerland).—Fide Born. & Flah. 1888 (ASn VII 7): 222 = *Collema* sp. — Sensu Kütz. = *Nostoc sphaericum* Vauch. fide Degelius 1954 (Sbu 13^2): 50. — Lichenes.

nigricans With., *Tremella* = Exidia plana

nitidus, *Dacrymyces*, (Lib.) Sprée 1870; *Agyrium* Lib. 1834 P.A.: No. 235 (n.v.) [cf. Matthieu 1853: 261]; ≡ *Agyriella nitidum* (Lib.) Sacc. 1884. — The combination *Dacrymyces nitidus* is often ascribed to Coem. 1858 (BAB II 5): 22 (reprint pagination) but he did not actually make it. — Deuteromycetes.

nivalis, *Tremella*, (F. Bauer) R. Br. "in Ross. Voy. Suppl. p. 44" fide Cooke 1882–4: 54; *Uredo* F. Bauer 1819 [cf. R. Br. 1825: 344, 578–590 for German translation] ≡ *Protococcus nivalis* (F. Bauer) Ag. 1824 (type of *Protococcus* Ag.). — Chlorophyceae.

nivea, *Tremella*, Hedw. f. 1802 O.: 8, 17 *pl. 2* (on pl. as *T. lactea*) (Germany) (generic name n.v.p.), not ~ With. 1776 (d.n.).—Either *Chaetophora pisiformis* (Roth) Ag. (fide Ag. 1824: 27) or *C. elegans* (Roth) Ag. — Chlorophyceae.

nivea, *Tremella*, With. 1776 (d.n.), not ~ Hedw. f. 1802 (generic name n.v.p.); ≡ *Fungus niveus aqueus* ... Ray 1724: 26 (England).—Fungus mycelium. — Deuteromycetes.

nostoc, *Tremella*, L. 1753: 1157 (d.n.) ≡ *Nostoc commune* Vauch. per Born. & Flah. 1888 (ASn VII 7): 203. — Nostocaceae heterocysteae.

nucleata, *Tremella*, Schw. 1822: 115 (U.S.A., North Carolina); *Naematelia* Fr. 1822; *Exidia* Burt 1921; = *Myxarium* sp. (**46**). — Sensu Berk. 1860, in part = Myxarium hyalinum

nucleatum, *Myxarium* = Myxarium hyalinum

nuda, [Dacrymyces], *Dacryomitra*, *Dacryopsis*, *Ditiola*

obliqua, *Guepinia*, Mass. 1892 B.F. 1: 418 (Great Britain); *Ditiola* Rea 1922.—Nomen dubium.

obscura, Tremella, *Tremella mycophaga* var.

obscura, Tulasnella

obtusum, *Fusarium*, *Fusisporium* = Mycogloea macrospora

ochracеum, Uthatobasidium, *Botryobasidium*, *Coniophora*

olivaceonigra, *Tremella* = Exidia pithya

Oliveonia (Tulasnellaceae)

Ombrophila Fr. 1849: 357 [1958 (Ta 7): 237, in obs.]; lectotype: *Ombrophila violacea* Fr. ≡ *Peziza clavus* var. *violascens* A. & S. 1805 (d.n.), not *Octospora violacea* Hedw.; not ∼ Quél. 1892. — Sensu Quél. 1883 = *Craterocolla* (**26**). — *Ombrophila* Quél. 1892 came into being by exclusion of the type species.

Ombrophila Quél. 1892, not ∼ Fr. 1849 (**26**).

Oncomyces = Auricularia

onygena, *Cribaria* = Phleogena faginea

opalea, *Gloeotulasnella* = Tulasnella traumatica

opalea, *Sebacina* = [Sebacina] *Exidiopsis* glaira

orbiculare, *-is*, Septobasidium, *Thelephora*

orbicularis, *Tremella*, Retz. 1769 (SVH 30): 249 (Sweden) (d.n.) per Steud. 1824.—Nomen dubium. Possibly not a fungus ("orbiculata concava viridis ... arb.").

Orcheomyces Burgeff 1909 (n.v.p.) [1962 (Ta 11): 93].—Apparently first validly published by Hch. Wolff (**79**). — Almost invariably citations like *Orcheomyces insignis*, *O. ludigi*, *O. mascula* [!], and *O. sambucina* "Burgeff" [Ramsbottom 1923 (TBS 8): 37] are given as if they were binomials; they are to be treated as names 'mentioned incidentally' in the sense of the "Code".

Orcheomyces = Thanatephorus

Ordonia = Septobasidium

ovisporus, Dacrymyces

oxycocci, Exobasidium

Pachysterigma = Tulasnella

pallens, *Dacrymyces* = Achroomyces disciformis

pallida, Tulasnella

pallidum, *Microstroma*, (Niessl) Niessl 1861; *Fusisporium* Niessl 1858 (VW 8): 329 *pl. 8 f. 2* (Austria) (nom. anam.).—Fide Sacc. 1886 (SF 4): 9 = *Microstroma juglandis* (Béreng.) Sacc. — Deuteromycetes.

palmata, *Tremella*, Hedw. f. 1798: 70 *pl. (1) fs. 4–7* (Germany) (generic name n.v.p.) (d.n.), not ∼ Schum. 1803 (d.n.) per Pers. 1822, not ∼ Schw. 1832.—Fide Lyngb. 1819: 191 = *Chaetophora endiviaefolia* (Roth) Ag. [= *C. incrassata* (Huds.) Haz]. — Chlorophyceae.

palmata Schum., *Calocera*, *Tremella* = Calocera cornea

palmata, -us, Schw., Dacrymyces, *Dacryopsis*, *Tremella*

Palmellodon Fr. 1867 (nom. prov.) [1963 (Ta 12): 166] ≡ *Tremellodon*, *q.v.*

palustris, *Tremella*, Web. 1778 (generic name n.v.p.) ≡ *Tremella palustris*, *vulgari marinae similis* ... Dill. 1741: 44 *pl. 8 f. 2* (England).—Fide Ag. 1823 S.A. 1: 414 = *Ulva bullosa* Roth ≡ *Monostroma bullosum* (Roth) Kütz. — Chlorophyceae.

palustris.—"[*Tremella*] *palustris* Dill. Fl. d.", Steud. 1824 (syn.), not ∼ Web. 1778 (generic name n.v.p.); ≡ (abbreviated form of the phrase-name) *Tremella palustris*, *vesiculis sphaericis fungiformibus* Dill. 1741: 55 *pl. 10 f. 17* = *Ulva granulata* L. 1753 sensu O. F. Müll, for which see under *Tremella pisum*. — *Tremella palustris* "Wigg.", cited by Steud., l.c., as synonym of *Gastridium lubricum* (Roth) Lyngb. [≡ *Tetraspora lubrica* (Roth) Ag.] is evidently an error.

papaveris, *Tremella*, Quél. 1892 (Rm 14): 65 *pl. 126 f. 4* (France).—Nomen dubium. Apparently based on an imperfect fungus, doubtfully basidiomycetous.

papillata, *Auricularia*, *Exidia*, *Tremella* = Exidia glandulosa

papillata, Stypella, *Sebacina*

paradoxa, *Ditiola*, (Hedw. f.) per Fr. 1822; *Octospora* Hedw. f. 1802 O.: 13, 19 *pl. 9* (Germany).—Fide Tul. 1865 C. 3: 183 (sensu Rab. 1862 F.e.: No. 470) = *Peziza carpinea* Pers. [≡ *Pezicula carpinea* (Pers. per Pers.) Rehm]. However, Hedwig gave the habitat as "in frustulo corticis fagi" rather than *Carpinus*.

paradoxus, *Dacrymyces*, P. Karst. 1886 (H 25): 232 (Finland).—Nomen dubium.

parasiticum, *Tuber* = Helicobasidium brebissonii

parasiticus, *Dacrymyces*, Kavina (in herb.).

—Fide Pilát 1953 (Sy 7): 316 = *Tremella mycophaga* (p. 183).

parmastoensis, [Dacrymyces], *Dacryopinax*

patavinum, Exobasidium

Patila = Auricularia

pearsonii, *Ceratobasidium*, (Bourd.) M. P. Christ. 1959; *Corticium* Bourd. 1921 (TBS 7): 51 *f. 1* (England); ≡ *Paullicorticium pearsonii* (Bourd.) Jo. Erikss. — Corticiaceae.

Pellicularia Cooke 1876 [1957 (Ta 6): 107] (nom. conf.) (**77**). — Special literature: Donk, *1953*. — Sensu D. P. Rog., in part = Ceratobasidium

pellucens, *Peziza*, Schum. 1803: 413 (Denmark) (d.n.) per Pers. 1822; *Bulgaria* Fr. 1822.— Referred with doubt by Lind 1913: 346 to *Exidia recisa*. May be a species of *Exidia*, but rather a nomen dubium. Original drawing, published by Hornem. 1830 (Fd 12 / F. 34): 12 *pl. 2031 f. 2*.

penicillata, *-um*, *Merisma*, *Thelephora* = Sebacina incrustans; sensu Fr. = *Thelephora* sp.

penicillata, *Tremella*, Arth. 1901 (PIA 1900): 135 (excl. of 'basionym' based on an imperfect state).—Fide Hylander & al. 1953 (ObL 1[1]): 17 = *Gymnosporangium tremelloides* Hartig. — Introduced as a new combination for *Lycoperdon penicillatum* O. F. Müll. 1780 (Fd 5 / F. 14): *8 pl. 839* (nom. anam.) (d.n.), but through simultaneous inclusion of perfect state, *Tremella penicillata* [≡ "*Gymnosporangium*" *tremelloides* A. Br.] is to be treated as a new name. — Uredinales.

peniophorae, [Achroomyces], *Platygloea*

Peniotulasnella Bourd. & G. 1928: 65 (nom. prov.); monotype: *Peniotulasnella conspersa* Bourd. & G., *q.v.*

peritricha, *Exidiopsis*, *Sebacina* = ? Sebacina effusa

persistens, *Tremella*, Bull. 1786: *pl. 304* & 1791 H.: 223 (France) (d.n.) per St-Am. 1821.—Listed by Oud. 1919 E. 1: 647 as synonym of *Gymnosporangium sabinae* (Dicks.) per Wint., *q. v.*— Uredinales.

petersii, *Ecchyna*, *Pilacre* = Phleogena faginea

peziza, *Guepin'a*, *Guepiniopsis* = Guepiniopsis buccina; sensu J. Schroet. = Ditiola radicata

peziza, *Tremella* = Ditiola radicata

pezizaeformis, Femsjonia, *Exidia*

pezizoides, *Tremella*, Cumino 1805 (MAT, Mém. prés.): 240 (Italy) (d.n.) per Pollini 1824.—The description suggests *Coryne sarcoides* (Jacq. per Pers.) Tul.

phaseoli.—"*Dacryomyces phaseoli*, Dur." is mentioned by Cooke 1891 (G 20): 15 as "not to be traced in Saccardo Sylloge".

Phleogena (Auriculariineae)

Phlogiotis = Tremiscus

phragmitidis, *Dacrymyces*, Westend. 1860 (BAB II 11): 652 (Belgium) (nom. anam.); Sacc. 1888 ("*Phragmitis*").—Fide Sacc. 1886 (SF 4): 670 = *Hymenella rubella* Fr. ("verisimiliter huc spectat"). — Deuteromycetes.

phragmitis, see *phragmitidis*

Phyllopta Fr., 1819 & 1821 (nom. nud.); *Tremella* subgen. ~ Fr. 1822; *Phyllopta* (Fr.) Fr. 1825 [1958 (Ta 7): 239]; lectotype: *Tremella biparasitica* Fr., *q.v.*

picea, *Tremella* = Exidia plana

piceicola, Protodontia, *Protohydnum*

Pilacre Fr. 1825: Fr. 1829 [1958 (Ta 7): 239]. —A discomycetous genus, the name of which has for some time been misapplied to *Phleogena*. — Cf. Boudier, *1888*. Sensu Bref. = Phleogena

Pilacrella (Auriculariineae)

pilatii, *Aporpium*, *Poria* = Aporpium caryae

pini, *Platygloea*, Höhn. ("i. litt."), Strass. 1910 (Austria) (nom. nud.).

pini, *Tubercularia* = Ditiola radicata

pinicola, *Corticium*, *Corticium incarnatum* var. = Tulasnella violea

pinicola, *Helicogloea*, *Saccoblastia* = Saccoblastia farinacea

pinicola, *Tremella* = ? Dacrymyces palmatus

pinicola, Tulasnella, *Gloeotulasnella*

pini-insignis, [Thanatephorus], *Rhizoctonia*

pisiformis, *Tremella*, Scop. 1772: 402 (Yugoslavia, Carniola) (d.n.) per Steud. 1824, not ~ Velen. 1922.—Nomen dubium.

pisiformis, *Tremella*, Velen. 1922: 791 [cf. Pilát 1948: 285], not ~ Scop. 1772 (d.n.). —Fide Pilát *1957c*: 175 = *Endogone pisiformis* Link per Fr. — Mucorales.

pisum, *Tremella*, (O. F. Müll.) Gmel. 1791 (generic name n.v.p.); *Conferva* O. F. Müll. 1775, misapplied; ≡ *Ulva granulata* L. sensu L. 1767: 136 (Sweden) ≡ *Ulva granulata* L. 1753: 1164 ≡ *Botrydium granulatum* (L.) Grev. — Sensu O. F. Müll. = *Nostoc sphaericum* Vauch. per Born. & Flah., fide Ag. 1824: 20 ("quoad partam"). — Xanthophyceae.

pithya, Exidia, *Tremella auricula-judae* var.
pithyophila, Poroidea = Craterocolla cerasi
plana Wigg., Exidia, *Tremella*; sensu Schleich. apud Secr. = Exidia pithya
plana, Tremella, With. 1776 (d.n.), not ~ Wigg. 1780 (d.n.) per Steud. 1824; ≡ *Fungus rotundus planus ligno putrido adnescens gelatinae instar* Ray 1696: 19 & 1724: 17 (England).—Nomen dubium, perhaps a species of *Exidia*.
Platygloea = Achroomyces
plicata, Exidia, Tremella = Exidia plana
plumbea Bres. & Torr., Sebacina
plumbeum, Ceratobasidium = Oliveonia atrata
poae, Dacrymyces, Lib. 1832 P.A.: No. 135 (Belgium) [cf. Matthieu 1853: 263] ≡ *Ephelis poae* (Lib.) Sacc. 1888 (Ma 2): 25 (revised description). — Deuteromycetes.
podlachica, Sebacina, *Exidiopsis*
poeltii, Bourdotia = Basidiodendron rimulentum
Polyozus = Tremellodendropsis
polytricha, Exidia, Mont. 1834 B.: 154 (India); *Hirneola* Fr. 1848; *Auricularia* Sacc. 1885; = *Hirneola nigricans* (Sw. per Hook.) Graff. —An alien. Recorded from the British Isles by Rea 1922: 728.
populina, Exidia = ? Exidia albida
populina, Tremella, Moug. (in litt.).—Fide Fr. 1828 E. 2: 33 = *Tremella indecorata* (p. 181).
poricola, Ecchyna, Pilacre = ? Phleogena faginea
Poroidea = Craterocolla
praticola, Thanatephorus, *Ceratobasidium, Corticium, Pellicularia*
prostrata, Tremella, ?DC., Steud. 1824: 416; "Tremelle inédite, que l'on pourroit nommer Trémelle couchée" · Girod-Chantr. 1802: 162 *pl. 22 f. 57* .— Algae.
Protodontia (Tremellineae)
Protopistillaria = Eocronartium
Prototremella = Tulasnella
pruinosa, Tulasnella
pruniformis, Tremella, (L.) Web. 1778 (d.n.); *Ulva* L. 1753: 1164 (Sweden) (d.n.); ≡ *Nostoc pruniforme* (L.) per Born. & Flah. 1888 (ASn VII 7): 215. — Nostocaceae heterocysteae. — *Tremella pruniformis* "Huds. Gmel" cited by Steud. 1824 are both errors.
pseudocornigerum, Ceratobasidium
pseudofoliacea, Phaeotremella = Tremella foliacea
Pseudohydnum (Tremellineae)
psilochaete, [Heterochaetella], *Heterochaetella dubia* var., *Sebacina*
psychodis, Rhizoctonia, Simon Th. 1925 (incidental mention) ≡ *Orcheomyces psychodis* Burgeff 1909: 19 *pl. 2 fs. 11, 12* (Germany, greenhouse), a non-binomial name (**79**); fide Simon Th. 1925: 65 = *Rhizoctonia solani* [= *Thanatephorus cucumeris* (p. 187), imperfect state].
pubescens, Achroomyces, Myxosporium = Achroomyces disciformis
pulposa, Tremella, Wallr. 1833 (Germany) (syn.).—Fide Wallr. 1833: 527 = *Tremella frondosa* Fr. [sensu Wallr.].
pululahuana, Tremella, Pat. apud Pat. & Lag. 1893 (BmF 9): 138 (Ecuador); *Bourdotia* Bourd. & G. 1928, misapplied; *Sebacina* D. P. Rog. 1935, misapplied; = *Ductifera pululahuana* (Pat. apud Pat. & Lag.) Donk, Tremellineae. — Sensu Bourd. & G. = Bourdotia galzini
pumila, Hirneola, Grogn. ("in Herb.").—Listed by Roum. 1884 (Rm 6): 224 as synonym of *Hirneola auricula-judae* (forma) (p. 158).
punctiformis, Dacrymyces = Dacrymyces tortus
punctiformis Tremella = ? Dacrymyces stillatus
pura, Peziza, Pers. 1796 O. 1: 40 (Germany) (d.n.) per Pers. 1822; *Bulgaria* (Pers. per Pers.) Fr. 1822.—Variously interpreted (**40**). — Discomycetes.
purpurea, -um. Pat., *Helicobasidium, Stypinella* = Helicobasidium brebissonii
purpurea, -um, -us, L. Tul., *Helicobasidium, Helicobasis, Hypochnus, Stypinella* = Helicobasidium brebissonii
purpurea, Tremella, L. 1753: 1158 (Sweden) (nom. anam.) (d.n.); ≡ *Sphaeria tremelloides* Weig. 1772 (d.n.); ≡ *Tuberculariа vulgaris* Tode per Fr., the imperfect state of *Nectria cinnabarina* (Tode ex Fr.) Fr. — Deuteromycetes.
purpureus, Dacrymyces, Tul. 1871 (JLS 13): 40 & 1872 (ASn V 15): 231 (France).—Nomen dubium. Doubtfully basidiomycetous.
pusilla, [Calocera], *Dacrymyces, Dacryomitra*
pyrenophila, Tremella

quercicola, Dacrymyces, P. Soss. 1960 (BMs 13): 214 (U.S.S.R., Ukraine).—Nomen dubium.
quercina, Exidiopsis, Sebacina = Sebacina effusa
quercina, Tremella = Tremella mesenterica

quercinum, *-us*, Septobasidium, *Hypochnus*
quercus, [Thanatephorus], *Rhizoctonia*

radicata, *-um*, Ditiola, *Dacrymyces*, *Guepinia*, *Helotium*; sensu Quél. = Femsjonia pezizaeformis
radicatus, *Macroscyphus* (Reichard) per S. F. Gray 1821.—Listed in error (as *M.* "*radiculatus*") by G. W. Mart. 1952 (SIa 19[3]): 36 as synonym of *Femsjonia radiculatus* (Sow. per Fr.) G. W. Mart. sensu G. W. Mart. = *F. pezizaeformis*. — Discomycetes.
radicellatus, *Dacrymyces* = Femsjonia pezizaeformis
radiculata, *Femsjonia*, (Sow. per Fr.) G. W. Mart. 1952 (SIa 19[3]): 36, misapplied; *Peziza* Sow. 1797: *pl. 144* (England) (d.n.) per Fr. 1822; ≡ *Sowerbyella radiculata* (Sow. per Fr.) Nannf. 1938 (SbT 32): 119 *f. 1*, Discomycetes. — Sensu G. W. Mart. = Femsjonia pezizaeformis
ramosa, *Dacryomitra* = Dacrymyces palmatus
ramosa, *Guepinia*, Curtis 1876 (TLS II 1): 127 *pl. 21 fs. 2, 3* (Burma).—An alien. Reported from a hothouse at Berlin by P. Henn. 1899 (VBr 40): 118. Fide McNabb 1965 (NZB 3): 63, 64 = *Dacryopinax sphathularia*, *q.v.*
rapae, *Rhizoctonia* = Thanatephorus cucumeris
recisa, Exidia, *Tremella*; sensu Bref. = Exidia glandulosa
repanda, Exidia, *Tremella*, *Ulocolla*; sensu Bref. = Exidia plana
repens, [Thanatephorus], *Rhizoctonia*
resedae, *Hypochnus*, Rostr. ("in herbario"), Lind 1913 (Denmark) (nom. nud.).—Presumably = *Thanatephorus cucumeris* (p. 187).
Rhizoctonia = Helicobasidium
rhizoctoniae, *Thelephora* = Helicobasidium brebissonii
rhizoctonon, *Helminthosporium* = Helicobasidium brebissonii
Rhizogona Fr. 1825 (nom. prov.) [1962 (Ta 11): 97] ≡ *Rhizoctonia* DC. per Fr., *q.v.*
rhizogonum, *Sclerotium*, Pers. 1818 (Europe) (nom. nud.).—Listed by Oud. 1921 E. 3: 855 as synonym of *Rhizoctonia medicaginis* but no information supporting this is available. — Apparently root-tubercles.
rhododendri Fuck., Exobasidium, *Exobasidium vaccinii* f.
rhododendri Quél., *Exobasidium* = Exobasidium rhododendri

rimulenta, *-um*, Basidiodendron, *Bourdotia*
rivalis, *Clavaria* = Sebacina incrustans
robusta, *Rhizoctonia* = [Thanatephorus] *Rhizoctonia* cavendishiani
romellii, *Dacrymyces* = Dacrymyces tortus
rosae, *Propolis*, Fuck. 1870 (Jna 23–24): 254 (Germany).—Fide Rehm 1888 (RKF 1[3]): 149 = *Propolis faginea* (Schrad.) per P. Karst. [= *P. versicolor* (Fr.) Fr.]. Fuckel erroneously thought that *Exidia saccharina* was the conidiophorous state. — Discomycetes.
rosea Höhn., Tremella ('Microtremella')
rosea, *Tremella*, Plan. 1788: 270 (Germany) (d.n.), not ∼ Höhn. 1903.—Nomen dubium. Identified by "h.v." [1788 (BM 2 / 4. Stück): 165] with *Lichen roseus* Schreb., but this is not at all evident from the descriptions.
rosella, Tulasnella
roseolilacina, *Tulasnella*, Litsch. (in herb.).—Fide Neuh. 1936 (ABS 28[1]): 55 = *Tulasnella fuscoviolacea* (p. 191).
roseus, *Dacrymyces*, Fr. 1828 E. 2: 35 (France), not ∼ Lloyd 1923 (n.v.p.).—Nomen dubium. Doubtfully basidiomycetous.
rubella, *Peziza*, Pers. 1801: 635 (Germany) (d.n.) per Pers. 1822: Fr. 1822; *Ombrophila* Quél. 1883, misapplied; *Craterocolla* Sacc. 1888, misapplied; *Ditangium* Pat. 1900, misapplied; ≡ *Hyalina rubella* (Pers. per Pers.) Nannf. 1932 (NAu IV 8[2]): 252 *f. 40e*, Discomycetes. — Sensu Quél. = Craterocolla cerasi (**26**)
rubella, *Propolis*, Fuck. 1870 (Jna 23–24): 254 (Germany).—Fide Rehm 1888 (RKF 1[3]): 149 = *Propolis faginea* (Schrad.) per P. Karst. [= *P. versicolor* (Fr.) Fr.]. Fuckel erroneously thought that *Exidia recisa* was the conidiophorous state. — Discomycetes.
rubella, *Tremella*, Gmel. 1791 (d.n.) ≡ *Helvella purpurea* Schaeff. 1774: 114 [*pls. 323, 324*] (Germany) (d.n.), cited by Gmelin as "*Ulva purpurea*".—Fide Tul. 1865 C. 3: 191, 192 (as to *Helvella purpurea* Schaeff.) = *Coryne sarcoides* (Jacq. per Pers.) Tul., *pl. 323*, imperfect state, *pl. 324*, perfect state. — Discomycetes.
rubella var. *cerasina*, *Ombrophila*, see *Helvella cerasina*
ruberrima, *Tremella*, Gmel. 1791 (d.n.) ≡ *Tremella cinnabarina* Wulf., *q.v.*
rubescens, see *rufescens*

rubiae, *Rhizoctonia* = Helicobasidium brebissonii

rubiformis, Dacrymyces, *Naematelia*, *Tremella*; sensu Bourd. & G. = Tremella encephala

rubiginosa, *Rhizoctonia*, Sappa & Mosca 1954 (All 2): 185 *f. 5* (Somalia) (nom. anam.). —Erroneously stated by Saks. & Vaart. 1961 (CJB 39): 634 to be described from Italy.

rubra, *Calocera*, S. Schulz. 1866 (Yugoslavia, Slavonia) (nom. nud.).

rubra, *Exidia* = Exidia glandulosa

rubra, *Tremella*, O. F. Müll. 1777 (BbG 3): 354 *pl. 9 fs. 7, 8* (Denmark) (nom. anam.) (d.n.).—Fide Fr. 1822: 234, "nil nisi status siccus *Tr. c. sarcoides*" = *Tremella sarcoides* Fr., *q.v.* Erroneously ascribed to "Willd." by Fr. 1832, Ind.: 192.

rubropallens, *Tulasnella* = Tulasnella allantospora

rubroviolacea, *Tremella*, Britz. 1893 (BCb 64): 105 [*pl. 748 f. 20*] (Germany).—Nomen dubium. Identified by Neuh. 1938 (PM 2a): 56 with *Naematelia encephala* [*Tremella encephala*], certainly in error. The allantoid spores, 6–7 × 2 μ suggest, rather, *Craterocolla* but the fruitbodies depicted do not show any trace of the 'pycnidia'.

rufa, *-us*, *Guepinia*, *Gyrocephalus*, *Phlogiotis*, *Tremella*, **Tremiscus* Lloyd 1922 = Tremiscus helvelloides

rufescens, *Tremella*, Ehrenb. ("ined."), Pers. 1822 (syn.); Fr. 1822 ("*rubescens*"; syn.) ≡ *Tremella impressa*, *q.v.*

rufo-aurantiacus, *Dacrymyces*, Romell (in herb.). —Fide Neuh. 1936 (ABS 28[1]): 5 = *Ditangium cerasi* f. *insignis* = *Craterocolla cerasi* (p. 165).

rufum, Dacryonaema, *Sphaerotema*

rugulosa, *Tremella*, Rox. Clem. 1807: 321 (Spain) (generic name n.v.p.).—Fide Ag. 1823 S.A. 1: 146 = *Encoelium sinuosum* (Roth) Ag. ≡ *Colpomenia sinuosa* (Roth) Derb. & Sol. — Phaeophyceae.

rupincola, *Tremella*, Schleich. 1821 (Switzerland) (nom. nud.), Steud. 1824: 416 ("*rupicola*"; nom. nud.).

rutilans, Tulasnella, *Corticium*, *Pachysterigma*, *Prototremella*; sensu D. P. Rog. = Tulasnella curvispora

sabinae, *Tremella*, Dicks. 1785 P.c. 1: 14 (generic name n.v.p.) per Hook. 1821 ≡ *Gymnosporangium sabinae* (Dicks. per Hook.) Wint. 1880.—Fide Nylander & al. 1953 (ObL 1[1]): 16 = *Gymnosporangium fuscum*, *q.v.* — Uredinales.

saccharina, Exidia, *Tremella*, *Tremella spiculosa* var., *Ulocolla*; sensu Bon. = Dacrymyces saccharinus

saccharinus, Dacrymyces

Saccoblastia (Auriculariineae)

Saccogloea (Bourd. & G.) Arnaud 1951 (nom. nud.) [1958 (Ta 7): 242]; *Saccoblastia* sect. ~ Bourd. & G. 1928: 5; monotype: *Saccoblastia sebacea*.—A not validly published synonym of *Helicogloea* (p. 157).

saepincola, see *sepincola*

sagarum, *Auricularia*, *Exidia*, *Tremella* = Exidia recisa

salicina, *Tremella*, Schleich. 1821 (Switzerland) (nom. nud.).—Fide Fr. 1832, Ind.: 193 = *Exidia recisa* (p. 170).

salicum, *Tremella* = Exidia recisa

saligna, *Tremella*, A. & S. 1805: 303 *pl. 9 f. 7* (Germany) (d.n.); *Stictis* (A. & S.) per Pers. 1822; *Tremella* Schw. 1822.—Fide Fr. 1822: 198 = *Stictis versicolor* (Fr.) Fr. — Discomycetes.

sambuci, *Auricularia* = Hirneola auricula-judae

sambucina Mart., *Auricularia* = Hirneola auricula-judae

sambucina Scop., *Auricularia*, *Helvella* = Hirneola auricula-judae

sarcoides, *Tremella*, Fr. 1822: 217 (England) (nom. anam.).—This is the imperfect state of *Coryne sarcoides* (Jacq. per Pers.) Tul., a discomycete. Fries ascribed the name to "With. Arr. IV. p. 78" [With. 1796: 78] who described both states under the name *Tremella sarcoides* (Jacq.) With. By excluding the ultimate type of this name (≡ *Lichen sarcoides* Jacq., which is based on the perfect state) as *Bulgaria sarcoides* (Jacq. per Pers.) Fr., Fries actually restricted the application of Withering's recombination to the imperfect state and in this way published a 'new' species. When von Höhnel [1902 (SbW 111): 1002] provided a distinct generic name for the imperfect state he called its type species "*Pirobasidium sarcoides* (Jcqn.) v.H." and added, "Est status conidiophorus *Corynes sarcoidis* (Jcqn.)." If one could agree that von Höhnel, too, excluded the type of this name and that, therefore, the reference to Jacquin after '*Pirobasidium sarcoides* is an error, than this reasoning

would provide a legal basis for citing the name of the imperfect state as *Pirobasidium sarcoides* 'Höhn.' or '(Fr.) Höhn.'

sarcoides, *Tremella*, (Jacq.) With. 1796 (d.n.), not ~ Fr. 1822 (nom. anam.); *Lichen* Jacq. 1781 (MaJ 2): 378 *pl. 22* (Austria) (d.n.): ≡ *Coryne sarcoides* (Jacq. per Hook.) Tul. — Discomycetes.

saxatilis.—"[*Tremella*] *saxatilis* Dill.", Streinz. 1861 (syn.) ≡ (erroneous and abbreviated form of the phrase-name) *Tremella fluviatilis gelatinosa et uterculosa* Dill. 1741: 54 *pl. 10 f. 16* = *Nostoc verrucosum* Vauch. per Born. & Flah. — Nostocaceae heterocysteae.

scarlatina, *Tremella*, Schum. 1803: 438 (Denmark) (generic name n.v.p.) per Streinz. 1861.—Fide Fr. 1822: 231, "larva Gastromycis". This qualification may be translated as 'an early state of a species of Myxomycetes', the latter group being included in the Gastromycetes at that time.

schinzianum, *Exobasidium*, P. Magn. 1891 (VjZ 36): 251 *plate* (Switzerland) ≡ *Entyloma schinzianum* (P. Magn.) Bubák 1906 (Am 4): 106 (conidial state). — Special literature: Magnus, *1891*.

schrenkii, *Eichleriella*, *Hirneolina* = Eichleriella leucophaea

sclavonica, *Hirneola*, S. Schulz. apud Cooke & Quél., Clav. syn. Hym. europ. 234. 1878. —Nomen dubium. An *Hirneola auricula-judae*.

sclerotica, [Thanatephorus], *Rhizoctonia*

sebacea, -us, [Achroomyces], *Dacrymyces*, *Platygloea*

sebacea, *-um*, **Acrotamnium* Steud. 1824, *Corticium*, *Thelephora* = Sebacina incrustans

sebacea, *Saccoblastia* = Helicogloea lagerheimii

Sebacina (Tremellineae)

Seismosarca = Hirneola

semivestitum, *Lachnocladium* = Tremellodendropsis tuberosa

sepincola, *Dacrymyces*, *Tremella* = Dacrymyces stillatus; sensu Bon. 1864 (AbH 8): 116 = *Tremella sepincola* Willd. in part (var. *β*; cf. Pers. 1801: 629, syn.) = *Dacrymyces urticae* (Pers.) Mart. (cited as synonym by Bon., l.c.) ≡ *Cylindrocolla urticae* (Pers. per Mérat) Bon., fide Tul. 1865 C. 3: 195, the imperfect state of *Calloria fusarioides* (Berk.) Fr., *q.v.*

Septobasidium (Septobasidiales)

Septocolla = Dacrymyces

sergentiorum, *Podoscypha* = ? Tremellodendropsis tuberosa

serpentina, *Tremella*, Schum. 1803: 438 (Denmark) (generic name n.v.p.) per Streinz 1861.—Fide Fr. 1832, Ind.: 193 = "Alga".

serrata, *-um*, *Clavaria*, *Merisma*, *Thelephora* = Sebacina incrustans

simplex, Tremella

Sirobasidium (Tremellineae)

solani, *Botryobasidium*, *Ceratobasidium*, *Corticium*, *Corticium vagum* subsp., *Hypochnus* = Thanatephorus cucumeris

solani, Pilacrella, *Ecchyna*, *Pilacre*

solani, *Rhizoctonia* = Thanatephorus cucumeris; sensu Thüm. = *Helicobasidium brebissonii*

Soppittiella Mass. 1892 [1957 (Ta 6): 113]; lectotype: "*Thelephora cristata*, Fr." sensu Mass. = presumably *Corticium fastidiosum* (Pers. per Fr.) P. Karst. ≡ *Cristella fastidiosa* (Pers. per Fr.) Brinkm., Corticiaceae.—The identification of the type species with *Thelephora cristata* (Pers.) per Fr. = *Sebacina incrustans* by D. P. Rog. 1944 (M 36): 78 is not acceptable, cf. Donk 1952 (Re 1): 486.

sordida, Tulasnella, *Gloeotulasnella*

sowerbea, *Peziza*, Pers. 1801 (d.n.); *Macroscyphus* (Pers.) per S. F. Gray 1821 ("*Sowerbei*"); *Peziza* Pers. 1822; ≡ *Peziza radiculata* Sow. 1797: *pl. 114* (England) (d.n.); ≡ *Sowerbyella radiculata* (Sow. per Fr.) Nannf. 1938 (SbT 32): 119 *f. 1*.—Erroneously identified with *Femsjonia pezizaeformis* by G. W. Martin (*1952*: 36). — Discomycetes.

spartii.—"*Tremella*" *spartii* Ces., Oud. 1921 E. 3: 835 (syn.).—This is an error for '*Trullula*' *spartii* Ces. in Rab. 1858 Kl. II: No. 752. The reduction of this species to *Tremella atrovirens* by Oud., l.c., is apparently not correct — Deuteromycetes.

spathularia, *Guepinia*, (Schw.) Fr. 1828; *Merulius* Schw. 1822: 92 *pl. 2 fs. 1–3* ("*spathularia*") (U.S.A., North Carolina); *Guepiniopsis* Pat. 1900; *Dacryopinax* G. W. Mart. 1948.—An alien, reported from Europe from hothouses as *Guepinia fissa*, *q.v.*, and *G. ramosa*, *q.v.* — For a recent description and illustration, see McNabb 1965 (NZB 3): 63 *f. 1b* (*Dacryopinax*). — The inclusion of this species in the genus *Dacrypinax* G. W. Mart. is, in my opinion, debatable. — Special literature: Bodman, *1938*.

spermofora, Tremella, Strøm 1788 (n.v.) is mentioned by C. Christ. 1926: 657.— Presumably an alga.

sphacelati, [Thanatephorus]. *Rhizoctonia*

sphaerica, Tremella, Streinz 1861 (syn.), not ~ (Vauch.) Poir. 1808 (d.n.); ≡ *Tremella sphaerica, sessilis, gregaria, nigra* Gled. 1766 V. 2: 346 (Germany).—*Tremella sphaerica* "&c. Gled. Act. II p. 346" is cited by Fr. 1822: 249 as synonym of *Sclerotium semen* var. *brassicae* (Berg.) per Fr., but this is not acceptable.

sphaerica, Tremella, (Vauch.) Poir. 1808 (d.n.); *Nostoc* Vauch. 1803: 223 *pl. 16 f. 2* (Switzerland) (d.n.) ≡ *Nostoc sphaericum* Vauch. per Born. & Flah. 1888 (ASn VII 7): 208. — Nostocaceae heterocysteae.

Sphaerocolla P. Karst. 1892 [1962 (Ta 11): 99] (nom. anam.). monotype: *Sphaerocolla aurantiaca* P. Karst., *q.v.*

Sphaerospora Bon. 1870 (nom. nud.) [1963 (Ta 12): 167], not ~ Sweet 1826 (nom. nud.) & Klatt 1863 (Iridaceae), not ~ (Sacc.) Sacc. 1889 (Pezizaceae); monotype: *Thelephora byssoides* Pers. sensu Bon. = *Sebacina incrustans*.—A not validly published, earlier synonym of *Sebacina* (p. 173).

sphaerospora, [Tremella ('Microtremella')], *Sebacina*

spicata, Tremella

Spicularia Chev. = Exidia

spiculata, Exidia = ? Exidia plana

spiculosa Pers., *Exidia, Gyraria, Tremella* = Exidia glandulosa

spinulosa, Eichleriella, (B. & C. apud Berk.) Burt 1915, in part misapplied; *Radulum* B. & C. apud Berk. 1873 (G 1): 146 (U.S.A., Alabama), cf. (**29**). — Sensu Burt, in part = Eichleriella deglubens

spongiosa, Sebacina = ? Sebacina incrustans

spongiosum, Hydnum = Pseudohydnum gelatinosum

squamosa, Tremella, Schum. 1803: 440 (Denmark) (generic name n.v.p.) per Steud. 1824.—Fide Fr. 1822: 219 (as "*subsquamosa*"), "ad Gastromycetes [= Myxomycetes] referenda".

stahlii, [Thanatephorus], *Rhizoctonia*

steidleri, Tremella, *Tremella encephala* var.

stellariae, Exobasidium, P. Syd. 1899 (H 38): (134) (Germany).—Fide Savile 1959 (CJB 37): 643 = *Melampsorella caryophyllacearum* J. Schroet. — Uredinales.

stellata, Tremella, Chaill. (in litt.).—Fide Fr. 1828 E. 2: 80 = *Sphaeria aurora* Fr. ≡ *Nectria aurora* (Fr.) Sacc. — Pyronomycetes.

sterigmaticum, -us, Thanatephorus, *Ceratobasidium, Corticium*

stictis, Tremella, Pers. 1801 (d.n.); ≡ *Stictis rufa* Pers. 1799 O. 2: 74 *pl. 6 f. 6* (Germany) (d.n.) per Pers. 1822 ≡ *Agyrium rufum* (Pers. per Pers.) Fr. — Discomycetes.

Stilbum (Auriculariineae)

stillatus, Dacrymyces, *Calloria*; sensu Corda = Dacrymyces stillatus, arthrosporous state; sensu L. Tul. = Dacrymyces sp.; sensu Berk., Fr. 1874 = *Dacrymyces* spp. (mixtum compositum; not listed); sensu P. Karst. = Dacrymyces sp.; sensu Bref. = Dacrymyces sp.; sensu Bourd. & G. = Dacrymyces sp.

stillatus var. *lutescens* Steud. = Dacrymyces lacrymalis

stipitata, [Dacrymyces], *Septocolla*

stipitata, Tremella, Bosc 1811 (MBe 5): 89 *pl. 6 f. 14* (U.S.A., South Carolina) (d.n.) per Schw. 1822, not ~ Willd. 1787 (d.n.), not ~ Peck 1875; *Leotia* J. Schroet. 1894; ≡ *Leotia viscosa* Fr. — Discomycetes.

stipitata, Tremella, Willd. 1787: 420 (Germany) (nom. anam.) (d.n.), not ~ Bosc 1811 (d.n.) per Schw. 1822, not ~ Peck 1875. —Fide Fr. 1822: 218 = *Tremella clavata* (Pers.) Pers., *q.v.*

stipitatus, Dacrymyces, Dacrymyces deliquescens var. = [Dacrymyces] *Ditiola* nuda

straminea, Exidia = Exidia recisa

stratosa, Sebacina, Seismosarca = Basidiodendron cinereum

striata, Calocera, Clavaria = ? Calocera cornea

striata, Guepinia, Bary (in herb.).—Fide Lloyd 1919 (LMW 6): 922 = *Guepenia peziza* Tul. [= *Guepiniopsis buccina*, p. 204].

striatus, Dacrymyces, Oud. 1919 E. 1: 546 ("Fr."; error) = *Dacrymyces stillatus* (p. 200).

stricta, Calocera

strigosa, Exidia, Exidia glandulosa subsp. = Exidia glandulosa

strigosa, Sebacina

struthiopteridis Rostr., Herpobasidium, *Gloeosporium, Uredinopsis*

Stypella (Tremellineae)

Stypinella = Helicobasidium

suavis, Rhizoctonia, Simon Th. 1932 (incidental mention) ≡ *Orcheomyces suavis* Burgeff 1909: 27 (Germany; greenhouse),

a non-binomial name (**79**); fide Simon Th. 1932: 65 = *Rhizoctonia solani* [= *Thanatephorus cucumeris* (p. 187), imperfect state].

subardosiaca, Helicogloea, *Saccoblastia*, *Saccoblastia sebacea* subsp.

subclavata, *Tremella*, Schum. 1803: 442 (Denmark) (d.n.) per Pers. 1822.—Nomen dubium. Fries 1822: 217 identified this with *Tremella mesenterica*, but this is, in my opinion, not acceptable (at least as to the main variety).

subgelatinosa, *-um*, Protodontia, *Hydnum*, *Protohydnum*

subhyalina, *Sebacina* = Sebacina podlachica

subiculoides, *Ptychogaster* = Sebacina incrustans

sublilacina, Sebacina, *Exidiopsis*

subplana, *Peziza*, Schum. 1803: 416 (Denmark) (d.n.) per Pers. 1822.—Fries (1822: 140) listed this name ("ex icon. Auct.") as synonym of *Peziza chrysocoma* Bull. sensu Fr. = *Dacrymyces chrysocoma*, in my opinion a doubtful identification.

subrepanda, *Exidia*, (P. Karst.) Oud. 1920; *Exidia albida* subsp. *E. subrepanda* P. Karst. 1891 (Mfe 18): 73 (Finland).—Nomen dubium.

subrotunda.—"[*Tremella*] *subrotunda* L.": Streinz 1861 (syn.) ≡ (an abbreviated form of the phrase-name) *Tremella subrotunda sinuosa difformis gelatinosa* L. 1747 (Sweden) = *Tremella verrucosa* L. 1753 (d.n.) ≡ *Nostoc verrucosum* Vauch. per Born. & Flah. — Nostocaceae heterocysteae.

subsimplex, Calocera, *Calocera cornea* var.; sensu Britz. = Calocera glossoides

subsquamosa, *Tremella*, Fr. 1822: 219 (incidental mention) ex Steud. 1824 ≡ (an error for) *Tremella squamosa* Schum., *q.v.*

subtilis, [Thanatephorus], *Rhizoctonia*

succina = *succinea*

succinea, *Tremella* = Tremella foliacea

succinea.—"*Peziza succinea* Pers. Comm. Schaeff. p. 23". Fr. 1822: 223 (syn.); *Tremella* Steud. 1824 ("*succinea*" & "*succina*"; syn.), an *T. succin(e)a* Pers. 1822.—Fide Fries, l.c., = *Exidia recisa*. I have been unable to locate the place of publication of this name.

succineus, *Dacrymyces*, (Fr.) Fr. 1874, not ~ Sprée 1864; *Calloria* Fr. 1849: 359 (Sweden) (nom. anam.); ≡ *Sirocyphella succinea* (Fr.) Höhn. 1918 (SbW 127): 337, 374. — Deuteromycetes. — Sensu Boud. = Dacrymyces fagicola

succineus, *Dacrymyces*, Sprée in Rab. 1864 F.e.: No. 680 (with description, citing "*Calloria succinea* Fr. summ. p. 359 ?") (Netherlands) (nom. anam.), not ~ (Fr.) Fr. 1874.—Fide Höhn. 1918 (SbW 127): 372–375 = *Dacrymyces succineus* (Fr.) Fr. ≡ *Sirocyphella succinea* (Fr.) Höhn. — Deuteromycetes.

sulcata, *Ditiola*, (Tode) per Fr. 1821; *Tubercularia* Tode 1790: 21 *pl. 4 f. 34* (Germany) (nom. anam: ?) (d.n.).—Nomen dubium. Tode cited as synonym "*Fungus Astroides* Scop."

syringae, *Tremella*, Schum. 1803: 440 (Denmark) (d.n.) per Pers. 1822; *Dacrymyces* (Schum. per Pers.) Fr. 1822.—Nomen dubium. — Description & illustration: Hornem. 1825 (Fd 11 / F. 31): 14 *pl. 1857 f. 3* (*Dacrymyces*), presumably Schumacher's original drawing.

Tachaphantium = Achroomyces

tenax, *Exidia* = Exidia plana

tenerrima, *Tremella*, With. 1776 (generic name n.v.p.) ≡ *Tremella crispa* Schreb. (typonym), *q.v.*

terminalis, *Tremella*, (O. F. Müll.) Röm. & Ust. 1789 (incidental mention); Lichen O. F. Müll. 1782 (Fd 5 / F. 15): 5 *pl. 879 f. 1* (Denmark or Norway).—Nomen dubium. Fide Hornem. 1827: 39 = *Verrucaria maura* "Flörke"; fide Zahlbr. 1931 C. 7: 780 = "Alga videtur". The combination with *Tremella* was made in the index to volume 2 of the "Magazin für die Botanik" edited by Römer & Usteri. On the page referred to this combination was not made by Müller [1789 (MB 2 / 5. Stück): 180], who forgot to mention the generic appellation; his reference shows that it should have been 'Lichen' rather than 'Tremella'.

terrestris.—"*Tremella terrestris* Dill.", Ag. 1824: 19 (syn.), Kütz. 1849: 298 ("Dillw."; syn.), not ~ Grev. 1830 ("Dill."; syn.); ≡ (an abbreviated form of the phrase-name) *Tremella terrestris sinuosa*, *pinguis* & *fugax* Dill. 1741: 52 *pl. 10 f. 14* = *Tremella nostoc* L. ≡ *Nostoc vulgare* Vauch. per Born. & Flah. — Nostocaceae heterocysteae.

terrestris.—"*Tremella terrestris*, Dill.", Grev. 1830: 175 (syn.), not ~ Ag. 1824 ("Dill."; syn.); ≡ (an abbreviated form of the phrase-name) *Tremella terrestris tenera*, *crispa* Dill. 1741: 52 *pl. 10 f. 12* ≡ *Tremella crispa* Schreb., *q.v.*

Thanatephorus (Tulasnellaceae)
Thanatophytum = Helicobasidium
thelephoreus, Muciporus corticola forma, *Tulasnella* = Tulasnella violea
thermalis, Tremella, Thore 1803: 448 (France) (generic name n.v.p.), not ~ Opiz 1823. —"... nous savons que le *Tremella thermalis* de Thore ... [est] presque entièrement [composé] de *Leptothrix lamellosa* Kützing": Born. & Flah. 1887 (ASn VII 5): 59. — Thore, l.c., refers to a more detailed description in the "Journal de santé et d'Histoire naturelle, t. 2, p. 162" (n.v.). — Bacteria.
thermalis, Tremella, Opiz 1823 ("Springfels" [!]), not ~ Thore 1803 (generic name n.v.p.); ≡ *Tremella thermalis, gelatinosa* ... Springfeld ? 1754 (HAB 1752 [vol. 8]): 102 (Czechoslovakia, Bohemia).—Cf. Born. & Flah. 1887 (ASn VII 5): 59. Perhaps a mixture of several species, but cf. *Hapalosiphon laminosus* (Kütz.) per Born. & Flah. ≡ *Mastigocladus laminosus* (Kütz. per Born. & Flah.) Kirchner. — Nostocaceae heterocysteae ?
thuretiana, Exidia, Tremella = Exidia albida
tiliae, Achroomyces, Stictis = Achroomyces disciformis
tiliae, Platygloea, Tachaphantium = Achroomyces disciformis
tinctoria, Tremella = Tremella foliacea
torta, -us, Dacrymyces, *Guepiniopsis, Tremella*; sensu Bon. = Dacrymyces stillatus; sensu Doass. & Pat. = Guepiniopsis buccina; sensu Brasf. = *Dacrymyces* sp. (not listed)
totarae, Auricula = Pseudohydnum gelatinosum
translucens, Tremella ('Microtremella')
transversalis, Propolis, Fuck. 1870 (Jna 23–24): 254 (Germany).—Fide Rehm 1888 (RKF 1[3]): 149 = *Propolis faginea* (Schrad.) per P. Karst. [= *Propolis versicolor* (Fr.) Fr.]. Fuckel erroneously considered *Exidia glandulosa* to be the conidiophorous state. — Discomycetes.
traumatica, Tulasnella, *Gloeotulasnella*
trechispora, Sebacina, Bourd. & G. 1913 (France) (nom. nud.).—Afterwards published as *Bourdotia cinerella* var. *trachyspora* Bourd. & G. *Bourdotia cinerella* is now referred to *Basidiodendron caesiocinereum* (p. 162).
Tremella [Dill.] L. 1753: 1157 & 1754: 491 (d.n.), not ~ Pers. per St-Am. 1821; ≡ *Nostoc* Vauch. per Born. & Flah. — Nostocaceae heterocysteae. — For this name *Tremella* and its various applications, see Donk 1958 (Ta 7): 245, in obs.
Tremella Pers. per St-Am. (Tremellineae)
tremellae, Auricularia = Hirneola auricula-judae
Tremellochaete = Exidia
Tremellodendropsis (Tremellineae)
Tremellodon = Pseudohydnum
tremelloides, Auricularia, Thelephora = Auricularia mesenterica
tremelloides, Dacrymyces = Dacrymyces palmatus
tremelloides.—"[*Tremella*] *tremelloides* Huds.", Streinz 1861 (syn.), not ~ (Berk.) Mass. 1889; ≡ (an error for) *Lichen tremelloides* (L.) Huds. ≡ *L. tremelloides* (L.) Weiss ≡ *Leptogium lichenoides* (L.) Zahlbr.—A contamination of '*Tremella lichenoides* L.' and '*Lichen tremelloides* Huds.' — Lichenes.
tremelloides, Tulasnella, *Gloeotulasnella*
Tremiscus (Tremellineae)
tremula, Tremella, (Holmskj.) Nees 1816 (d.n.); *Clavaria* Holmskj. 1799: 27 *pl.* [*11*] (Denmark) (d.n.).—Fide Pers. 1822: 201 & Fr. 1822: 29 = *Leotia lubrica* (Scop.) per S. F. Gray. — Discomycetes.
truncata, Auricularia, Exidia, Tremella = Exidia glandulosa
tuberculata Clavaria, With. 1796: 364 (England) (d.n.).—Because With. cited "Schaeff. 289" [*Clavaria cornuta* Schaeff.] as a representative figure, *C. tuberculata* was considered a synonym of *Calocera viscosa*, but this conclusion is unacceptable to me. The original description suggests *Podostroma alutaceum* (Pers. per S. F. Gray) Atk., but only imperfectly so. Nomen dubium.
tuberculata, Leotia = ? Ditiola radicata
tuberculata, Tremella
tuberculosa, Sebacina
tuberosa, Calocera, (Sow. per Fr.) Loud. 1829: Fr. 1832; *Clavaria* Sow. 1799: *pl. 199* (England) (d.n.).—Currently referred to *Clavariadelphus fistulosus* (Holmskj. per Fr.) Corner. — Clavariaceae.
tuberosa, *-um*, Tremellodendropsis, *Aphelaria, Merisma, Stereum, Thelephora*
tubiformis, Guepinia = Guepiniopsis buccina
tulasnei, Dacrymyces = ? Dacrymyces stillatus sensu L. Tul.
tulasnei, Prototremella, Tulasnella = Tulasnella

violea; sensu P. Karst. = Tulasnella cystidiophora

Tulasnella (Tulasnellaceae)

tulipae, Sclerotium, Therry ("in litt."), Roum. 1887 (France) (nom. nud. & anam.), not ~ Lib. 1830, not ~ Weinm. 1836.—Fide Whetzel apud Boerema *1964:* 180 = *Rhizoctonia tuliparum* (p. 190).

tuliparum, [Thanathephorus], *Rhizoctonia, Sclerotium*

tumidum, -us, Achroomyces, Myxosporium = ? Achroomyces disciformis

turbinata, Tremella, Huds. 1778 (d.n.), not ~ Schum. 1803 (d.n.) & (Schum. per Corda) Opiz 1856; ≡ *Peziza polymorpha* Oed. (d.n.) = *Phaeobulgaria inquinans* (Pers. per Pers.) Nannf. — Discomycetes.

turbinata, Tremella, Schum. 1803: 441 (Denmark) (d.n.), not ~ Huds. 1778 (d.n.); *Coryne* (Schum.) per Corda 1838, misapplied?; *Tremella* Opiz 1856 ("Schrad."). —Nomen dubium.

turbo, Peziza = Ditiola radicata

typhae, Dacryopsis, Höhn. 1909 (SbW 118): 291 (Germany)); *Dacryopsella* Höhn. 1915; ≡ *Pistillina typhae* (Höhn.) Donk. — Clavariaceae.

typhina.—"[*Tremella*] *typhina* Willd.": Streinz 1861 (syn.) ≡ (an error for) *Stemonitis typhina* Wigg. 1780: 110 = *Comatricha typhoides* (Bull.) Rost. fide Lister 1911: 157. — Myxomycetes.

typhuloides, Eocronartium, Helicobasidium = Eocronartium muscicola

ubatubensis, Hirneolina = Eichleriella alliciens

uda, Protodontia

ulicis, Dacryopsis, Ditiola = Femsjonia pezizaeformis

uliginosa, Clavaria, Wallr. 1815: 141 (Germany) (d.n.) per Pers. 1822.—Kunze apud Fr. 1821: 498 referred this to *Pistillaria muscicola* [≡ *Eocronartium muscicola*], but the protologue does not support this. Rather one of the small species of Clavariaceae.

uliginosa, Tremella

Ulocolla = Exidia

umbilicalis, Tremella, (L.) Steud. 1824 (syn.) ≡ "*F*[*ucus*] *Tremella umbilicalis* S. G. Gmel. 1768 ≡ *Fucus umbilicalis* L. 1753: 1163 ≡ *Porphyra umbilicalis* (L.) J. Ag. — Rhodophyceae.

umbilicata, Tremella, Schrank 1789: 559 (Germany) (d.n.) per Streinz 1861.—Nomen dubium.

umbrina, Sebacina, *Bourdotia*

umbrina Schum., *Tremella* = Exidia plana

umbrinella, Exidia

umbrosa, Tremella, Opiz 1852: 148 (Czechoslovakia) (nom. nud.).—Cf. Svrček in Klášt. & al. 1958: 90, "probabiliter *Nostoc* sp." — Nostocaceae heterocysteae ?

undulata Hoffm., *Tremella* = Tremella foliacea

undulata Paul., *Tremella* = Tremella mesenterica

unedonis, Exobasidium

unicolor, Tremella, Fr. 1822: 218 (Sweden); *Calocera* Fr. 1874.—Nomen dubium. Doubtfully basidiomycetous. Sensu Corda 1838 I. 2: 34 *pl. 14 f. 121* (*Coryne*), apparently a quite different species.

urticae, Tremella, Pers. 1801: 628 (Germany) (nom. anam.) (d.n.); *Dacrymyces* Mart. 1817 (d.n.); *Tremella* Pers. per Mérat 1821; *Dacrymyces* Fr. 1822; ≡ *Cylindrocolla urticae* (Pers. per Mérat) Bon., fide L. Tul. 1853 (ASn III 20): 167, the imperfect state of *Peziza fusarioides* Berk. ≡ *Calloria fusarioides* (Berk.) Fr., *q.v.* — Deuteromycetes.

ustulata, Tremella, Bull. 1788: *pl. 420 f. 2* (France) (d.n.) per St-Am. 1821; *Gyraria* S. F. Gray 1821.—Fide Fr. 1822: 258 = *Sclerotium pyrinum* (A. & S.) per Fr. Apparently still a nomen dubium.

Uthatobasidium (Tulasnellaceae)

utriculata, Tremella, Huds. 1778: 564 (England) (d.n.).—Fide Ag. 1824: 26 = *Rivularia angulosa* Roth = *Gloeotrichia natans* (Hedw.) per Born. & Flah. — Nostocaceae heterocysteae.

uvae-ursi, Exobasidium, *Exobasidium andromedae* forma

uvida, Sebacina, (Fr.) Bres. 1891, misapplied; *Thelephora viscosa* var. Fr. 1828 E. 1: 218 (Sweden); *Exidiopsis* Bourd. & L. Maire 1920 (nom. nud.), misapplied.—Fide Lundell 1947 (LNF 29–30): 20 No. 1432 = *Corticium lividum* (Pers. per Fr.) Fr. ≡ *Phlebia livida* (Pers. per Fr.) Bres., Corticiaceae. — Sensu Bres. = Sebacina effusa

vaccinii, Exobasidium, *Fusidium*; sensu Fuck., in part = Exobasidium myrtilli; sensu Cavara, in part = Exobasidium rhododendri

vaccinii-myrtilli, *Exobasidium* = Exobasidium myrtilli

vaccinii-uliginosi, Exobasidium

vaga, *Coniophora* = Uthatobasidium ochraceum

vagum, *Ceratobasidium*, (B. & C. apud Berk.) Pilát 1957, misapplied; *Corticium* B. & C. apud Berk. 1873 (G 1): 179 (U.S.A., South Carolina); *Pellicularia* D. P. Rog. apud Linder 1942; ≡ *Botryobasidium vagum* (B. & C. apud Berk.) D. P. Rog. 1935, Corticiaceae. — Sensu Burt, in part = Thanatephorus cucumeris; sensu Pilát = Ceratobasidium anceps

vagum var. *solani* Rolfs, *Corticium* = Thanatephorus cucumeris

vermifera, Sebacina

vermiformis, *Dacrymyces*, B. & Br. 1878 (AM V 1): 25 *pl. 3 f. 1* (England).—Nomen dubium.

vernicosa, *Ceracea*, Cragin 1885 (BWb 1): 82 [cf. 1885 (JM 1): 58] U.S.A., Kansas).—An imperfect fungus, fide G. W. Mart. 1949 (M 41): 78–79, and apparently non-basidiomycetous. Reported from Finland by P. Karst. 1889 (BFi 48): 461 as a dacrymycetous species. A doubtful record.

vernicosa, Tulasnella

verrucosa, *Tremella*, L. 1753: 1158 (Sweden) (d.n.) = *Nostoc verrucosum* Vauch. per Born. & Flah. 1888 (ASn VII 7): 216. —Nostocaceae heterocysteae.

versicolor, Tremella

verticalis, *Tremella* = Tremella foliacea

vesicaria, *Tremella*, Bull. 1788: *pl. 427 f. 3* & 1791 H.: 224 (France) (d.n.) per Spreng. 1827.—Nomen dubium. Sensu Sm. 1812 (EB 35): *pl. 2451* = ?; sensu Peck 1879 (RNS 28): 53 = *Tremella reticulata* (Berk.) Farl., an extra-European species.

vestita, [Achroomyces], *Platygloea*

villosa, Exidia

villosum, *Agarico-gelicidium* = Auricularia mesenterica

violacea, *Auricularia*, (Bull. per Mérat) Streinz 1861 (syn.) ≡ *Auricularia tremelloides* var. *violacea* Bull. 1791 H.: 278 (France) (d.n.) ≡ *Auricularia tremelloides* (typonym); = *A. mesenterica* (p. 154).

violacea With., *Helvella* = Auricularia mesenterica

violacea, *Ombrophila*, Fr. 1849, not ∼ (Hedw.) per Rehm 1891 (erroneous recombination misapplied to Fries's species); ≡ *Peziza clavus* var. *violascens* A. & S. 1805: 303 (Germany) (d.n.). — Discomycetes. — Sensu Quél. = *Craterocolla cerasi* (**26**)

violacea, *Rhizoctonia* = Helicobasidium brebissonii; sensu auctt. nonn. = Thanatephorus cucumeris

violacea Bull., *Tremella*, *Tremella mesenteriformis* var. = Tremella foliacea

violacea, *Tremella*, Pers. 1801: 623 (d.n.; "*Tremella violacea* ... Relh. ... huius quoque loci"), not ∼ Relh. 1785 (d.n.), *q.v.*, not ∼ Schrank & Moll 1785 (d.n.), not ∼ (Bull.) Pers. 1818 (d.n.); *Dacrymyces* Mart. 1817 (d.n.); *Gyraria* (Pers.) per S. F. Gray 1821; *Tremella* Pers. 1822; *Dacrymyces* Fr. 1822.—Cf. "*Sirobasidium*" *cerasi* Bourd. & G., *q.v.*, or else a nomen dubium. — "*Dacrymyces violaceus*, Schwein. Syn. Car. 1148" (nom. nud.), cited by Cooke [1891 (G 20): 15] refers to a mere application of *T. violacea* Pers. — Sensu Tul. = Myxarium hyalinum; sensu Bourd. & G. = Tremella moriformis — Cf. (**69**).

violacea Relh., *Tremella* = Auricularia mesenterica

violacea, *Tremella*, Schrank & Moll 1785 N.B. 2: 316 (Germany) (d.n.), not ∼ Relh. 1785 (d.n.), not ∼ Pers. 1801 (d.n.) & (Pers. per S. F. Gray) Pers. 1822, not ∼ (Bull.) Pers. 1818 (d.n.).—Nomen dubium. Schrank (1789: 563) cited *Helvella mesenterica* Dicks. 1785 P.c. 1: 20 ("Discon. Magaz. für d. Bot. II. 60") as synonym. Dickson's species is now known as *Auricularia mesenterica*. The original description of this *T. violacea* does not support this identification.

violacea, *-um*, Tulasnella, *Corticium*, *Pachysterigma*

violaceum, *Oidium*, Harting 1846 (ASn III 6): 47 *pl. 6 f. 16* (Netherlands) (nom. anam.). —This has been listed by Sacc. & Trav. 1911 (SF 20): 679 under *Rhizoctonia violacea*, but the protologue is so brief and vague that there is little reason to accept this.

violaceus, *Hypochnus* = Helicobasidium brebissonii

violascens, *Tremella*, (A. & S. per Fr.) Streinz 1861 (syn.) ≡ *Tremella foliacea* var. *violascens* A. & S. 1805: 303 (Germany) (d.n.) per Fr. 1822: 213.—Fide Neuh. 1936 (ABS 28[1]): 20–21 = "eine Bulgariacee aus der

Gegend von *Coryne*"; cf. *Tremella sarcoides* Fr., *q.v.* — See also (**63**).

virens, Tremella, Schw. 1822: 115: Fr. 1822: 216 (U.S.A., North Carolina).—This was recorded form Belgium by Westend. 1852 (BAB 19): 124 ("Fr. Syn. myc."). It was later described as *Epidochium virens* Westend. — Deuteromycetes.

violea, *-um, -us*, Tulasnella, *Corticium, Hypochnus*

virescens Corda, *Naematelia, Tremella* = ? Tremella exigua

virescens Schum., Tremella, *Dacrymyces*

viridis, Tremella, Retz. 1769 (SVH 30): 251 (Sweden).—Nomen dubium. Not a fungus it would seem.

viridis muscorum, Tremella, Secr. 1833 M. 3: 288 (Switzerland) (double epithet: n.v.p.). —Instated for *Tremella muscorum* Schleich., *q.v.* & *T. minutum* Schleich., *q.v.* Nomen dubium. Cf. *Nostoc* sp., spp.?

viridissima—"[*Tremella*] *viridissima* Hall.", Streinz 1861 (syn.) ≡ (an abbreviation of the phrase-name) *Tremella viridissima, corniculis palmatis* Haller no. 2125.—Fide Haller, l.c. = *Tremella palustris gelatinosa Damae cornuum facie* Dill. [= *Chaetophora incrassata* (Huds.) Haz.]. — Chlorophyceae.

viscaria, Tremella, Neck. 1768: 523 [cf. Pers. 1797 C.: 221/89] (d.n.).—Nomen dubium. Persoon, l.c., thought of *Acrospermum cornuta* ≡ *Tremella cornuta* (Pers.) Pers., *q. v.*,("sed forte tamen diversa"); fide Fr. 1822: 217 = *Tremella sarcoides* Fr., *q.v.*, but this seems not acceptable, no more than Hoffmann's identification (1787 V.c. 1: 23) with *T. digitata* Hoffm., *q.v.*

viscosa, *-um*, Pers., Calocera, *Clavaria, Corallium* Hahn 1883, *Merisma*

viscosa, Tremella, (Pers. per Fr.) B. & Br. 1848, misapplied; *Corticium* Pers. 1799 O. 2: 18 (Germany) (d.n.); *Thelephora* (Pers.) per Fr. 1821, not ~ Pers. 1822; *Exidia* P. Karst. 1889 & Rea 1922, misapplied; = *Phlebia livida* (Pers. per Fr.) Fr., Corticiaceae. — Sensu Schum. = *Thelephora viscosa* Pers., *q.v.* (not listed); sensu B. & Br. = Exidia albida; sensu Britz. = *Sebacina incrustans*, fide Neuh. 1935 (PM 2a): 24 (not listed)

viscosa, Thelephora, Pers. 1822: 149, not ~ (Pers.) per Fr. 1821.—Nomen dubium. This has been referred to *Tremella viscosa* Fr. (**33**).

viscosa Fr., *Tremella* = Exidia albida

vitis, Aureobasidium, Viala & Boyer 1891 (CrP 112): 1150 (France) (nom. anam.); *Exobasidium* Prill. & Del. 1894; = *Aureobasidium pululans* (Bary) Arnaud. — Deuteromycetes.

volvata, Ditiola, (Tode) per Fr. 1822: *Tuberculatia* Tode 1790: 20 *pl. 4 f. 33* (Germany) (d.n.).—Nomen dubium.

vulgare, *-is*, Stilbum, *Botryonipha*

vulgare, Tremellodon, Quél. 1877 (BbF 23): 316 (nom. nud.), presumably ≡ Pseudohydnum gelatinosum (p. 173).

warmingii, Exobasidium, *Arcticomyces*

Xenogloea = Kriegeria

Zonaria Roussel = Auricularia

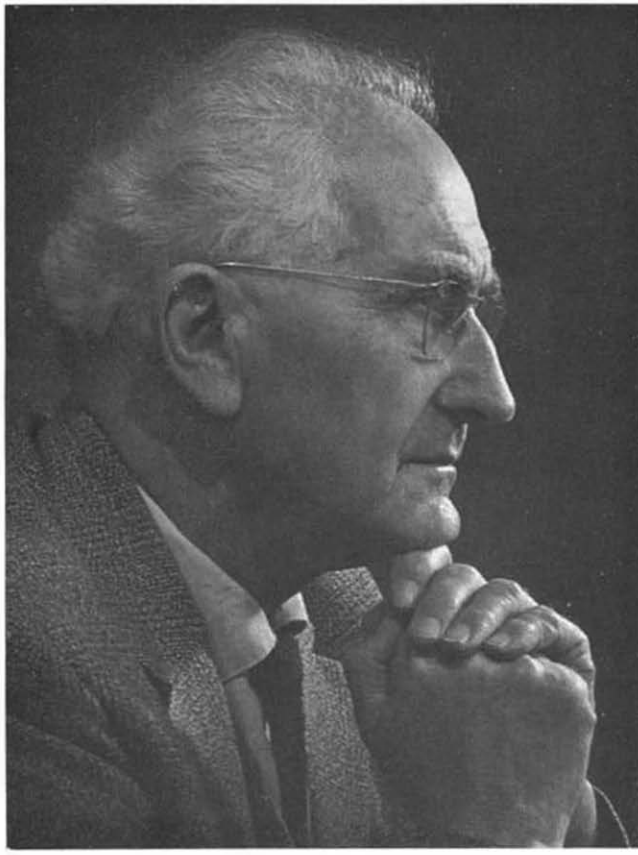
Additions and corrections

Page 155.—Add under *Clavaria falcatispora* the following reference: Velen., Nov. mycol. noviss. *pl. 2 f. 20.* 1947.

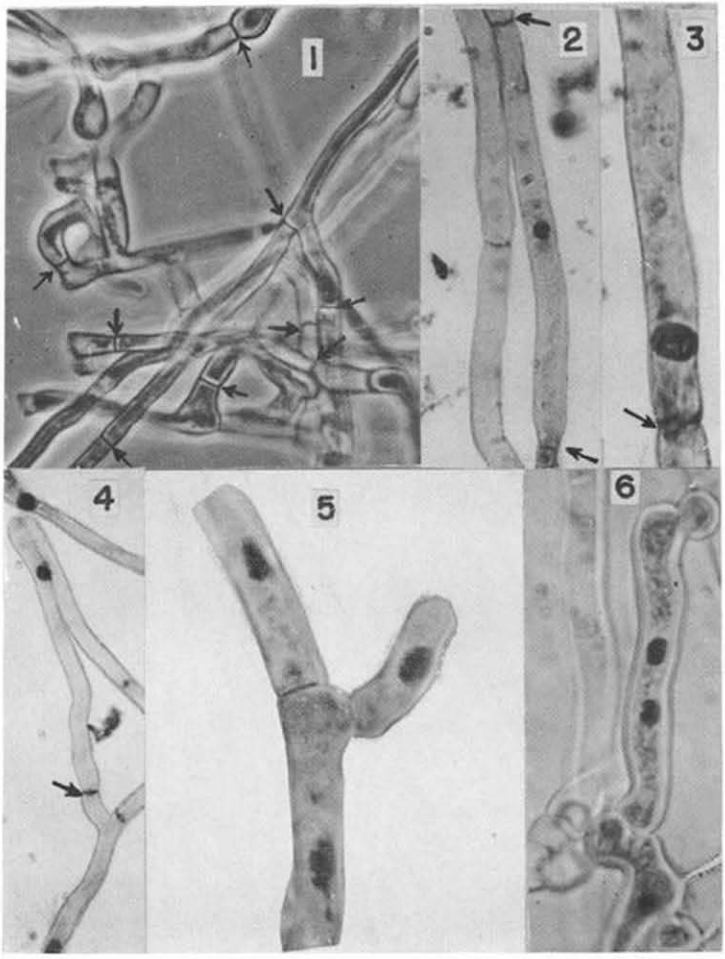
Page 196.—Add '*Corallium* Hahn 1883' to the recombinations under *Calocera viscosa*.

Page 204.—Delete '*Guepinia* Sacc. 1873' as a recombination under *Guepiniopsis buccina*, and add under this name as synonym:

Guepieia buccina Sacc. 1873 (Italy). — Sacc. *in* Atti Soc. ven.—trent. Sci. nat. **2** : 108 *pl. 8 fs. 1–6.*



MR. P. GROENHART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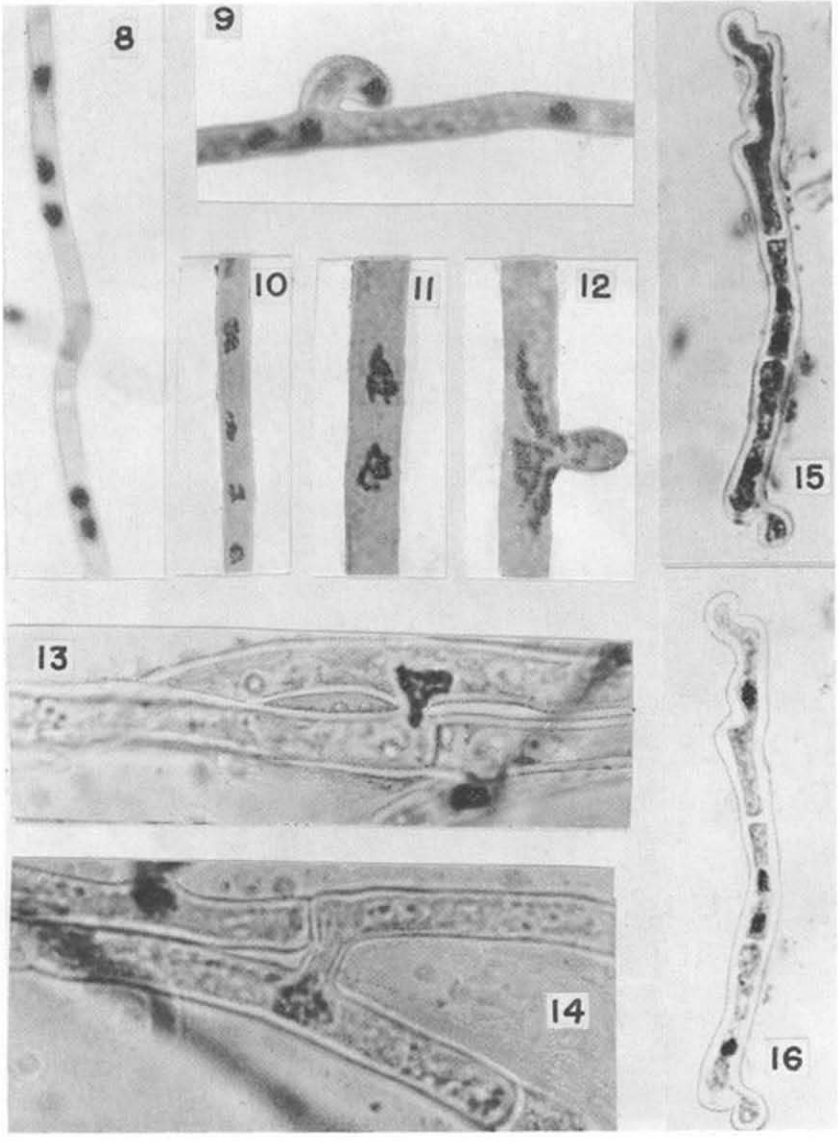
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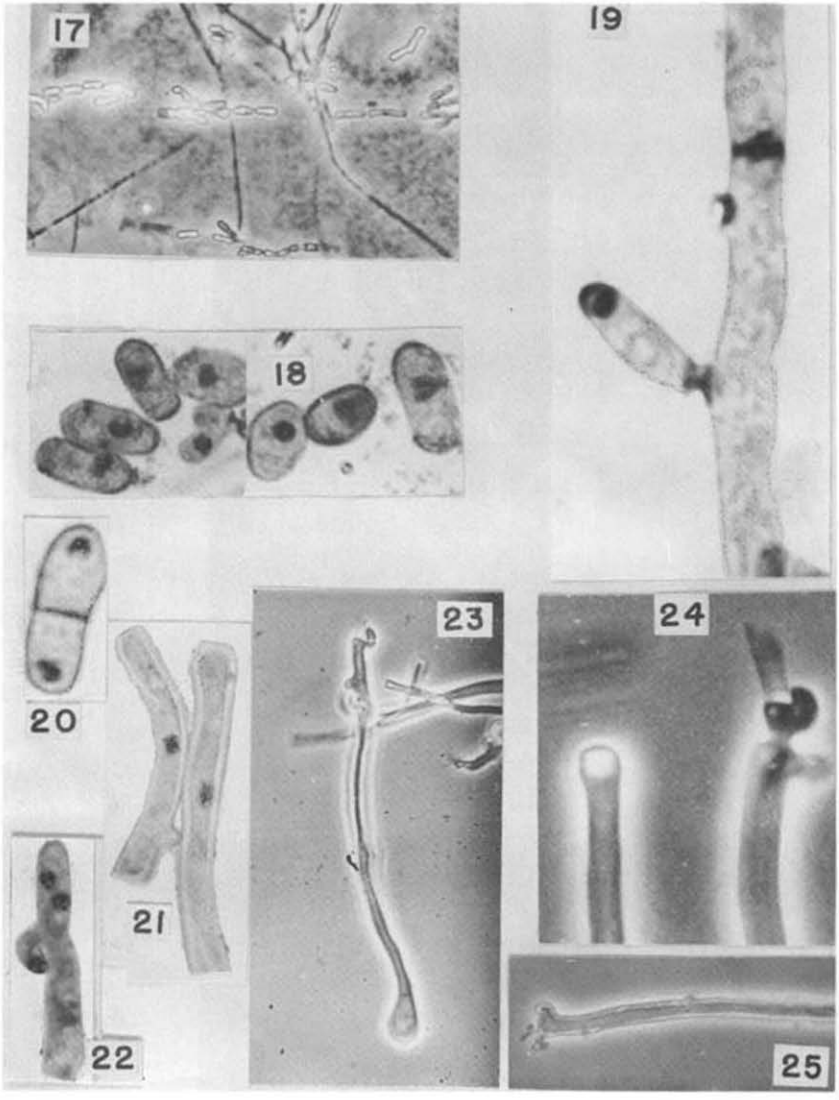
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