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VALIDATION OF THE HARPELLALES AND ASELLARIALES

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The Harpellales and Asellariales, two of four orders currently classified in the Trichomycetes, have been widely referred to in the literature, but apparently have never been validly published. The name Harpellales is based on the Harpellaceae, a family proposed by Léger and Duboscq in 1929 at the time they described *Harpella melusinae*. The ordinal name was first used by Duboscq, Léger and Tuzet in their 1948 monograph to include the Harpellaceae and Palavasciaceae. The latter family is now considered to belong to the Eccrinales (Manier and Lichtwardt, 1968). The inclusion of the Genistellaceae in the Harpellales was proposed by Manier in 1962, and it is with this concept that we offer a Latin diagnosis for the purpose of validating the order. However, Pouzar (1972) correctly pointed out that *Genistella* Léger & Gauthier, the type genus of the Genistellaceae, is a later homonym of *Genistella* Ortega, a genus of the Papilionaceae described in 1773, and proposed the names *Legeriomyces* and Legeriomycetaceae for the fungal taxa. Thus, the Harpellales is presently constituted of two families, the Harpellaceae and Legeriomycetaceae. We are indebted to Dr. Donald P. Rogers for the translation to Latin.

HARPELLALES Lichtwardt & Manier, ord. nov.

Thalli simplices vel ramosi, sporas exogenas, vulgo appendiculatas, scilicet trichosporas, e cellularum genitalium serie gignentes. Zygosporae biconicae.

We also recognize the order Asellariales established by Manier in 1950 which contains the single family Asellariaceae. The family name was validated by Manier and Lichtwardt in 1968 by providing a Latin diagnosis, but the ordinal name has not been validated. Therefore, we now formally erect this order.

ASELLARIALES Manier & Lichtwardt, ord. nov.

Latin diagnosis same as the effectively published diagnosis of the Asellariaceae in Manier and Lichtwardt, 1968, p. 526.

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THE DISTRIBUTION OF *Nais inornata*, A FACULTATIVE MARINE ASCOMYCETE

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There has been some controversy as to exactly what constitutes a marine fungus. Hughes (1975) in reviewing the literature in this area was inclined to accept the ecological definition of Kohlmeyer and Kohlmeyer (1964) which places primary emphasis on the habit in which a species develops and reproduces rather than the response of the species to various salinities. Although changes in salinity have been demonstrated to be an important factor affecting the distribution patterns of fungi on substrata submerged in estuaries (Schaumann, 1968; Shearer, 1972; Brooks, 1977), changes in salinity along fresh/salt water interfaces are accompanied by changes in surrounding vegetation, turbulence, turbidity, pH, organic and inorganic nutrient levels and biotic community composition. Thus, salinity may not be the sole explanation for why a species occurs where it does. Although a species may grow and reproduce throughout a wide range of salinities in the laboratory, its occurrence in the field may be limited by habitat parameters other than or in addition to salinity. Therefore, an ecological definition of which organisms should be considered marine is indeed valid.

Kohlmeyer and Kohlmeyer (1964) and Kohlmeyer (1974) consider as marine those fungi which grow and reproduce in marine habitats. They divide this group into obligate species which grow and reproduce exclusively in marine or estuarine (brackish water) habitats, and facultative species which occur in freshwater or terrestrial habitats but which can also grow in marine habitats. Hughes (1975) pointed out the importance of a broad view of what constitutes a marine habitat in order to include fungi from a variety of marine and marine-influenced habitats such as estuaries, salt marshes, salt ponds, etc.

Facultative marine species are very difficult to characterize. They may occur along gradients of salinity from freshwater to seawater and from totally submerged marine habitats to emergent terrestrial habitats, or they may be found in widely disparate habitats. With respect to their occurrence along a salinity gradient from 0.0 to 35 °/₀₀, theoretically, fungal species could be facultatively marine in three different ways. A species could occur with the greatest frequency in freshwater habitats and less frequently at low to moderate salinities or it could occur with the greatest frequency in seawater and less frequently at moderate salinities or in freshwater. In addition, a species could occur most frequently at intermediate salinities and less frequently in both seawater and freshwater habitats. From studies made thus far (Hughes, 1975), it appears that few species could be expected to occur with equal frequency in freshwater, estuarine and marine habitats. Although salinity is one of the most common parameters used to characterize the marine habitat, it is again recognized that all the parameters discussed in the first paragraph will vary along with salinity and no attempt is made here to explain the distribution of a species solely on the basis of salinity.

Nais inornata Kohlmeyer, a facultative marine species, has been reported from a variety of marine and freshwater habitats. The type specimen was collected from a saltwater "etang" of unknown salinity near St. Cyprien-Plage (Pyrénees Orientales) by Kohlmeyer (1962). G. C. Hughes (1960) collected a fungus (*Melanopsamma* sp.) which Kohlmeyer (1962) considered similar in most respects to *N. inornata*. It was found on pine panels submerged in the Neuse-Newport Estuary and because it occurred in water with

a salinity range of 0.0 to 0.7 °/₀₀, Hughes designated it a limnetic species.

A series of collections of *N. inornata* were made from wood test panels which had been placed in cooling towers in Great Britain. It occurred on panels placed in the inlet trough, holding pond, and in the cooling tower at Connah's Quay on the River Dee (Eaton & Jones, 1971a, b; Eaton & Irvine, 1972). The water at this site was described as brackish and attempts were made to keep salinities at low levels by pumping only during low tide and when freshwater runoff increased during the wincer. *Nais inornata* did not occur at a cooling tower at Ince which draws freshwater from the River Dee. Although this water was not saline, it had a higher ionic concentration than the water at Connah's Quay because the system was not purged regularly. Eaton and Jones (1971a, b) linked the appearance of *N. inornata* with brackish water and considered it a marine species. Byrne and Eaton (1972) reported *N. inornata* from test blocks of beech and Scots pine suspended in water that was 10, 50, 75 and 100% of the concentration of seawater and it was also collected from beech panels suspended in seawater tanks at the Marine Biology Station, Hayling Island, Great Britain.

Shearer (1972) collected *N. inornata* from balsa wood blocks submerged in both non-tidal freshwater and brackish-water areas of the Patuxent River, Md. It occurred throughout a salinity range of 0.08 to 17.2 °/₀₀, but with the greatest frequency in freshwater and the lowest frequency at higher salinities. Gessner and Goos (1973a, b) reported that *N. inornata* occurred on *Spartina alterniflora* in a tidal salt marsh adjacent to a tidal creek in Rhode Island with a salinity of 27.0 to 29.0 °/₀₀.

Schmidt (1974) found *N. inornata* on wood, *Phragmites* sp. and conifer cones in the Baltic Sea in waters ranging from 0.5 to 18 °/₀₀. Because this species occurred with great frequency at salinities lower than it had been reported from previously, she suggested that its distribution may be related to a factor other than salinity. She postulates that the high frequency with which it occurred in the β-mesohaline zone (5 to 10 °/₀₀) may be ascribed to the abundance of intertidal plants in this area and she believed that *N. inornata* favored these plants over wood as substrata. *Nais inornata* was also

reported from *Juncus* sp. in a saline lake ($MgSO_4$, Na_2SO_4) with a salinity of 10.7 °/₀₀ (Davidson, 1974).

We have recently collected *N. inornata* from submerged balsa wood baits and decomposing plant substrates from three different freshwater habitats, the Sangamon River, Illinois and three cypress swamps and a lake in southern Illinois. In addition we have collected it from *Juncus* sp. in a marsh of unknown salinity in Florida, from the Rhode River, an estuary of the Chesapeake Bay, Md., (salinities at the time of collection ranged from 3.3 to 16.6 °/₀₀), from the intake and effluent canals of a power plant on the Patuxent River, an estuary of the Chesapeake Bay (salinities at the time of collection ranged from 3.3 to 9.0 °/₀₀), and from Gott's Gut, a drainage creek from a brackish water marsh on the Patuxent River, Md.

Since *N. inornata* is known principally as a marine fungus, we compared our freshwater collections with the type specimen and protologue. Our collections are identical to the type with one exception. When ascospores from collections in the Sangamon River and Elvira Cypress Swamp were mounted in distilled water, they sometimes bore an irregular gelatinous appendage (Figs. 2-4, 7 & 11) which disappeared soon after the ascospores were released from the perithecium. Appendaged ascospores did not occur in every perithecium examined from each collection. Since appendages seem to be ephemeral, whether they are observed or not may depend upon the age of the perithecium. Other than the occasional presence of appendages, there were no other morphological differences between ascospores from

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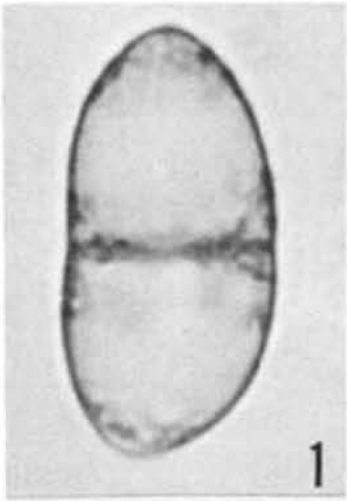
Figs. 1-13. *Nais inornata*. Figs. 1-7, 9-11, 13. Mature ascospores. Fig. 1. Based on the type collection cleared of oil droplets and stained with hematoxylin. X 1,520. Figs. 2-4, 7, 11. Ascospores with appendages. Figs. 2-4 and 7. X 1,100. Fig. 11. X 1,190. Figs. 5, 6, 9, 10, 13. Ascospores without appendages. Note the accumulation of oil droplets at the septa and apices. Figs. 5, 6 X 1,190. Figs. 9, 10. X 1,400. Fig. 13. X 616. Fig. 8. Mature ascus from the type collection. X 634. Fig. 12. Perithecium. X 150.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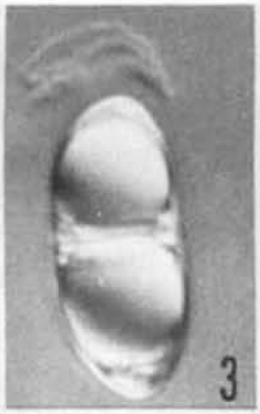
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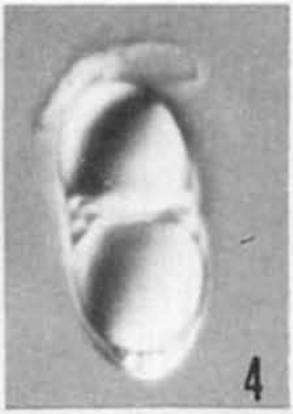
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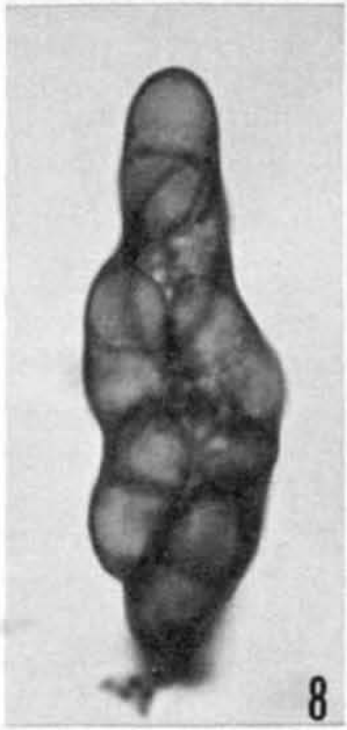
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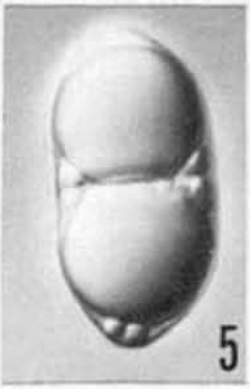
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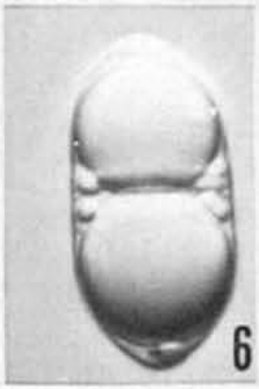
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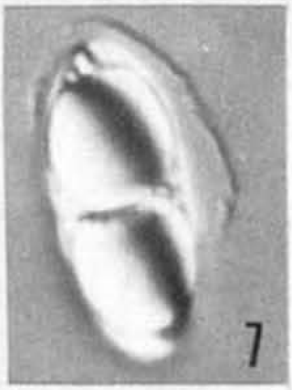
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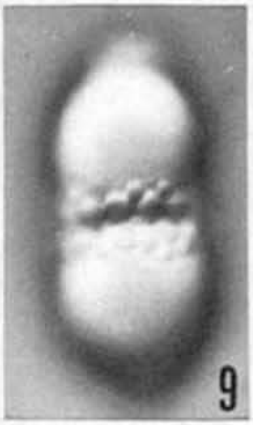
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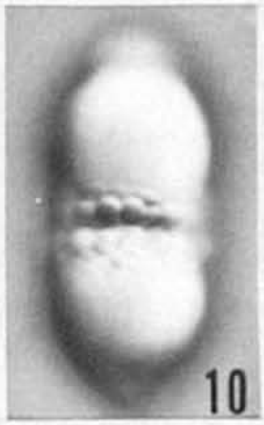
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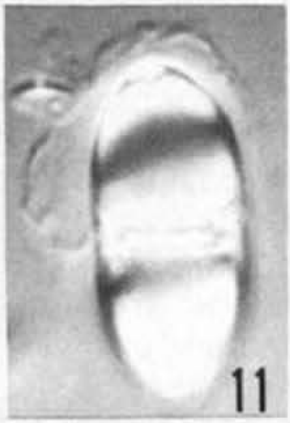
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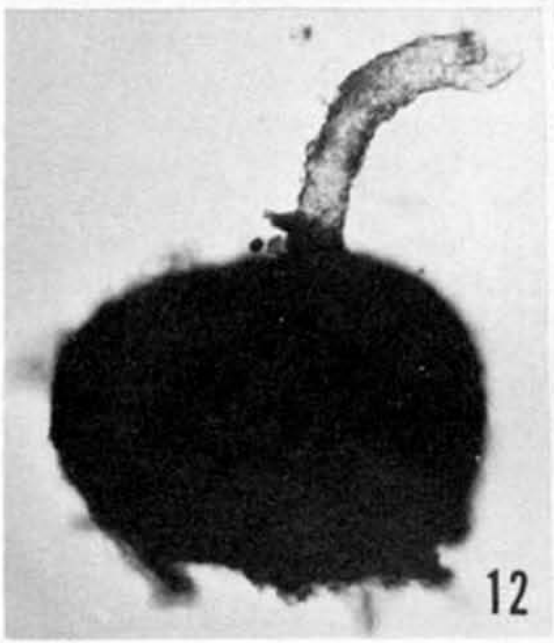
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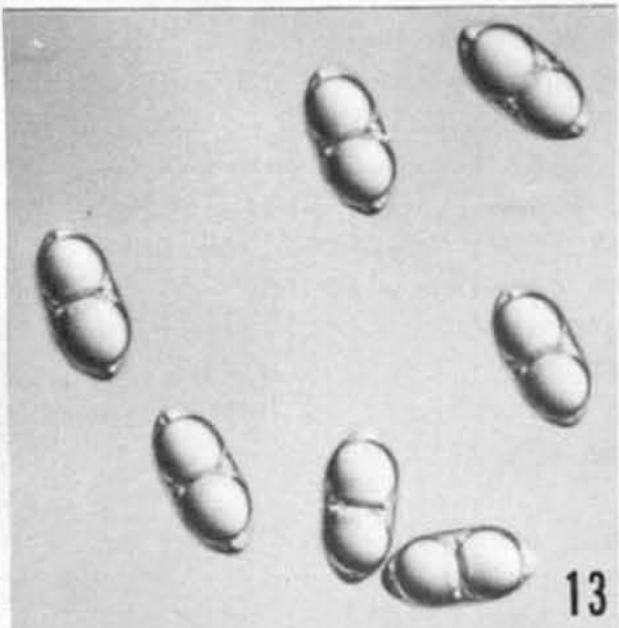
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freshwater collections and ascospores from the type specimen.

The dimensions of ascospores from each of four freshwater collections were compared to those of spores from the type specimen using a t-test. There were no significant differences at the 95% level except in the collection from Pine Hills Swamp. The ascospores of the Pine Hill collection were on the average, 2 μm shorter than those of the type specimen. Because the asci deliquesce at an early stage and are difficult to obtain in large numbers and few perithecia were available in the type specimen, we were unable to test statistically similarities in measurements of these structures. The measurements of perithecia, asci and ascospores of all the populations (freshwater and brackish) which we examined fit within the ranges presented in the type description.

A question exists as to the nature of the refractile structures which occur as a band about the septum of the spore (Figs. 5, 6, 9, & 10). They were described as pore-like markings of uniform size by Johnson and Sparrow (1961) who considered them to be wall sculpturings and not oil droplets. Kohlmeyer (1962) noted that these structures stain orange in Sudan II and clear with alcohol, thus he considered them to be oil droplets. We found that when spores were fixed with alcohol and extracted with chloroform or fixed and extracted with acetone and then mounted in lacto-phenol containing Azur-A, some refractile material disappeared but fine sculpturing on the inner spore wall was distinctly visable in a band about the midseptum and at each end of the spore. It is likely that wall material is deposited irregularly in these regions and possibly lipids accumulate in these sculpturing areas. Wall sculpturings on the ascospores from the holotype, prepared and stained with hematoxylin in 1961, are clearly visable. An electron microscopic study is warranted to conclusively demonstrate the presence and nature of these sculpturings. The following description of *N. inornata* is based on our collections from fresh and brackish water.

Nais inornata Kohlm. Figs. 1-13

Perithecia globose, black, membranous, ostiolate, immersed or superficial, 240-500 μm diam. Perithecial

wall pseudoparenchymatic, composed of thick-walled, dark brown cells. Ostiole periphysate. Neck hyaline or subhyaline, cylindrical simple or branched, 150-1,780 µm long, 25-50 (-69) µm wide at base, tapering to 24-36 (-43) µm wide at apex. Centrum aparaphysate, at first containing hyaline, thin-walled, pseudoparenchymatic cells, at maturity consisting only of a basal layer of asci or asci and catenophyses. Catenophyses hyaline, pseudoparenchymatic, simple or branched, with an apical, basal or lateral attachment. Asci unitunicate, clavate, 8-spored, thin walled, somewhat stipitate, evanescent at maturity, 80-150 x 20-35 µm. Ascospores ellipsoidal, 1-septate, hyaline, with or without constrictions at the septa, with inner wall ornamentations in a band at septum and at each end, oil droplets characteristically accumulating in the regions of wall ornamentation, (19.2-) 21.6 - 26.4 (-29) x 9.6 - 14.4 µm.

Material Examined:

Holotype: In ligno putrido, in aqua salina, in lacu prope "St-Cyprien-Plage" in Gallia sito, proxime mare Mediterranean, 23 May 1961. J. K. No 516 (B) et herb. J. Kohlmeyer. On balsa wood, Maryland, Franklin City, 11 March 1970, C. A. Shearer CS-102-2, ILLS 37219; Calvert County, Rhode River, Smithsonian Research Station, 23 Nov. 1971, C. A. Shearer CS-102-4, ILLS 37218; C. A. Shearer CS-83-10, ILLS 37215; Rhode River at Pier, 12 May 1972, C. A. Shearer, CS-83-11, ILLS 37222; Patuxent River at Solomons Island, 12 Feb. 1970, C. A. Shearer, CS-83-2, ILLS 37225; 2 Feb. 1968, C. A. Shearer, CS-83-15, ILLS 37210; Patuxent River at Gott's Gut, 5 Jan. 1973, C. A. Shearer, CS-83-4, ILLS 37226; Patuxent River at Lower Marlboro, 13 Aug. 1969, C. A. Shearer CS-102-3, ILLS 37217; Patuxent River at Hallowing Point, 12 Feb. 1971, C. A. Shearer CS-83-12, ILLS 37221; 22 Oct. 1969, C. A. Shearer CS-83-16, ILLS 37211; 22 Oct. 1969, C. A. Shearer, ILLS 37220; 12 Feb. 1970, C. A. Shearer CS-83-13, ILLS 37223. Montgomery County; Patuxent River at Triadelphia reservoir, 13 Aug. 1969, C. A. Shearer, CS-83-1, ILLS 37216; Prince Georges County, Patuxent River at Patuxent Wildlife Refuge Center, U.S. Dept. of Interior, 19 Apr. 1968, C. A. Shearer & J. L. Crane, ILLS 34566; 5 Apr. 1968, C. A. Shearer CS-83-17, ILLS 37209; Illinois, Johnson County, Heron Pond Cypress Swamp, 11 Sept. 1975, C. A. Shearer & J. L. Crane CS-83-8, ILLS 37212; 30

March 1974, C. A. Shearer & J. L. Crane CS-83-5, ILLS 37227; Union County, Wolf Lake, 26 July 1975, C. A. Shearer & J. L. Crane CS-83-7, ILLS 37213; 11 Sept. 1975, C. A. Shearer & J. L. Crane CS-83-6, ILLS 37214; Champaign County, Sangamon River at Brigham Station, Mahomet, 21 Oct. 1975, C. A. Shearer & J. L. Crane, CS-83-9, ILLS 37224.

Given the morphological similarity between populations of *N. inornata* from diverse freshwater and estuarine habitats, two hypotheses can be made. One, that *N. inornata* can grow and reproduce on a number of substrates throughout a wide range of salinities in a variety of habitats, and the other, that we are dealing with distinct physiological ecotypes adapted to specific habitats. Which of these hypotheses explains the distribution patterns of *N. inornata* can only be determined by examining and comparing the physiology of isolates from different habitats.

A review of the literature dealing with the occurrences of ascomycetes in freshwater and marine habitats reveals that this species has rarely been reported from seawater (35 °/$_{oo}$). The fact that it has been collected frequently from both disparate freshwater habitats and estuaries but rarely from the sea, suggests that this species was originally a freshwater species which became dispersed along salinity gradients in estuaries. Since colonized woody debris and ascospores are displaced downstream in rivers in a seaward direction, thus providing a constant source of inoculum, it is not unreasonable to expect the establishment of populations in brackish water. Whether or not the establishment of these populations involved some sort of compensation by the fungus either by physiological adaptation or selection for genetically different strains, is not known. We consider *N. inornata* to be a good example of the first type of facultative marine fungus, one which occurs most frequently in freshwater and low salinity habitats and with reduced frequency at higher salinities.

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VALIDITY OF MUELLEROMYCES VARIISPORUS (DIED.) ULLASA AND KAMATELLA LONGIPEDICELLATA (T. S. & K. RAMAKR.) ULLASA

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ABSTRACT

The legitimate names for the two fungi for which Ullasa published new combinations are *Muelleromyces indicus* M. N. Kamat & K. H. Anahosur and *Kamatella variispora* (Died.) comb. nov., respectively.

Publication of the binomial *Muelleromyces variisporus* (Died.) Ullasa (1971) for the ascomycete occurring on the foliage of *Syzygium cuminii* (L.) Skeels in Coorg Forests, Mysore State, with the autorities indicated, created a nomenclatural tangle that must be clarified. The new combination was, and is, contrary to article 63 of the International Code of Botanical Nomenclature (Stafleu *et al.*, 1972): "... it was nomenclaturally superfluous when published..."; "as circumscribed by its author" (Ullasa) the taxon "included the type of a name ... which ought to have been adopted under the rules." Ullasa cited *Muelleromyces indicus* Kamat & Anahosur (Anahosur, 1968) as a synonym. The description of *M. indicus* was the first complete and acceptable one published for this diapothaceous fungus. By publishing this new and independent description, automatically (even though probably unknowingly) the older binomial, *Diplodia variispora* Died. in H. & P. Sydow & Butler (1916), was rejected as a *nomen confusum* (Art. 70, Stafleu *et al.*, 1972) and consequently was not available subsequent to 1968 as a basionym for any ascomycete.

The concept of priority in regard to clarification of a *nomen confusum* versus rejection has been presented elsewhere (Thyr & Shaw, 1964). The principle of priority in regard to rejection of a *nomen confusum*, even when this is done unknowingly, is equally applicable and does not violate any rule in the Code.

Secondly, we believe Ullasa's "choice was based upon a misinterpretation of the protologue" and "was made arbitrarily" (Art. 8, Stafleu *et al.*, 1972). Diedicke, in assigning

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site way from that chosen by Ullasa. By the genus designation, by the description of "Pycnidiis" (not perithecia) and of conidiophores, it is obvious that Diedicke intended to describe a fungus imperfectus, not an ascomycete. Thus, the obvious "discordant elements" (Art. 70, Stafleu *et al.*, 1972) are ascospores, not all the other structures described by Diedicke!

Diplodia variispora is a *nomen confusum* for which it is easy to select, on the basis of protologue and the type, the component elements that should be associated with a Fungus Imperfectus and to eliminate the single structures described (ascospores) which are not part of the imperfect state. Prior rejection of this name as a basionym for the ascomycetous element does not make the name unavailable for the elements comprising the Fungus Imperfectus. As we interpret the Code, there is no rule which prevents, even after the publications by Anahosur (1968) and Ullasa (1971), the selection of "a satisfactory type" (Art. 70; also 8 and 9, *op. cit.*) for the Fungus Imperfectus involved in Diedicke's protologue. Therefore, we propose Kamatella variispora (Died. in H. & P. Sydow & Butler *pro parte, ascosporis exclusis*) *comb. nov.* as the correct name.

The synonymy for both the ascigerous fungus and the imperfect fungus are given below. It should be noted that although we, too, find these two fungi constantly associated, there is still no conclusive proof that they are states of one and the same fungus.

MUELLEROMYCES INDICUS M. N. Kamat & K. H. Anahosur in K. H. Anahosur, Experientia 24: 849. 1968.

Misapplication: *Muelleromyces variisporus* (Died.) Ullasa, *sensu* Ullasa (1971).

KAMATELLA VARIISPORA (Died.) *comb. nov.*

Basionym: *Diplodia variispora* (Died. in H. & P. Sydow & Butler, Ann Mycol. 14: 196. 1916. *(Pro parte, ascosporis exclusis.)*

Synonyms: *Diplodia longipedicellata* T. S. & K. Ramakr., Proc. Indian Acad. Sci. 32(B): 78. 1950.
Botryodiplodia variispora (Died.) Zambettakis, Bull. Soc. Mycol. Fr. 70: 319. 1954.
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Kamatella longipedicellata (T. S. & K. Ramakr.) Ullasa, Bull. Torrey Bot. Club 98: 3. 1971.
Muelleromyces variisporus (Died.) Ullasa, Bull. Torrey Bot. Club 98: 3. 1971 *(excl. specim. et descr.)*.

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REVISIONARY STUDIES IN THE ARACHNOPEZIZOIDEAE: A MONOGRAPH OF THE POLYDESMIEAE

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SUMMARY

The genus *Polydesmia* Boud., based on *P. pruinosa* (Jerd. *in* Berk. & Broome) Boud., a tiny white discomycete occurring primarily on pyrenomycetous stromata, is shown to belong to the Hyaloscyphaceae. Two species previously referred to the genus are excluded: *P. rosae* Killermann, on the pith of *Rosa* canes, is a *Propolomyces*, possibly *P. farinosus; Polydesmia herbicola* Svrček is transferred to *Hyaloscypha*. A previously undescribed Macaronesian species occurring principally on the fallen fruits and peduncles of mimosas (*Acacia* spp.) in Madeira and on the fallen capsules of *Eucalyptus globulus* in Madeira and the Canary Islands is described as *Polydesmia fructicola*. *Lasiobelonium dumontii* Korf, a Venezuelan species on a fern rachis, proves also to be a *Polydesmia*, and is transferred to that genus. Since *Lasiobelonium* must be abandoned in the sense adopted by recent authors, *L. miniopsis* (Ellis) Dennis is designated the type of, and *L. aquilinellum* v. Höhn. is transferred to, a new genus, *Parachnopeziza*. The genus *Eriopezia* (Sacc.) Rehm is reinvestigated, and a new species, *E. samuelsii* on *Gahnia* from New Zealand, added; *E. microspora* (Kanouse) Dennis is referred to *Lachnellula*, and *E. roseolo-tincta* Svrček is a pyrenomycete, *Nectria carnea* Desm. The three genera, *Polydesmia, Parachnopeziza* and *Eriopezia*, constitute the Polydesmieae, a new tribe in the new subfamily Arachnopezizoideae. Keys to the genera of the Polydesmieae and to the seven known species are provided. A new Macaronesian species, *Pezicula linda*, which may easily be confused with *Polydesmia*, is described in an appendix.

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POLYDESMIA: A HISTORICAL SURVEY

Boudier (1885) erected *Polydesmia* for a single species, *Helotium pruinosum* Jerdon *in* Berk. & Broome, and placed the genus in the family 'Caloriacés.' From other genera of this family with highly branched, delicate paraphyses (*Epiglia* Boud., *Calloria* Fr., *Corynella* Boud., and *Mniacea* Boud.) *Polydesmia* was distinguished by its furfuraceous hymenium. Boudier's later treatment (Boudier, 1907) is essentially similar, and the genus remained monotypic until two species were added, *P. rosae* Killermann (1935) and *P. herbicola* Svrček (1967).

Saccardo (1889) transferred Jerdon's species to *Pseudohelotium* Fuckel (1870), but to avoid homonymy with *Ps. pruinosum* (Wallr.) Sacc., he coined the new name, *Pseudohelotium jerdonii*, for *Helotium pruinosum*. Saccardo did not accept Boudier's genus *Polydesmia* in any of the volumes of the *Sylloge Fungorum*. Saccardo's wide concept of *Pseudohelotium* is no longer accepted, and many authors (von Höhnel, 1923; Dennis, 1956, 1960, 1968; Korf, 1973) treat it as monotypic, based on *Peziza pineti* Batsch *ex* Pers., a species on needles and cones of *Pinus* and not considered closely related to *Polydesmia pruinosa*.

Rehm (1891) also failed to recognize Boudier's genus, and treated Jerdon's species as *Belonidium pruinosum* (Jerd. *in* Berk. & Broome) Rehm. He considered *Belonidium* Mont. & Dur. *in* Dur. to be a genus of the family 'Mollisieae,' Abtheilung Eumollisieae. The generic name *Belonidium* has also been used in a wide sense by various authors. Since when the genus was founded it had only one species, the generic application must follow the taxonomic position of that species, *B. aeruginosum* Mont. & Dur. *in* Dur. That species is now either assigned to *Dasyscyphus* Nees *ex* Gray (Dennis, 1962) or accepted as a separate genus of the Hyaloscyphaceae (Raĭtviĭr, 1970). *Polydesmia pruinosa* has little in common with *B. aeruginosum*.

Rehm (1912) transferred the species of Jerdon to *Belonium*

Sacc., another genus of the Mollisioideae, and credited the combination to von Höhnel. This is doubtless a result of von Höhnel's (1909) statement, "In der Gattung *Belonidium* stehen in Rehm's Discomycetenwerk einige Arten, die richtig zu *Belonium* gehören, so *B. pruinosum* (Jerd.) und *B. subcarneum* Rehm." That these initials stand for *Belonidium*, not *Belonium*, is almost certain: neither in the index to new names in this fascicle, nor in the index to the first 1000 *Fragmente*, do the combinations in *Belonium* appear. The correct citation for the species in *Belonium* is *B. pruinosum* (Jerd. *in* Berk. & Broome) v. Höhn. *in* Rehm. No modern author has suggested any close relationship between *Polydesmia* and *Belonium*.

Killermann (1935) accepted the genus *Polydesmia* in the (tribe ?) Pezizelleae Rehm *emend.*, and described a new species, *P. rosae* Killerm., which I exclude (below) from the genus. Svrček (1967) described another new species, *P. herbicola* Svr., but did not indicate any position for the genus in the classification; this species I also exclude (below) from *Polydesmia*.

SOME MORPHOLOGICAL OBSERVATIONS ON THE TYPE SPECIES OF POLYDESMIA AND A NEW TAXONOMIC PLACEMENT OF THE GENUS

The pruinose hymenium which distinguishes *Polydesmia pruinosa* from most other minute discomycetes is the result of highly branched paraphysis apices extending well above the ascus tips and not being immersed in a gel. Such paraphyses have been termed *propoloid* by Sherwood (1977a). Not only the propoloid paraphyses, but also the fairly large, often bent ascospores of *P. pruinosa* recall similar structures in the Phacidiaceous genus *Propolomyces* Sherwood (1977b) [a genus better known as *Propolis* (Fr.) Fr. non *Propolis* (Fr.) Corda]. One other common genus has some species with a pruinose hymenium, *Pezicula* Tul. & Tul. (Dermateaceae, Peziculoideae). One Macaronesian species, *P. linda* Korf, easily confused with *Polydesmia*, is described below in an appendix to this paper.

Though early authors either described the apothecia of *Polydesmia pruinosa* as glabrous, or failed to mention any hairs, Massee (1895) described the apothecia as "often surrounded by more or less evident white hyphae." Boudier (1911) noted the apothecia to be "finement furfuracés ou tomenteux en dehors," and these comments are almost exactly repeated by Grelet (1948). Migula (1913) is apparently the

first to provide a description of the hairs on the apothecia: "äusserlich besonders am Rande in faserartige, etwa 30 µ lange, 3 µ breite, unregelmässige Hyphen auslaufend." Von Höhnel (1923) also saw the hairs: "in hyaline, 1 bis 1.5 µ dicke, kürzere oder bis 40 µ lange, stark wellig oder schraubig verbogene Haare endigen." I am able to confirm their observations (FIG. 14), and am convinced that the apothecial structure of hyaline, somewhat glassy-walled hyphae, often so short-celled as to appear as textura prismatica or textura angularis, giving rise to hairs, makes assignment of this species to the Hyaloscyphaceae wholly appropriate. It is possible that Svrcek (1967) considered *Polydesmia* to belong to the Hyaloscyphaceae, since he described a new species between diagnoses of two other new species, both of which were assigned to genera of the Hyaloscyphaceae. If so, he appears to have been the first to adopt what I consider to be the correct family disposition of the genus.

In the two recent classifications which have treated *Polydesmia* (Dennis, 1960, 1968; Korf, 1973), the genus has taken an isolated position. Dennis refers it to a monogeneric 'tribe' Polydesmioideae of the Helotiaceae (the -oideae ending, however, is that of a subfamily). Korf refers it to a monogeneric subfamily, Polydesmioideae, of the Leotiaceae. Neither the 'tribe' nor the subfamily have been given formal Latin diagnoses. I propose (below) a new tribe, Polydesmieae, to accommodate this genus and two others within the Hyaloscyphaceae.

TWO OTHER SPECIES OF POLYDESMIA: A NEW SPECIES FROM MACARONESIA AND LASIOBELONIUM DUMONTII

It was the discovery of an apparently undescribed species of *Polydesmia* from Madeira and the Canary Islands that prompted my reinvestigation of the genus and its type species. Unlike *P. pruinosa*, normally found (parasitic ?) on the stromata of various pyrenomycetes (particularly *Diatrype*, *Valsa*, *Hypoxylon*, and *Apiosporina*) or on wood or bark in which one can usually find immersed pyrenomycetes, the new Macaronesian species occurs on fallen pods and peduncles of mimosas (*Acacia* spp.) and on the fallen capsules of *Eucalyptus globulus* Labill. that show no sign of pyrenomycete invasion. More rarely it occurs on wood or bark. The hosts are not related botanically, but both were introduced and both are characterized by gums. The apothecia are tomentose like those of *P. pruinosa*, and the species is formally described (below) as *P. fructicola* Korf. The ascospores are

much narrower in *P. fructicola* than in *P. pruinosa*.

Only a year ago I described a new species, *Lasiobelonium dumontii* Korf (1977), on an unidentified fern rachis from Venezuela. This, like *P. pruinosa* and *P. fructicola*, has tiny apothecia which tend to fuse together, and a pruinose hymenium (overlooked when I described the species), as well as a dense covering of irregular to coiled hairs as in those species. There seems no doubt that this species is also congeneric with *P. pruinosa*, and it is formally transferred (below) as *P. dumontii* (Korf) Korf. Its most distinctive character is the 4-spored asci.

PARACHNOPEZIZA, A NEW GENERIC NAME FOR LASIOBELONIUM SENSU DENNIS

In the preparation of my keys to the genera of discomycetes (Korf, 1973), I restudied the only species of *Lasiobelonium* known at all well to me, *L. miniopsis* (Ellis) Dennis. I had wrestled with the placement of this species much earlier (Korf, 1952), since it clearly resembles *Arachnopeziza* in a number of characters, differing primarily in having apothecia arising from a tiny stalk directly inserted into host tissue (instead of sessile apothecia borne on the hyphae of an evident subiculum), and in its ascospores with many more than 7 septa. Often there is no evidence of a subiculum, but occasionally an obvious hyphal weft can be seen on the surface of the bark. Since these hyphae do not directly bear the apothecia, I used the term 'false subiculum' to refer to them in a footnote to the key to *Arachnopeziza* species (Korf, 1952: 152), where I referred to this species as *Dasyscyphella miniopsis* (Ellis) Kanouse. By the time I prepared my keys to the genera (Korf, 1973), I accepted *Lasiobelonium* in Dennis's (1962) sense (and specifically for *L. miniopsis*), placed for the first time in the Arachnopezizeae despite the lack of a 'true' subiculum.

Dennis (1962) accepted the invalid typification (see Korf, 1978) of *Lasiobelonium* (Sacc.) Sacc. & Syd. by Clements & Shear (1931) with *L. amoenum* (Speg.) Sacc. *ex* Clem. & Shear. He placed the genus for the first time in the Hyaloscyphaceae, and accepted two additional species, *L. aquilinellum* von Höhnel (1907) and *L. miniopsis*, a new transfer to the genus. Of these, *L. amoenum* remains an almost unknown entity (Korf, 1978). Dennis quite correctly concluded that *L. aquilinellum*, fully and correctly described by von Höhnel, is congeneric with *Peziza miniopsis* Ellis (1881). Both species have a small stalk directly inserted into the

host substrate, crisped to coiled hairs, very similar asci and paraphyses, but differ in substrate and number of ascospore septa. Both are composed throughout of hyaline cells, and both have a scanty subiculum (or 'false' subiculum as I previously termed it). Neither can be comfortably accommodated in *Arachnopeziza* Fuckel (1870) in my sense (Korf, 1952), which has completely sessile apothecia borne on the subicular hyphae, and I conclude they represent a good genus more closely allied to *Eriopezia* and to *Polydesmia* than they are to *Arachnopeziza*. Since *Lasiobelonium* (Sacc.) Sacc. & Syd. is unavailable (Korf, 1978), a new generic name, *Parachnopeziza*, is proposed (below) for them.

ARACHNOPEZIZOIDEAE, A NEW SUBFAMILY WITH TWO TRIBES, POLYDESMIEAE TRIB. NOV. AND ARACHNOPEZIZEAE EMEND.

Nannfeldt (1932) proposed dividing the Hyaloscyphaceae into three tribes, Lachneeae, Hyaloscypheae, and Arachnopezizeae. Since no formal diagnosis had been provided, Korf (1952) erected the Arachnopezizeae Nannf. *in* Korf in his monograph of the tribe. Since that time, the family has had added to it the subfamily Trichoscyphelloideae Nannf. (Dennis, 1963; Korf, 1973); the original three tribes constituted the subfamily Hyaloscyphoideae in my treatment (Korf, 1973). The question as to whether the Arachnopezizeae should even be attached to the Hyaloscyphaceae has been raised by Raĭtviĭr (1970), who excluded the genera from his treatment. Though I am in agreement with Raĭtviĭr that the Arachnopezizeae are not typical members of the Hyaloscyphaceae, I still prefer to range the genera in that family on the basis of similarity in tissues, hairs, and asci. The glassy-walled excipular cells are markedly different, I agree. I am therefore prepared to recognize the group of genera as a subfamily of the Hyaloscyphaceae, and propose to two tribes within the new subfamily. One of these is the new tribe Polydesmieae, consisting of three known genera, *Polydesmia*, *Parachnopeziza*, and *Eriopezia*. The second tribe is the Arachnopezizeae *emend.*, consisting of the genus *Arachnopeziza*, and possibly also the genus *Velutaria* Fuckel (1870) *emend.* Saccardo (1884, 1889), which is the correct generic name for *Tapesina* Lambotte (1887) *emend.* von Höhnel (1923), the name I used in my monograph (Korf, 1952; see in this regard Korf, 1953a, 1953b). The removal of *Eriopezia* from the tribe requires a slight emendation of the description.

ARACHNOPEZIZOIDEAE Korf, subfam. nov.

Hyaloscyphacearum subfamilia, apotheciis in subiculo sparso vel denso portatis, excipulo ex textura angulari vel prismatica parietibus aspectu vitri (refractivis) praedita consistente. Typus: *Arachnopeziza* Fuckel.

ARACHNOPEZIZEAE Nannf. *in* Korf, Lloydia 14: 139. 1952, *emend.*

The tribe now excludes *Eriopezia* (Sacc.) Rehm, one of the original genera.

POLYDESMIEAE Korf, trib. nov.

[= Polydesmieae Dennis, tribus of Helotiaceae, British Cup-fungi p. 90, 1960, *nom. nud.*, ut 'Polydesmioideae;' British Ascomycetes p. 143, 1968, *nom. nud.*, ut 'Polydesmioideae.']

[= Polydesmioideae Korf, subf. of Leotiaceae, *in* Ainsworth *& al.*, The Fungi 4A: 298. 1973, *nom. nud.*]

Arachnopezizoidearum tribus, apotheciis breviter stipitatis, stipite in substratum inserto, subiculo denso vel sparso circumdatis, pilis frequenter spiralibus vel crispatis. Typus: *Polydesmia* Boudier.

KEYS TO THE GENERA AND SPECIES OF THE POLYDESMIEAE

1. Apothecia gregarious, surrounded by a dense subicular mat; excipular cells dark brown, giving rise to hyaline hairs; ascospores 0- to 1-septate..... *ERIOPEZIA* 2
   2. Ascospores 0-septate, without a sheath; apothecia on wood..... *Eriopezia caesia*
   2. Ascospores 1-septate, sheathed with gel; apothecia on sedges..... *Eriopezia samuelsii*
1. Apothecia scattered on a scarcely visible subiculum; excipular cells hyaline, glassy-walled, giving rise to hyaline, coiled or crisped hairs; ascospores 1- to 15-septate..... 3
   3. Apothecia tiny, often coalescent; hymenium pruinose by virtue of propoloid paraphyses; ascospores fusoid, uniseriate or biseriate, 1- to 3-septate.. *POLYDESMIA* 4
      4. Asci regularly 4-spored, ascospores 1- to 3-septate; on ferns..... *Polydesmia dumontii*

4. Asci 8-spored (rarely with a few 4-spored asci).... 5
5. On pyrenomycetes or wood in which pyrenomycetes are imbedded; ascospores 11-21 × 3.3-5.1 µm, eventually 3-septate..... *Polydesmia pruinosa*
5. On fruits and peduncles (rarely on wood or bark); ascospores 5.9-11.0 (-16.8) × 1.5-2.2 (-2.9) µm, 1-septate (very rarely 2- or 3-septate in rare, 4-spored asci)..... *Polydesmia fructicola*

3. Apothecia tiny or easily visible with the naked eye, not coalescent; hymenium not pruinose; ascospores filiform, in a parallel bundle, 3- to 19-septate..... *PARACHNOPEZIZA* 6
6. Apothecia on bark, small; hymenium red; ascospores 15- to 19-septate... *Parachnopeziza miniopsis*
6. Apothecia on fern leaves, tiny, totally white; ascospores 3-septate..... *Parachnopeziza aquilinella*

ERIOPEZIA (Saccardo) Rehm *emend.* von Höhnel, Akad. Wiss. Wien Sitzungsber., Math.-Naturwiss. Kl., Abt. 1, 132: 116. 1923.

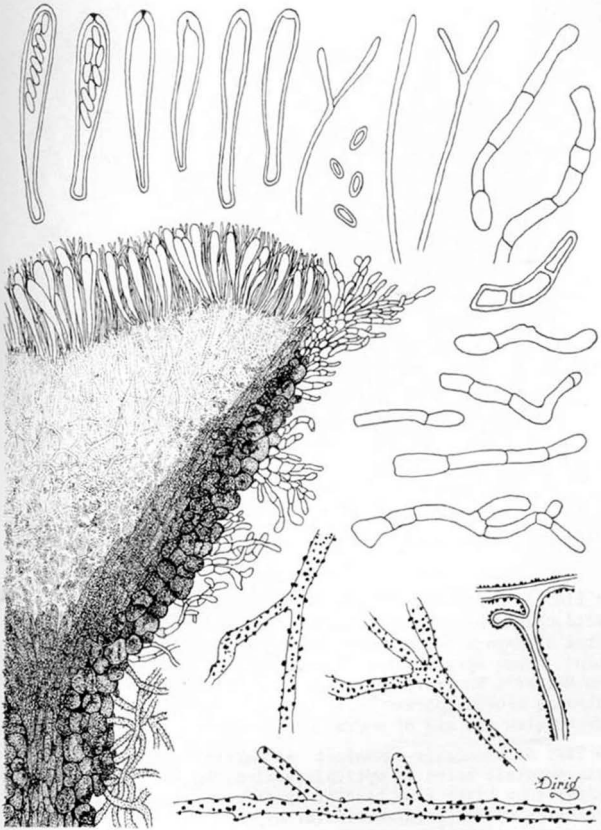
(For synonymy, see Korf, 1952.)

1. ERIOPEZIA CAESIA (Pers. *ex* Gray : Fries) Rehm *in* Winter, G. & H. Rehm [eds.], Pilze, Dr. L. Rabenhorst's Kryptogamen-Flora von Deutschland, Oesterreich und der Schweiz, ed. 2, 1(3) [Lief. 38]: 693, 696. 1892. FIG. 1

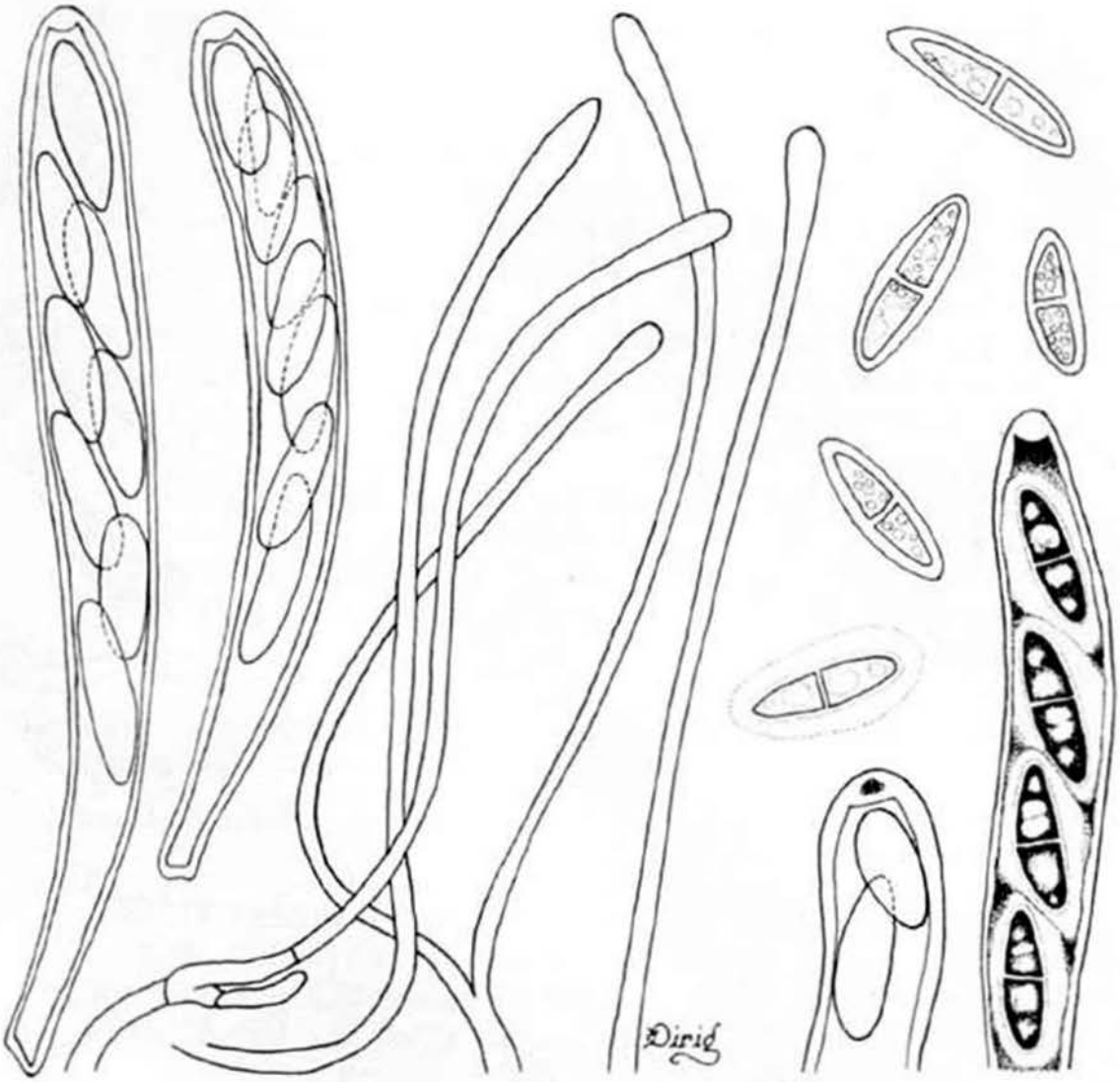
NOTES: I shall not repeat here the long list of synonyms and suspected synonyms that I provided earlier (Korf, 1952). The validating author was S. F. Gray (Nat. arr. Brit. pl. 1: 665. 1821). I have little to add to the description I gave then. The specimen for FIG. 1 is a recent collection taken in France by my colleague Françoise Candoussau and I. Mr. Dirig's drawings reproduced here are a great improvement over those I published (Korf, 1952).

2. ERIOPEZIA SAMUELSII Korf, sp. nov. FIGS. 2, 3

FIG. 1. *Eriopezia caesia*. Six asci, four with unstained pores mounted in KOH-phloxine, two with stained pores mounted in Melzer's Reagent after 10% (left) and 2% (right) KOH pretreatment; three paraphyses and four ascospores mounted in phloxine-KOH; eight marginal hairs, third from top shown in optical section; four portions of subicular hyphae, one in optical section, lowermost showing the occasional hooked

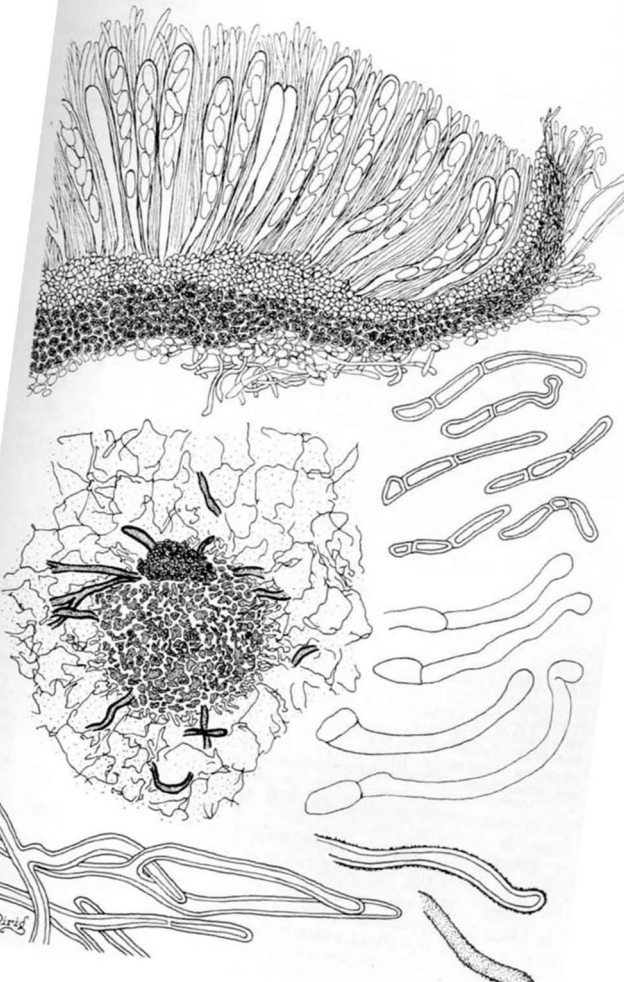


warts, all mounted in lactic acid-cotton blue; apothecial cross section mounted in Melzer's Reagent. All from CUP 58106, apothecial section × 500, all other structures × 1000, drawn with the aid of a drawing tube.



† FIG. 2. *Eriopezia samuelsii.* Two asci mounted in lactic acid-cotton blue; four paraphyses in Melzer's Reagent; five free ascospores, lowermost showing gel sheath, in cotton blue; ascus apex showing J+ pore after 2% KOH pretreatment, in Melzer's Reagent; ascus apex in cotton blue showing gel sheaths around spores. All CUP 57031 (HOLOTYPE), × 1000, drawn with the aid of a drawing tube.

→ FIG. 3. *Eriopezia samuelsii.* Apothecial cross section and six marginal hairs in optical section, in lactic acid-cotton blue; four hairs from base of apothecium, mounted in KOH-phloxine; portions of subicular hyphae, at left in optical section and in cotton blue, at right in water mount in optical section and surface view showing granulation that disappears in cotton blue mounts; center left, view from below of stipe attachment point to apothecium, with brown-pigmented hyphae near the point of attachment. All CUP 57031 (HOLOTYPE), apothecial section and basal view × 500, hairs and subicular hyphae × 1000, drawn with the aid of a drawing tube.



Apothecia minuta, fusca, gregaria, breviter stipitata, in tege subiculari densa immersa, hymenio paene nigro. Cellulae excipulares ectales fuscae, parientes pilos breves, hyalinos, laeves et hyphas subiculares hyalinas, laeves vel asperulas, quae folii superficiem contingentes brunnescentes sunt. Asci 93-103 × 11.0-13.2 µm, ex uncis enati, 8-spori, poro in iodo caerulescente. Ascosporae hyalinae, 1-septatae, (13.9-) 14.6-19.0 × 4.1-4.8 µm, integumento gelatinoso <1.5 µm lato involutae. Paraphyses filiformi-clavatae, pauciseptatae, 1.5 µm latae, integumento gelatinoso involutae. Typus: CUP *57031*.

ETYMOLOGY: From the name of the collector of the holotype specimen.

ILLUSTRATIONS & EXSICCATI: None.

SPECIMENS EXAMINED: *G. J. Samuels*, on dead leaves of *Gahnia* sp., Auckland Prov., Waitemata Co., Waitakere Ranges, off Mountain Rd., Walker's Bush Track, New Zealand, 7.VIII. 1974 [CUP *57031* (HOLOTYPE), R.P.K. *4134* (ISOTYPE)]. *J. M. Dingley, G. J. Samuels & S. Haydon*, on leaves of *Gahnia* sp., Auckland Prov., Waitemata County, Waitakere Ranges, vic. Kitekite Stream, along Marguerite Track, New Zealand, 30.V. 1973 [CUP *57032* (PARATYPE); AUPD *31802*, G. J. Samuels *73-104*, R.P.K. *4153* (ISOPARATYPES)].

PARACHNOPEZIZA Korf, gen. nov.

Apothecia alba, mollia et delicatula, stipite minuto in substratum inserto praedita, hyphis paucis subicularibus circumdata, hymenio albo vel rubescente. Excipulum ex textura angulari hyalina parietibus aspectu vitri praedita consistens. Pili hyalini, crispati vel spirales. Ascosporae 3–multi-septatae, parallele fasciculatae. Typus: *Peziza miniopsis* Ellis.

ETYMOLOGY: From a superimposition of the Greek *para-*, similar to, plus the generic name *Arachnopeziza*.

NOTES: The new genus differs from *Arachnopeziza* Fuckel in having a distinct stalk inserted into the substrate rather than sessile apothecia borne upon a loose, subicular mat. The character is deemed of sufficient biological weight to assign the genera to different tribes.

1. PARACHNOPEZIZA AQUILINELLA (von Höhnel) Korf, comb. nov. FIG. 4

≡ *Lasiobelonium aquilinellum* von Höhnel, Denks. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl. 83: 32. 1907.

DIAGNOSIS: Apothecia tiny, 200-350 µm fide von Höhnel, pallid to dirty white, almost invisible among the hairs on the fern pinnae, short stipitate. A scanty subiculum, noted by von Höhnel, is present at the apothecial base. The type material is so scanty that I dared mount only one additional apothecium other than those on von Höhnel's slides, which are still in good condition. The ascus apex is very pointed and thus *Arachnopeziza*-like, with a pore blue in iodine fide von Höhnel. Ascospores are nonseptate when young, eventually 3-septate, often coiled, at maturity 50-55.5 × 2.6-3.7 µm (fide von Höhnel, 52-56 × 2.0-3.5 µm), and fide von Höhnel with the ascospores yellowish and the epiplasm "braunlich weinrot" in iodine. FIG. 4 shows the salient characters.

ILLUSTRATIONS & EXSICCATI: None.

SPECIMEN EXAMINED: *R. v. Wettstein & V. Schiffner*, Auf d. Unt. d. Bl. v. *Pterid. aquilina*, Monte Jaraguá, São Paulo, Brazil, V. 1901 [FH-v.H. *5335*, (HOLOTYPE).]

2. PARACHNOPEZIZA MINIOPSIS (Ellis) Korf, comb. nov. FIGS. 5, 6

≡ *Peziza miniopsis* Ellis, Bull. Torrey Bot. Club 8: 66. 1881.
≡ *Erinella miniopsis* (Ellis) Sacc., Syll. Fung. 8: 510. 1889.
≡ *Dasyscyphella miniopsis* (Ellis) Kanouse, Pap. Mich. Acad. Sci. 23: 151. 1938 ('1937').
≡ *Erioscypha miniopsis* (Ellis) Kirschstein, Ann. mycol. 36: 384. 1938.
≡ *Erinellina miniopsis* (Ellis) Seaver, N. Am. Cup-fungi (Inop.), p. 291. 1951.
≡ *Lasiobelonium miniopsis* (Ellis) Dennis, Persoonia 2: 185. 1962.

DIAGNOSIS: Apothecia small, mostly 0.4-0.8 mm diam, hymenium reddish when fresh, yellow to white in dried specimens, excipulum pure white, subicular hyphae when obvious also pure white. Asci (97-) 108-127 (-153) × (9.3-) 11.2-13.1 µm, the tiny pore blue (J+) in Melzer's Reagent. Ascospores (82-) 84-99 (-105) × (1.9-) 2.8-3.7 µm, often 15-septate, frequently with added septa to as many as 19-septate. Other

characters are illustrated in FIGS. 5 & 6.

ILLUSTRATIONS: None.

EXCLUDED ILLUSTRATIONS: Quimio, Nova Hedwigia 28: 525, pl. IIi. 1977 (as *Erinellina* [misidentification]).

EXSICCATI EXAMINED: Bartholomew, Fungi Columbiani *2428* (*Erinella*, on *Acer saccharinum*); Ellis, North American Fungi *563* (*Peziza*, on *Acer rubrum*); Korf & Gruff, Discomycetes Exsiccati *98* (*Parachnopeziza*); Reliquiae Farlowianae *115* (*Erinella*, on *Acer*).

NOTES: The report of this species from the Philippines (Quimio, 1977) is based on an obvious misidentification, as neither the description nor illustration of short, 3-septate ascospores have any relationship to Ellis's species. The species is not uncommon on bark, particularly of *Acer* and of *Vitis*, and perhaps also on other hosts, and is known thus far only from eastern North America. I have examined many collections in CUP, CUP-D, NY, and my personal herbarium.

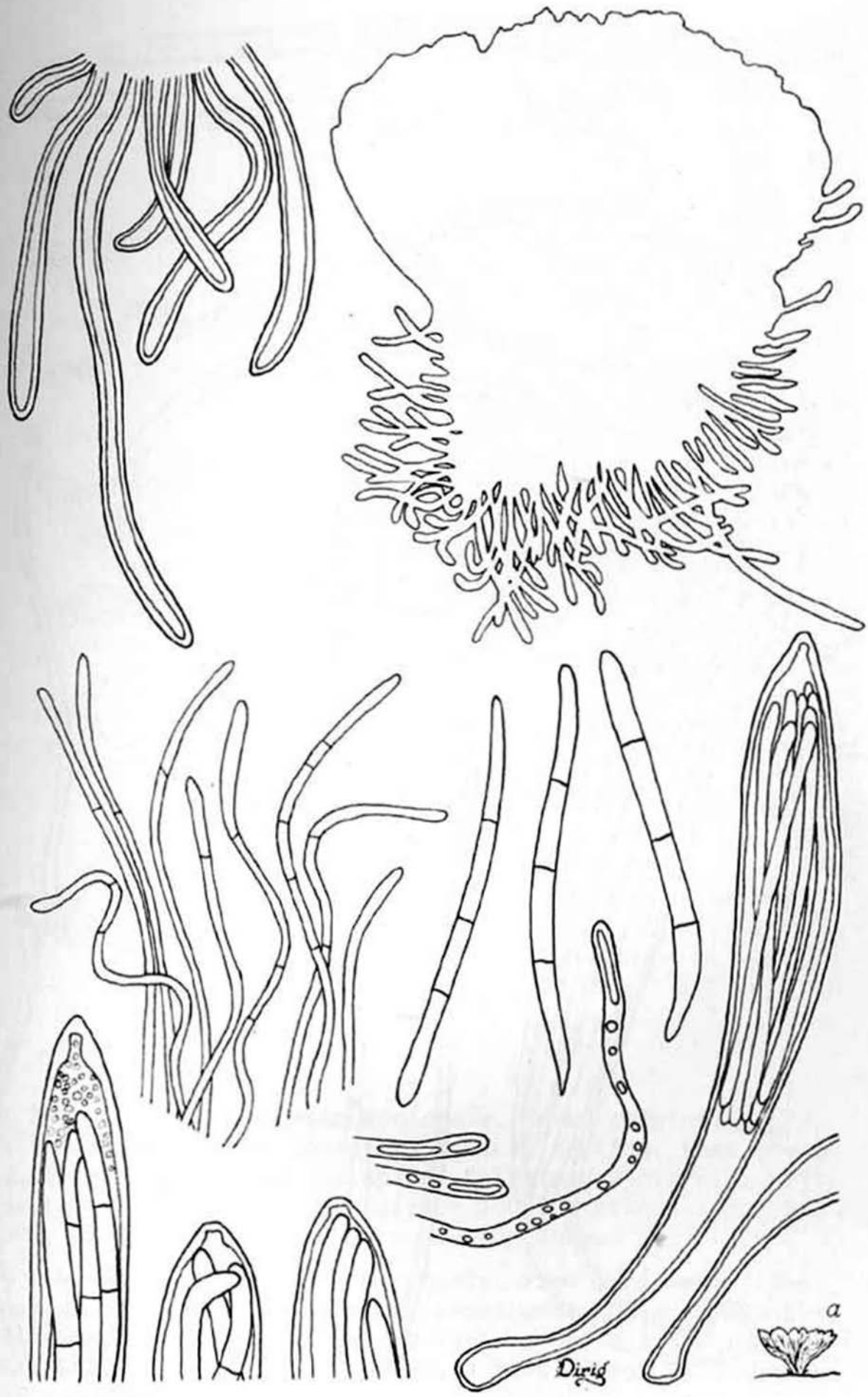
POLYDESMIA Boudier, Bull. Soc. Mycol. France 1: 113. 1885.

The diagnostic features of the genus are the tiny, very short-stipitate apothecia with a pruinose hymenium, pure to dirty white, often coalescent, with a glassy-walled excipulum bearing coiled or crisped, delicate hairs, with only occasional subicular hyphae noted. Ascospores are nonseptate in youth, but 1- to 3-septate at maturity, and paraphyses are propoloid, resulting in the pruinose hymenium easily visible under a hand lens when fresh or dry. The originally designated type species is *Helotium pruinosum* Jerd. *in* Berk. & Br.

1. POLYDESMIA DUMONTII (Korf) Korf, comb. nov. FIGS. 7, 8

≡ *Lasiobelonium dumontii* Korf, Trans. Mycol. Soc. Japan 17: 207. 1977 ('1976').

FIG. 4. *Parachnopeziza aquilinella*. Subicular hyphal ends in optical section, and outline of apothecium, mounted in water; nine paraphyses, three ascospores, three marginal hairs in optical section, three ascus apices, one ascus with ascospores, one ascus base, all in unknown mountant in permanent slide in FH-v.Höhnel collection. All FH-v.Höhnel *5335* (HOLOTYPE); apothecial outline × 500, all other structures × 1000 except *a*, a redrawing of von Höhnel's original sketch of an apothecium on his packet label, approx. × 76.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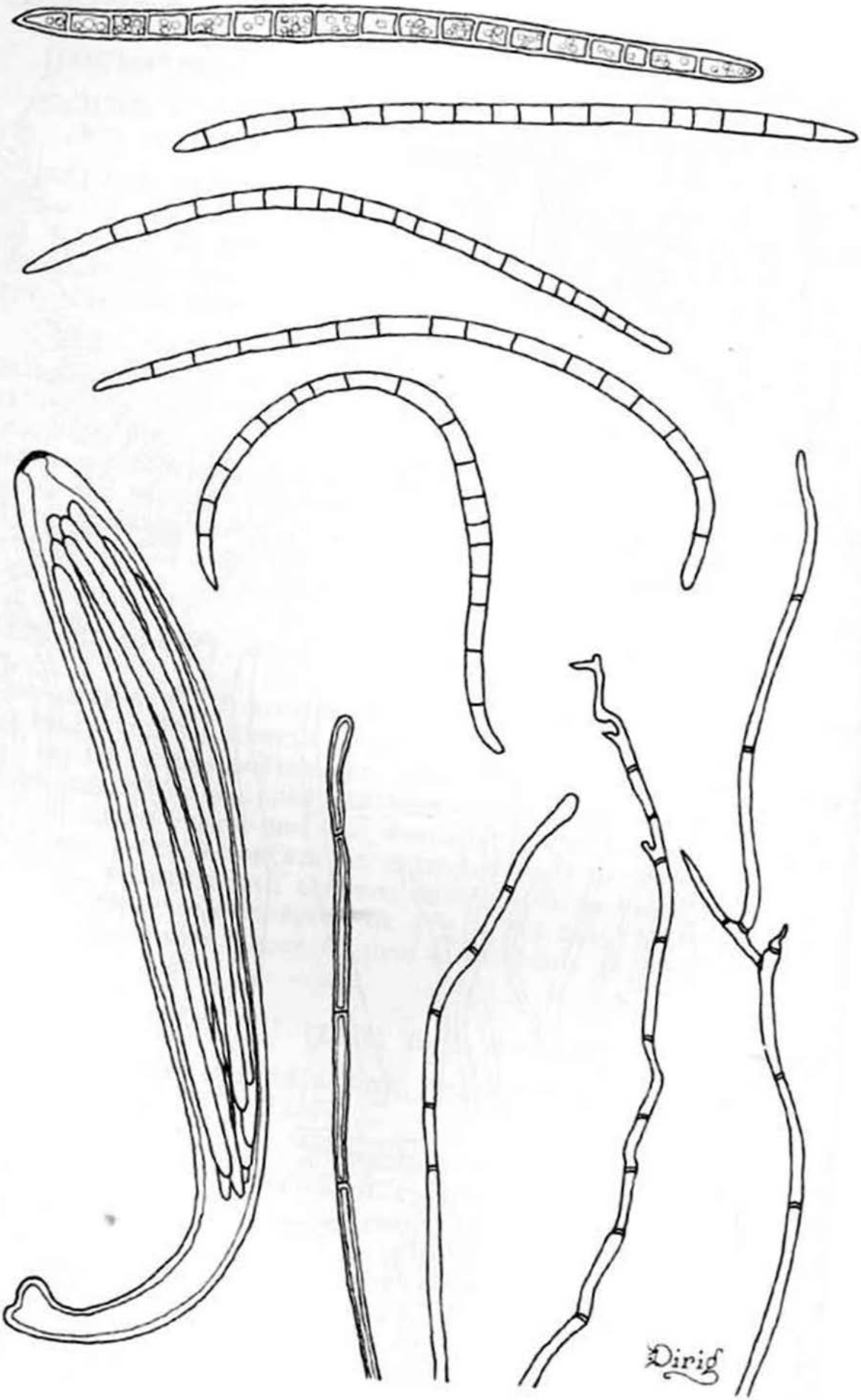
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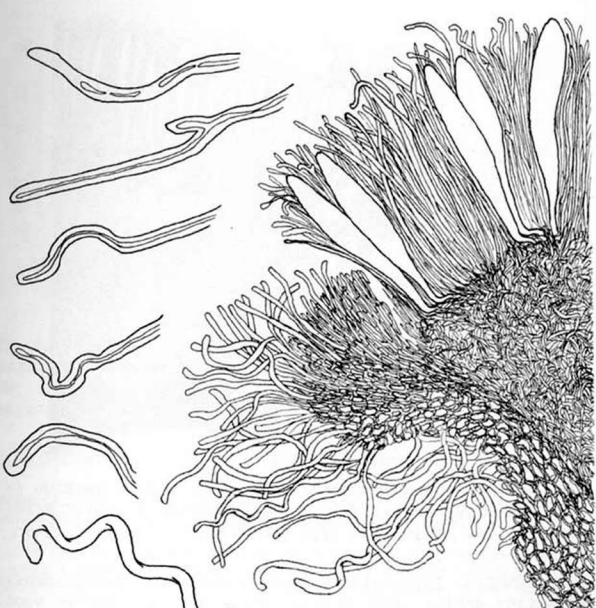


† FIG. 6. *Parachnopeziza miniopsis*. Seven marginal hairs, all but the next to lowest in optical section, that one in surface view showing the spiral twisting; apothecial cross section. All CUP 58107, hairs × 1000, apothecial section × 500, drawn with the aid of a drawing tube.

← FIG. 5. *Parachnopeziza miniopsis*. Five ascospores, the uppermost in optical section; ascus containing ascospores; four paraphyses, the furthest left in optical section. All CUP 58107, in Melzer's Reagent, × 1000, drawn with the aid of a drawing tube.

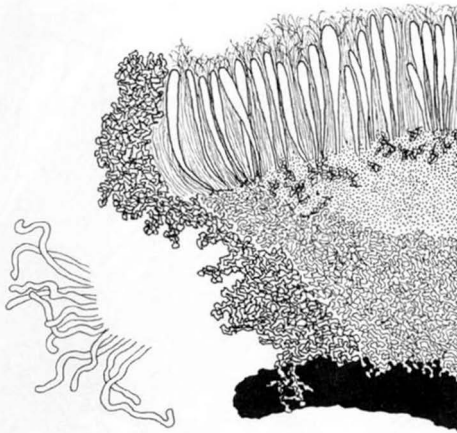


FIG. 7. *Polydesmia dumontii*. Apothecial median section (× 500) and marginal hairs (× 1000), mounted in lactic acid-cotton blue. All NY-VE 2951 (HOLOTYPE).

DIAGNOSIS: Apothecia separate, rarely confluent, sessile on a tiny stalk, <400 µm diam, excipulum pure white, woolly, hymenium pale gray when dry, pruinose (not so recorded by Korf, 1977). Hairs hyaline, coiled to crisped, 1.5 µm diam at base, <1.0 µm at apex, aseptate. Asci 4-spored, 45-56 × 7.2-8.5 µm, contents cinnamon in iodine, pore blue in iodine. Ascospores 1- to 3-septate, hyaline, subfusiform, more or less curved, 9.0-13.5 × 2.2-2.7 µm. Paraphyses hyaline, filiform, ca. 1.0 µm in diam, aseptate, apically deformed (propoloid).

ILLUSTRATIONS: Korf, Trans. Mycol. Soc. Japan 17: 207. 1977 ('1976').

EXSICCATI: None.

SPECIMEN EXAMINED: *K. P. Dumont, G. J. Samuels & L. Borjas*, on unidentified fern rachis, above fish hatchery at La Mucuy, 7 km east of Tabay, Parq. Bac. Sierra Nevada, Edo. Merida, Venezuela, 25. VII. 1971 [NY-VE *2951* (HOLOTYPE), CUP *54935* (ISOTYPE).

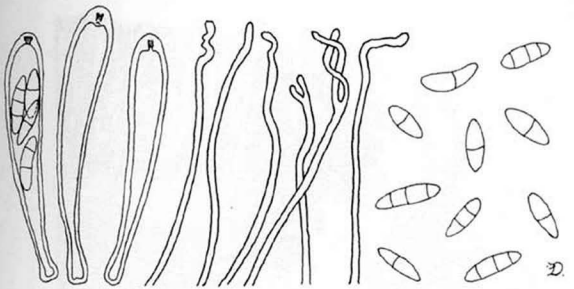


FIG. 8. *Polydesmia dumontii*. Three asci mounted in Melzer's Reagent ahowing J+ pore reaction, after pretreatment in 2% KOH; six paraphyses and ten ascospores mounted in Melzer's Reagent. A11 NY-VE 2951 (HOLOTYPE), × 1000.

2. POLYDESMIA FRUCTICOLA Korf, sp. nov. FIGS. 9-11

Apothecia minuta, alba, interdum coalescentia, stipite minuto praedita, hymenio pruinoso. Pili hyalini, crispati vel spirales. Asci (42.6-) 47.7-57.3 (-60.9) × (3.7-) 4.4-5.9 m, ex uncis enati, 8-spori (raro 4-spori), poro in iodo caerulescente. Ascosporae 1-septatae (vel raro 2–3- septatae in ascis 4-sporis), hyalinae, 5.9-11.0 (-13.2) × 1.5-2.2 µm (6.6-16.8 × 2.2-2.9 µm in ascis 4-sporis). Paraphyses propoloideae. Typus: CUP-MM *1504*.

CULTURAL CHARACTERS: Ascospores shot onto water agar germinated in less than 15 hrs at room temperature by 1 or 2 germ tubes. The fungus produces a humped, irregular, glistening colony (FIG. 11) somewhat faster growing than that of *Polydesmia pruinosa*. No conidial state has been observed by me. Transfers have been deposited with the American Type Culture Collection, Rockville, Maryland, and with the Centraalbureau voor Schimmelcultures, Baarn, of 1977 and 1978 isolations.

ILLUSTRATIONS & EXSICCATI: None.

HOLOTYPE SPECIMEN: *MADEIRA: R. P. Korf, R. Fogel, G. L. Hennebert & L. M. Kohn*, on peduncles and pods of mimosa (*Acacia* sp.), near fork in roads leading to São Roque do Faial and to Faial below Ribeiro Frio, 13. I. 1977 (CUP-MM *1504*)

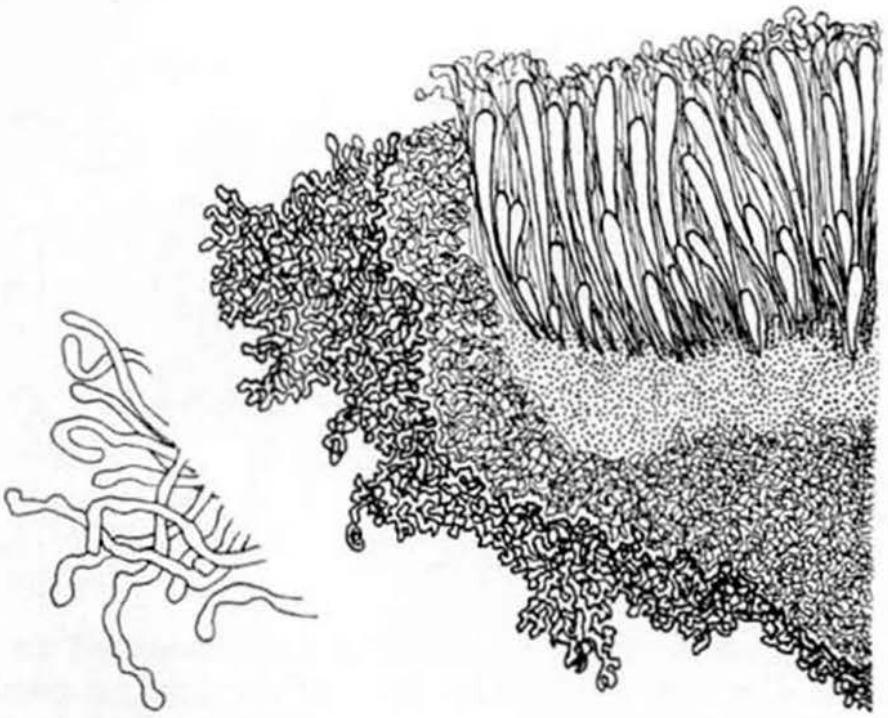


FIG. 9. *Polydesmia fructicola*. Apothecial median section (× 500) and marginal hairs (×1000), mounted in lactic acid-cotton blue. CUP-MM 1533 (PARATYPE).

(TFMC, ISOTYPE).

PARATYPE SPECIMENS EXAMINED: *CANARY ISLANDS, Tenerife: R. P. Korf, R. Fogel, G. L. Hennebert & L. M. Kohn,* on capsules of *Eucalyptus,* 4 km east of Bailadero, Punta de Anaga, 31. XII. 1976 (CUP-MM *1306*).

MADEIRA: Same collectors, on peduncles and pods of mimosa, 1 km above Vinháticos, toward Encumeada, 15. I. 1977 (CUP-MM *1533*). *Same collectors,* on pods of mimosa and fruits of *Eucalyptus,* 1.5 km above Monte, at km mark 5.5 toward Terreiro da Luta, 16. I. 1977 (CUP-MM *1551*). *Same data,* on wood of mimosa (CUP-MM *1556*). *Same collectors,* on fruit of *Eucalyptus,* at km mark 19.3 just outside of Santo da Serra, 19. I. 1977 (CUP-MM *1618*). *Same data,* on pods and peduncles of mimosa (CUP-MM *1619*). *R. P. Korf, L. M. Kohn, N. Korf & A. Y. Rossman,* on inner surface of bark of branchlet, 1.5 km north of Monte, 22. IV. 1978 (CUP-MM *2333*). *Same collectors,* on pods of mimosa and capsules of *Eucalyptus,* 4.1 km southeast of Portela toward Machico, 23. IV. 1978 (CUP-MM *2361*). *Same data,* on bark of *Eucalyptus* (CUP-MM *2362*). *Same collectors,* on capsule of *Eucalyptus,* public gardens ca. 6 km south of Santana, near junction with trail to Quemadas, 23. IV. 1978 (CUP-MM *2391*).

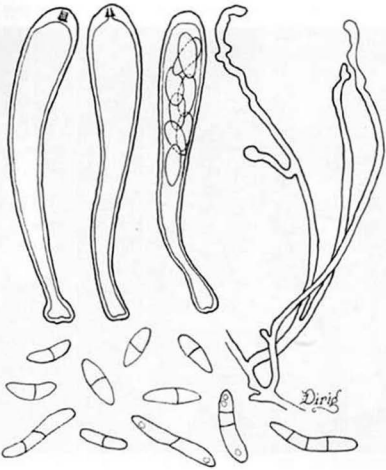


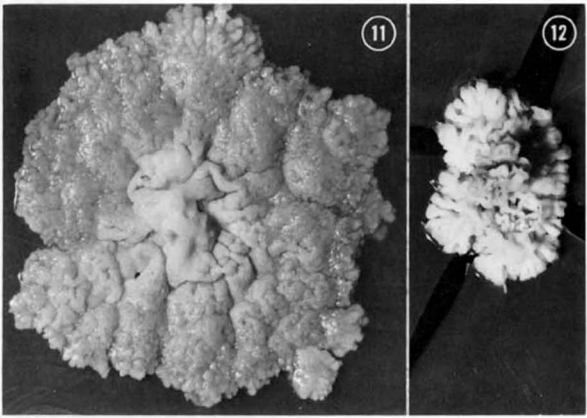
FIG. 10. *Polydesmia fructicola*. Three asci, the two at the left mounted in Melzer's Reagent showing the J+ pore reaction after pretreatment in 2% KOH, the right ascus with ascospores mounted in lactic acid-cotton blue; paraphyses mounted in Melzer's Reagent; six 1-septate ascospores from 8-spored asci and five ascospores (bottom row) showing the guttulate and multiseptate ascospores from rare 4-spored asci, all mounted in lactic acid-cotton blue. All × 1000, all CUP-MM 1504 (HOLOTYPE) except bottom row of ascospores from CUP-MM 2361 (PARATYPE).

3. POLYDESMIA PRUINOSA (Jerdon *in* Berk. & Br.) Boudier, Bull. Soc. Mycol. France 1: 113. 1885. FIGS. 12-14

≡ *Helotium pruinosum* Jerd. *in* Berk. & Br., Ann. Mag. Nat. Hist., ser. 3, 18: 127. 1866.

≡ *Pseudohelotium jerdonii* Sacc. (ut 'jerdoni'), Syll. Fung. 8: 296. 1889 [a name change, not *Ps. pruinosum* (Wallr.) Sacc. 1889].

≡ *Belonidium pruinosum* (Jerd. *in* Berk. & Br.) Rehm *in* Rabenh., Kryptogam.-Fl. Deutsch., Oesterr. Schweiz 1(3) [Lief. 35]: 510. 1891; [Lief. 36]: 562. 1891.



FIGS. 11-12. *Polydesmia* colonies grown on malt agar in petri dishes at room temperature, × 2. 11. *P. fructicola*, CUP-MM *1504*, isolated from the HOLOTYPE. 12. *P. pruinosa*, CUP-MM *1627*.

≡ *Belonium pruinosum* (Jerd. *in* Berk. & Br.) Höhn. *in* Rehm, Ann. mycol. 10: 536. 1912.

DIAGNOSIS: Apothecia tiny, rarely exceeding 500 µm, often confluent, white to dirty white, with a short stipe or nearly sessile, hymenium distinctly pruinose and exciple downy under a hand lens. Asci (78-) 80-110 × (8.0-) 8.8-10.2 (-11.0) µm, with the pore blue in Melzer's Reagent. Ascospores nonseptate at first, soon 3-septate, often slightly curved, shorter at the ascus apex, longer toward the base of the ascus, (13.9-) 14.6-20.5 (-22.0) × 3.7-5.1 µm. Paraphyses filiform but apically deformed and propoloid.

CULTURAL CHARACTERS: Brefeld (1891) reported a conidial state with fusoid to bent, 3- to 6-septate conidia borne successively on what today would be termed phialides. He noted the resemblance of the conidial state to that of *Nectria episphaeria* and its relatives that grow together with *Polydesmia pruinosa* on the same substrate. Ascospores shot onto

water agar germinated by 2 polar germ tubes in less than 15 hrs at room temperature in a Macaronesian collection. The colony is slow-growing, grossly humped and irregular (FIG. 12), but I have not seen any conidia of the sort illustrated by and discussed by Brefeld, and the cultural characters he reported are at great variance with my observations. A transfer of my Macaronesian isolate has been deposited with the American Type Culture Collection, Rockville, Maryland, and with the Centraalbureau voor Schimmelcultures, Baarn.

ILLUSTRATIONS: Berkeley & Broome, Ann. Mag. Nat. Hist., ser. 3, 18: pl. 5, f. 3 (spores). Boudier, Icones Mycol. 3 [livr. 23]: pl. 453, 1909. Brefeld, Unters. Gesammtgeb. Mykol. 10: pl. 12, f. 23-24, 1891. Dennis, Brit. Cup-fungi, fig. 9D, 1960. Dennis, Brit. Ascom., fig. 9D, 1968. Lindau, Engler & Prantl, Nat. Pflanzenfam. 1(1) [Lief. 130]: 214, f. 167 A-C, 1896. Rehm, Rabenh. Kryptogamen-Fl. 1(3) [Lief. 35]: 510, fig. 1-5 (supra), 1891.

EXSICCATI EXAMINED: Cooke, Fung. brit. exs. *575* (*Helotium*); Cooke, Fung. brit. exs. ed. 2, *390* (*Helotium*); Jaap, Fungi sel. exs. *309* (*Belonidium*, on *Diatrype stigma*); Jaap, Fungi sel. exs. *309b* (*Belonidium*, on *Diatrypella favacea*); Krieger, Fungi sax. *1034* (*Belonidium*, on *Melogramma spiniferum*); Krieger, Fungi sax. *2277* (*Belonidium*, on *Cryptosphaeria eunomia*); Phillips, Elvell. brit. *89* (*Helotium*); Rabenhorst, Fungi eur. *1514* (*Helotium*); Rehm, Ascom. *2004* (*Belonium*, on *Diatrype stigma*); Roumeguere, Fungi gall. exs. *2771* (*Helotium*, on *Diatrype* spp.); de Thümen, Mycoth. univers. *1210* (*Helotium*).

EXCLUDED EXSICCATI: Kryptogamae Exsiccatae *723*, issued as *Belonidium pruinosum* on *Diatrype stigma*, in all copies examined by me is instead a *Bisporella*, presumably *B. discedens* (Karst.) Carp., with a *Cystodendron* anamorph like that reported by Carpenter (1975).

CRITICAL SPECIMENS EXAMINED: This fungus is common and widespread in Britain and in continental Europe on many different pyrenomycetes. It appears to be previously unreported from North America, where my survey of herbaria has revealed only 11 North American collections deposited in CUP and NY (and none at BPI, FH, MICH or UC under any of the synonyms). According to Dr. John H. Haines of the New York State Museum *(pers. comm.)*, it may be common but rarely collected in the Pacific Northwest; he has sent me several collections from his personal herbarium from Washington, New York, and Tennessee. I report all these here, along with 6 Macaronesian collections also representing an extension of the known range.

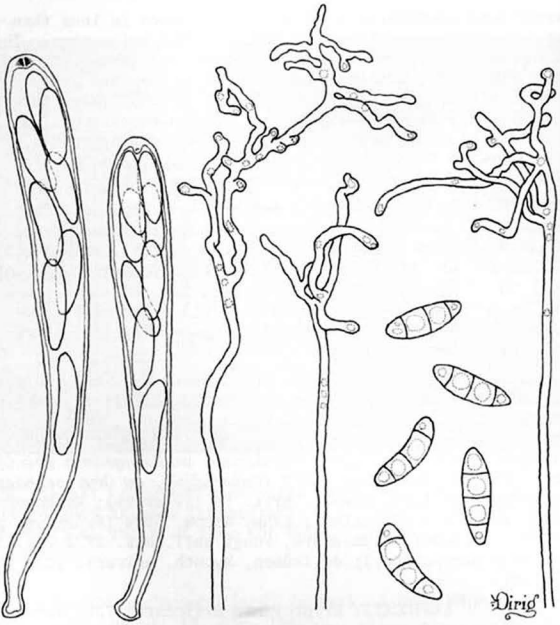


FIG. 13. *Polydesmia pruinosa*. Two asci with ascospores, the left mounted in Melzer's Reagent showing the J+ ascus pore after pretreatment with 2% KOH, the right mounted in KOH-phloxine-glycerine; paraphyses mounted in Melzer's Reagent; five free ascospores mounted in lactic acid-cotton blue. All × 1000, CUP-MM 1481.

I have never collected the species in Japan or in South East Asia, and no reports are known from the southern hemisphere. It is a cool climate or montane species. Many authors have failed to see the septa in ascospores, though these are evident in KOH-phloxine-glycerine or lactic acid-cotton blue mounts. The new extensions of reported range are:

NORTH AMERICA: *CANADA, British Columbia: R. J. Bandoni,* on old pyrenomycete on fallen *Acer macrophyllum,* 20. II.

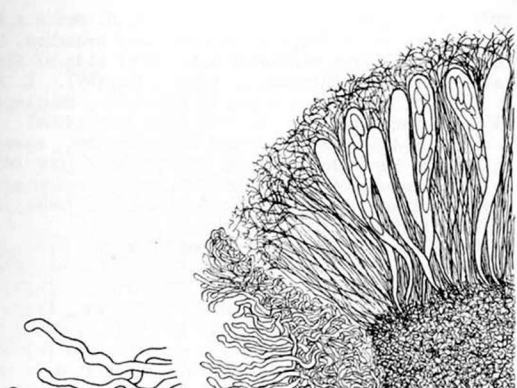


FIG. 14. *Polydesmia pruinosa*. Apothecial median section (× 500) and marginal hairs (× 1000), mounted in lactic acid-cotton blue. CUP-MM 1481.

1962, BC-*2316* (NY).

UNITED STATES, New York: R. P. Korf 3066, on a pyrenomycete, Stoddard Brook, Allegany State Park, 11. VI. 1961 (CUP *57033*). *C. T. Rogerson & S. J. Smith*, on stromata of *Hypoxylon* sp., Essex County, woods near Heart Lake, 2. IX. 1965 (NY). *Same collectors*, on stromata of *Hypoxylon*, Essex County, 2 miles northeast of Heart Lake, 3. IX. 1965 (NY). *C. T. Rogerson, S. J. Smith & D. Moore*, on stromata of *Hypoxylon* on *Salix*, St. Lawrence County, near Wanakena Forest School, 18. IX. 1969 (NY). *J. H. Haines 1441 & S. J. Smith*, on old stroma, Cascade Lakes, near Upper Jay, Essex County, 23. VII. 1970 (J.H.H.). *J. H. Haines 1600 & C. Marr*, Otsego County, NYSU Oneonta field station near Cooperstown, 28. IX.

1970 (NY; J.H.H.). *C. T. Rogerson, S. J. Smith & R. Fogel,* on stromata of *Diatrype stigma* and dead branches, Ulster County, trail from Winnisook Lake, west side of Slide Mountain, Catskill Mountains, 1. VIII. 1974 (NY). *L. M. Kohn & R. P. Korf,* on *Diatrype* and on *Hypoxylon,* Huntington Memorial Camp, Raquette Lake, 11. IX. 1976 (CUP *54956*). *C. T. Rogerson,* on *Apiosporina morbosa* on *Prunus* sp., near Berlin Mts. Club, Rensselaer County, 10. IX. 1977 (CUP *56994*).

Pennsylvania: M. Sherwood 2128, on *Hypoxylon* on *Fagus,* Tionesta tract, Allegheny National Forest, Forest County, 18. X. 1975 (CUP *54878*).

Tennessee: C. T. Rogerson, on *Diatrype stigma,* Sevier County, along Cole Branch, Little Pigeon River, Great Smoky Mts. National Park, 18. X. 1960 (NY; J.H.H. *1700*). *J. H. Haines 1724,* on old stroma of *Hypoxylon* sp., Cades Cove, Great Smoky Mts. National Park, 11. VIII. 1968 (J.H.H.).

Washington: J. H. Haines 38, on stroma of pyrenomycete, Redmond, King County, east of Lake Washington in wooded area, 6. III. 1964 (J.H.H.). *J. H. Haines 52,* on remains of pyrenomycete stroma, Lee Experimental Forest, Snohomish County, 26. IV. 1964 (J.H.H.). *J. H. Haines 238, same data,* 16. IV. 1966 (J.H.H.).

MACARONESIA: *CANARY ISLANDS, La Palma: R. P. Korf, W. C. Denison, L. M. Kohn & M. A. Sherwood,* on old xylariaceous stroma, Los Tilos, 14. I. 1976 (CUP-MM *639;* TFMC). *Same collectors,* on pyrenomycete, Forest road south of Los Tilos, 14. I. 1976 (CUP-MM *709*).

MADEIRA: R. P. Korf, R. Fogel, G. L. Hennebert & L. M. Kohn, on an immersed pyrenomycete on wood, mixed forest at Ribeiro Frio, 13. I. 1977 (CUP-MM *1481;* TFMC). *Same collectors,* on pyrenomycete on wood, waterfall along road to Fajã da Nogueira, 2.5 km from junction with main road, 19. I. 1977 (CUP-MM *1627*). *R. P. Korf, L. M. Kohn, N. Korf & A. Y. Rossman,* on pyrenomycete, at waterfall 2.3 km toward Fajã da Nogueira from main road, 21. IV. 1978 (CUP-MM *2277*). *Same collectors,* on pyrenomycetes, path to Balcões from Ribeiro Frio, 22. IV. 1978 (CUP-MM *2345*).

EXCLUDED SPECIES OF ERIOPEZIA AND POLYDESMIA

No attempt is made here to repeat the listing of species considered doubtful or excluded from *Eriopezia* in my earlier monograph (Korf, 1952), to which the reader is referred.

1. ERIOPEZIA MICROSPORA (Kanouse) Dennis, Kew Bull. 17: 323. 1963. FIG. 15

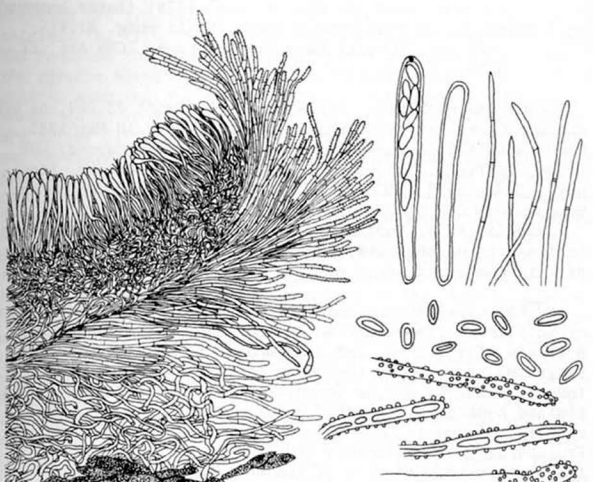


FIG. 15. *Lachnellula* sp. *(= Eriopezia microspora)*. Two asci mounted in Melzer's Reagent, the one at the left pretreated in 10% KOH showing J+ ascus pore; five paraphyses mounted in lactic acid-cotton blue; eleven ascospores mounted in Melzer's Reagent; five marginal hairs mounted in lactic acid-cotton blue or in KOH-phloxine-glycerine, two in surface view and three in optical section; apothecial median section, with host tissues (dark) at base. Apothecial section (× 500) and bottom hair (× 1000) from HOLOTYPE of *E. microspora;* all other structures × 1000, from PARATYPE of *E. microspora.*

≡ *Lachnella tricolor* (Sow. ex Pers. : Fr.) Phill. var. *microspora* Kanouse, Pap. Mich. Acad. Sci. 20: 73. 1935 ('1934').

≡ *Lachnella microspora* (Kanouse) Seaver, N. Am. Cup-fungi (Inop.) p. 267. 1951.

?=[*Peziza alboviridis* Cooke, Grevillea 7: 47. [xii] 1878, non *P. alboviridis* Sauter, Mitt. Ges. Salzburger Landesk.

18: 108. [earlier than 6. vii] 1878] (later homonym) ≡ *Trichopeziza alboviridis* Sacc., Syll. Fung. 8: 415. 1889 (ut '(Cooke) Sacc.') (new name, ICBN Art. 72, Note).

SPECIMENS EXAMINED: *Michigan: A. H. Smith 33-151*, on oak, Cascade Glen, near Ann Arbor, Washtenaw Co., 10 May 1933, MICH (HOLOTYPE of *Lachnella tricolor* var. *microspora;* CUP *57036*, ISOTYPE). *A. H. Smith 33-36*, George Reserve, Pinckney, 13 May 1933, MICH (PARATYPE of *Lachnella tricolor* var. *microspora;* CUP *57037*, ISOPARATYPE).

Georgia: H. W. Ravenel 2447, on decorticated *"Myrica"* or in fissures of the bark, Darien, K (HOLOTYPE of *Peziza alboviridis* Cooke and hence of *Trichopeziza alboviridis* Sacc.).

NOTES: The fragment of the type specimen of *Peziza alboviridis* Cooke received from Kew on loan bore only a few apothecia of a lichen, and I am unable to confirm Dennis's suggested synonymy on the basis of that material. Kanouse's fungus is surely not an *Eriopezia*, for it has strongly gelatinized hyphae in the outer ectal excipulum, and is very closely related to *Lachnellula pulveracea* (Alb. & Schw. *ex* Fr.) Dennis, though Dennis (1963) apparently failed to see the similarity. In view of the uncertainty concerning Cooke's (actually, Saccardo's!) epithet, and the inability to transfer Kanouse's varietal epithet because of the earlier *Lachnellula microspora* Ell. & Everh., I do not propose a name for it in *Lachnellula*. Possibly both *L. pulveracea* and this species deserve some genus of their own rather than being accommodated in the very broad concept of *Lachnellula* that both Dennis and I have adopted.

2. ERIOPEZIA ROSEOLO-TINCTA Svrček, Česká Myk. 12: 226. 1958.

= *Nectria carnea* Desmazières, Pl. crypt. France, sér. 2, fasc. 8, *373*. 1856; Bull. Soc. Bot. France 4: 998. 1857.

≡ [*Sphaerella carnea* Roberge, in herb.]

≡ *Nectriella carnea* (Desm.) Sacc., Michelia 1: 278. 1878.

NOTES: The ascocarps, immersed in a subiculum, are not apothecia, but Hypocreaceous perithecia. I was struck by the similarity with the description of *Nectriella carnea* in Saccardo (1883), and consulted Dr. C. T. Rogerson, New York Botanical Garden, as to whether this was indeed that species, recorded by Saccardo on *Luzula*, the host of Svrček's species.

Rogerson has graciously followed up the question, and has obtained the type specimen of *Nectria carnea* from Paris and has resolved the identity and also the question of whether the species should be assigned to *Pseudonectria* (the correct generic name for *Nectriella* in Saccardo's sense). He has permitted me to record his observations here. Though there are slight differences between Svrček's specimen on *Luzula* and Desmazières's specimen on *Carex*, Rogerson concludes they are synonyms. On both the label description and the journal description of *Nectria carnea* two hosts were given: *Carex* and *Buxus*. Rogerson notes that Tulasne & Tulasne (1865) studied Desmazières's material, treating that on *Carex* as *N. carnea* and that on *Buxus* as *N. rousseliana* ('russeliana'), thus effectively lectotypifying *N. carnea* with the *Carex* fungus. He formally designates here as LECTOTYPE of the name *N. carnea* Desm. the specimen on dead leaves of *Carex*, *"Roberge* in Desmazières, Pl. crypt. France ser. 2, fasc. 8, *373"* on deposit in PC. Rogerson notes that "Septation in ascospores is not absolutely clear. In one perithecium of *Eriopezia* [*roseolotincta*] that I mounted there appears to be a definite, median septum in some of the spores (mounted in heated acid fuchsin-lactic acid). The same is true in the Desmazières' material but here the ascospores are so tightly clumped that it is difficult to make a decision." Further, he notes that that *Nectria*, rather than *Pseudonectria* (= *Nectriella* Sacc.), is the appropriate genus in which to range these specimens.

SPECIMEN EXAMINED BY KORF AND ROGERSON: *J. Kubička & M. Svrček*, Slovakia septentr., montes Belanské Tatry, in convalle "Holubyho dolina" (="Dolina Siedmich prameňov") supra Tatranská Kotlina. *Luzula albida (= nemorosa)*. 3.8.1956. CUP *57039* (ISOTYPE of *Eriopezia roseolo-tincta* Svr.).

SPECIMEN EXAMINED BY ROGERSON: *Nectria carnea* Desmaz. Pl. Crypt. Ser. novis, fasc. VIII (1856), n. *373*, in fol. *Caricum* siccus, PC (LECTOTYPE).

3. POLYDESMIA HERBICOLA Svrček, Česká Myk. 21: 149. 1967.
FIGS. 16, 17

NOTES: This species cannot be accommodated in *Polydesmia*, but certainly is a member of the Hyaloscyphaceae. Our drawings (FIGS. 16, 17) are not in good agreement with those published by Svrček (1976: 148), who apparently did not see the strongly swollen bases of the hairs. It seems best accommodated in *Hyaloscypha*, and I formally propose its transfer there as Hyaloscypha herbicola (Svrček) Korf, *comb. nov.* The dark-walled excipular cells are unusual in *Hyaloscypha*,

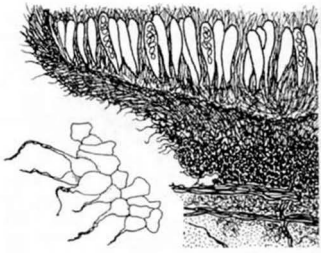


FIG. 16. *Hyaloscypha herbicola*. Apothecial median section mounted in lactic acid-cotton blue (× 500) and marginal hairs mounted in KOH-phloxine-glycerine (× 1000). All PRM 666708 (HOLOTYPE).

but I am not convinced how highly that character should be weighted. Recently Svrček has removed *Hyaloscypha dematicola* (Berk. & Br.) Nannf. from the genus on the basis of its brown-walled excipular cells, as the type species of a new genus, *Dematioscypha* Svr., which he still retains in the Hyaloscyphaceae. *Hyaloscypha herbicola* does not seem very close to *H. dematicola*, nor to Svrček's other new genus, *Ciliolarina*, erected in the same paper for a species placed in an uncertain position (Dermataceae? Hyaloscyphaceae?), also with brown-walled excipular cells and hairs.

SPECIMEN EXAMINED: *M. Svrček 630*, Slovakia, montes Belanské Tatry: in valle "Dolina Sedmi pramenů" supra Tatranská Kotlina. Ad caulem iac. *Senecionis nemorensi*. 26. VII. 1958. PRM *666708* (HOLOTYPE).

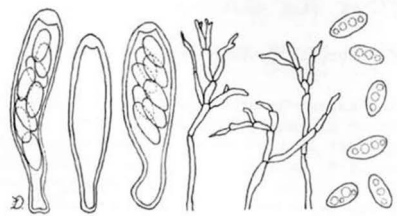


FIG. 17. *Hyaloscypha herbicola*. Three asci, two with ascospores, mounted in Melzer's Reagent; three paraphyses; six ascospores mounted in Melzer's Reagent. All × 1000, PRM 666708 (HOLOTYPE).

4. POLYDESMIA ROSAE Killermann, Krypt. Forsch. 2(3): 271. 1935. FIGS. 18, 19

NOTES: This is unquestionably a species of *Propolomyces* Sherw. [= *Propolis* (Fr.) Fr. non *Propolis* (Fr.) Corda] with immersed apothecia. The pruinose hymenium is doubtless what

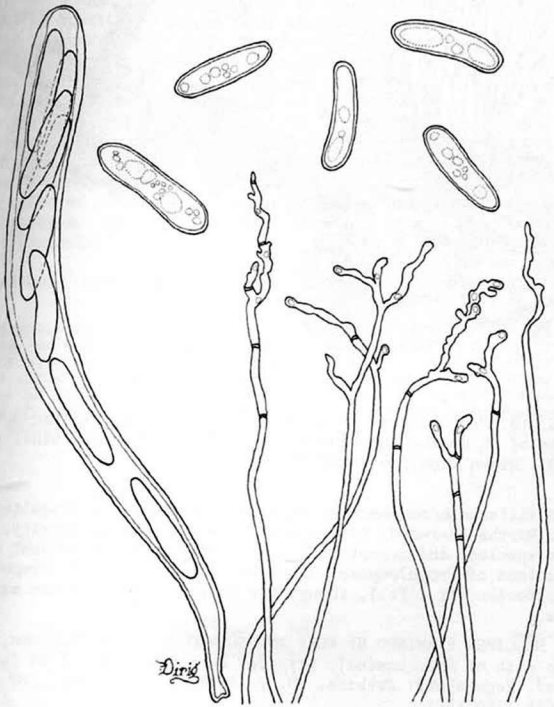


FIG. 18. *Propolomyces* sp. *(= Polydesmia rosae)*. Ascus containing ascospores, five loose ascospores, paraphysis apices, all × 1000, mounted in Melzer's Reagent. Drawn from the HOLOTYPE with the aid of a drawing tube.

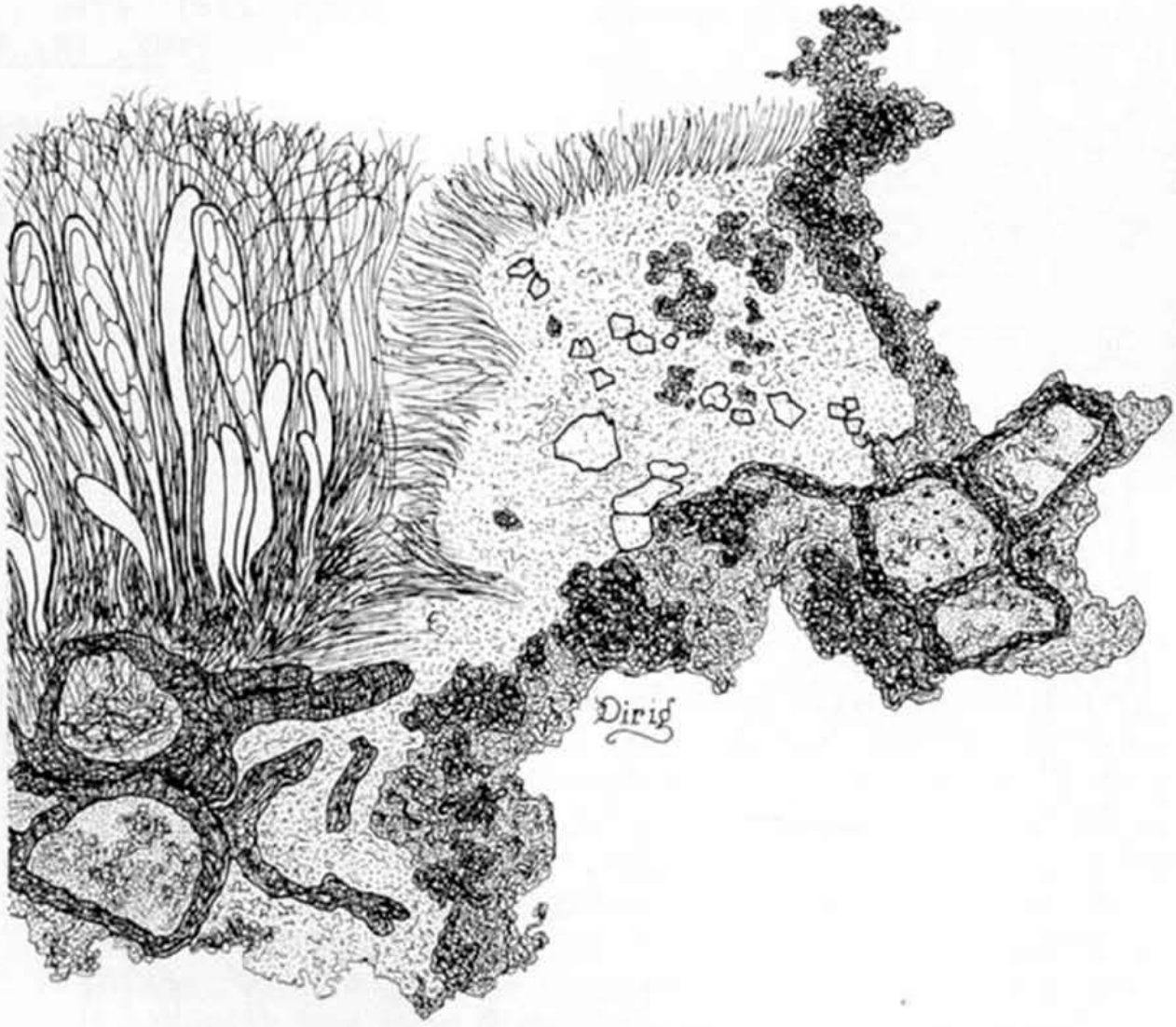


FIG. 19. *Propolomyces* sp. *(= Polydesmia rosae)*. Median section of an apothecium mounted in lactic acid-cotton blue, × 500. Drawn from the HOLOTYPE.

led Killermann to describe this in *Polydesmia*. I consulted Dr. Martha Sherwood, Farlow Herbarium, Harvard University, on the species, and accept her opinion that it may represent a specimen of *Propolomyces farinosus* (Pers.) Sherw. [= *Propolis versicolor* (Fr.) Fr.], though the spores seem a bit too narrow.

SPECIMEN EXAMINED BY KORF AND SHERWOOD: *S. Killermann*, [in pith of *Rosa canina*], Kryptog. Forschunger II, S 21 *Typus!*, Regensburg: Jrlbach, 10. V. 1934, M (HOLOTYPE), CUP 56048 (ISOTYPE).

APPENDIX

PEZICULA LINDA SP. NOV., A POLYDESMIA LOOK-ALIKE

One of our Macaronesian collections, on chips of wood, was at first taken for a species of *Polydesmia*, since it is nearly white, has a pruinose hymenium and scattered apothecia. Unlike species of *Polydesmia*, however, it is devoid of hairs and has very large asci, the pore of which is insensitive to Melzer's Reagent when apothecia are rehydrated in water, but with a strongly J+ pore mechanism when rehydrated in 2% KOH, as is now known to be typical of *Pezicula*, *Dermea*, and some other genera (Kohn & Korf, 1975). Most species of *Pezicula* are erumpent from bark in caespitose groups, unlike those of this Macaronesian collection. The apothecia of this apparently undescribed species, much larger than those of any species of *Polydesmia*, have a pruinose hymenium and propoloid paraphyses, characters already known in some other species of *Pezicula*.

PEZICULA LINDA Korf, sp. nov. FIGS. 20-22

Apothecia <500 µm diam, pallida, sessilia vel breviter stipitata, sparsa sed raro coalescentia, hymenio pruinoso. Excipulum ex cellulis globosis pallide brunneis consistens. Asci 8-spori, (85-) 95-102 (-117) × (15.4-) 16.8-19.8 µm, ex uncis enati, poro in iodo non nisi post tractatione priore cum KOH caerulescente. Ascosporae non septatae, hyalinae, ellipsoideae, (17.6-) 20.5-26.4 × 7.3-9.5 (-11.0) µm. Paraphyses anastomosantes, propoloideae. Typus: CUP-MM *264*.

ETYMOLOGY: From the Latin, *linda* = beautiful.

ILLUSTRATIONS & EXSICCATI: None.

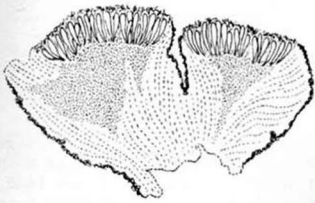


FIG. 20. *Pezicula linda*. Two apothecia in median section, × 50. CUP-MM 264 (HOLOTYPE).

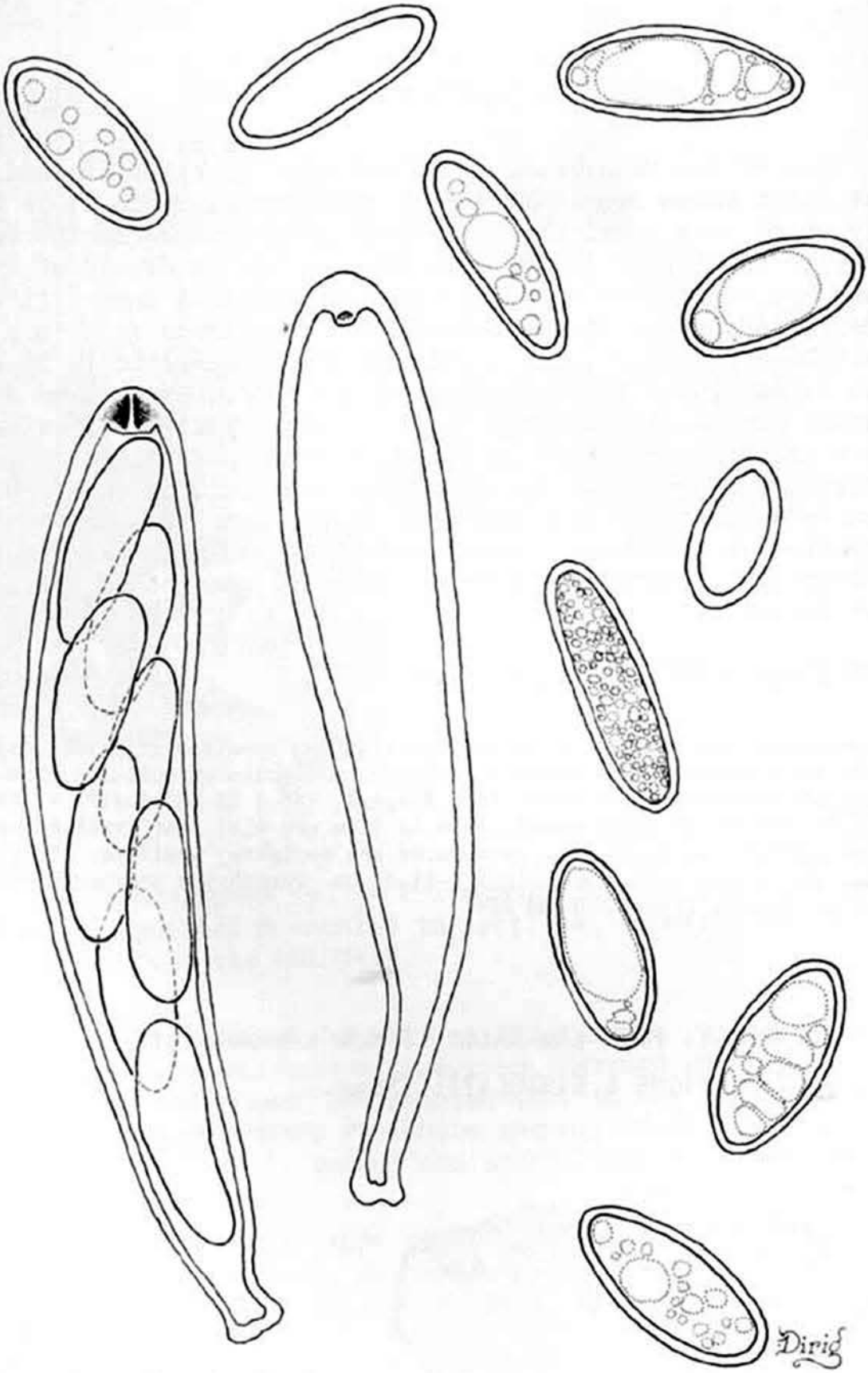


FIG. 21. *Pezicula linda*. Two asci mounted in Melzer's Reagent after 2% KOH pretreatment showing bluing of the apical mechanism; ten free ascospores in Melzer's Reagent. All × 1000, CUP-MM 264 (HOLOTYPE), drawn with the aid of a drawing tube.

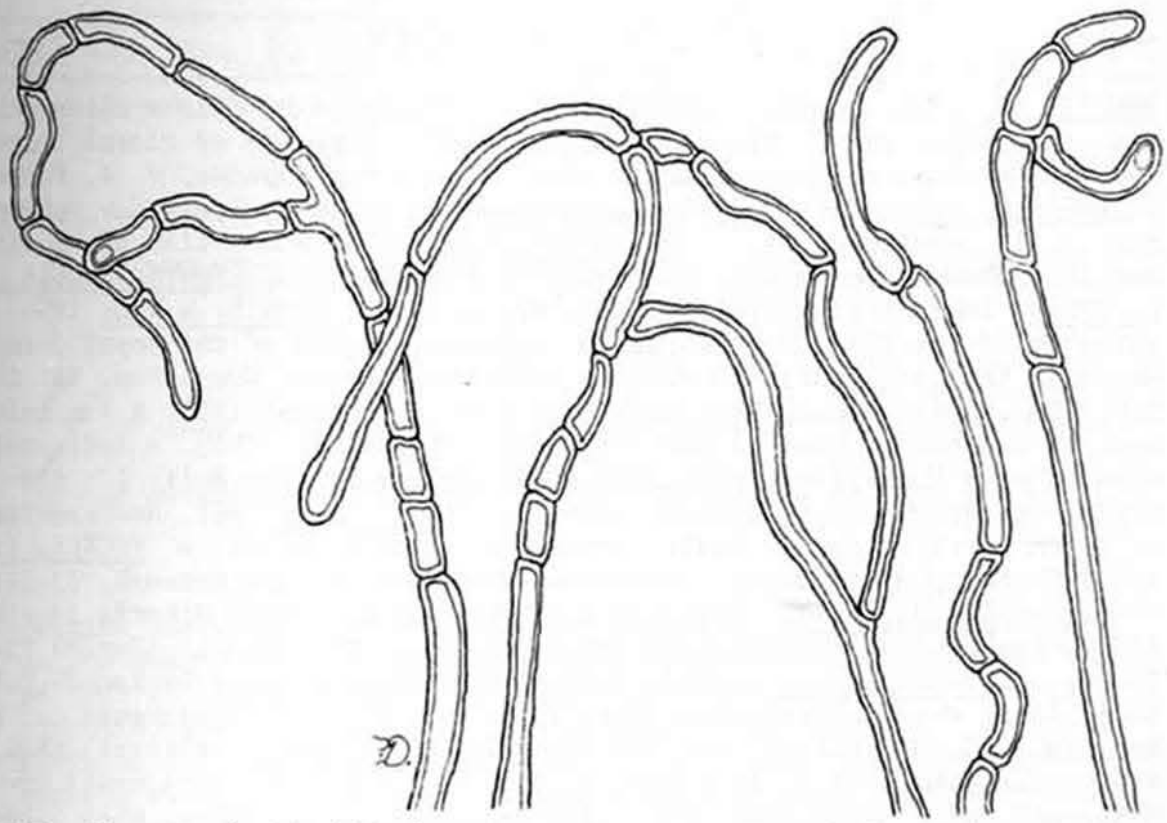


FIG. 22. *Pezicula linda*. Paraphyses mounted in Melzer's Reagent, × 1000. CUP-MM 264 (HOLOTYPE).

SPECIMEN EXAMINED: MACARONESIA: *CANARY ISLANDS, Tenerife: R. P. Korf, W. C. Denison, L. M. Kohn, M. A. Sherwood & E. Beltrán,* on cut wood, Fuente de las Pulgas, Las Yedras, Monte de las Mercedes, 7. I. 1976, CUP-MM *264* (HOLOTYPE), TFMC (ISOTYPE).

ACKNOWLEDGEMENTS

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NOMENCLATURAL NOTES. XI. ACCEPTABLE GENERIC TYPIFICATIONS BY CLEMENTS & SHEAR AND NON-TYPIFICATIONS BY SACCARDO

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SUMMARY

Despite claims that the generic typifications by Clements & Shear in *The Genera of Fungi* are arbitrary first-species choices and can be ignored, many of these are legitimate (and often earliest) typifications with significant nomenclatural implications. The assumption that Saccardo typified genera in *Conspectus generum Discomycetum* is challenged, and the mentions of species there are held not to be lectotypifications.

No single nomenclatural act is likely to have greater impact than lectotypification of previously untypified generic names. The act of almost irrevocably tying a generic name to one particular species (name) may thereby seriously affect the generic name that is correctly to be applied to other species, sometimes one or a few, sometimes scores or hundreds. This paper examines two of the sources commonly cited as places of first lectotypification of generic names of fungi in the hope that it will dispel some of the myths that have crept into the mycological literature.

I. CLEMENTS & SHEAR'S *THE GENERA OF FUNGI*

Few mycologists are unaware that Clements & Shear (1931) provided not only keys to the genera of fungi and lichens, but also a list of genera, both accepted and synonymous, that indicates a type species for each generic name. Many genera were previously described as new by Clements (1909) in the first edition of *The Genera of Fungi*, but in that publication type species were designated only for the new generic names. It is the untypified or retypified generic names in the second edition of *The Genera of Fungi* (Clements & Shear, 1931) that concern us here. They appear in the "List of Types and Synonyms" on pp. 233-413, and constitute over 1/3 of the text material.

There can be no doubt that these are explicit typifications. If one of these choices is the earliest for a particular generic name, it presumably stands, for "The author who first designates a lectotype ... must be followed ... [unless] it can be shown that the choice was based upon a misinterpretation of the protologue, or was made arbitrarily" (Art. 8,

International Code of Botanical Nomenclature).

Misinterpretation of the protologue is a failing that can befall any taxonomist; surely among the hundreds of generic names lectotypified by Clements & Shear some must be discarded on that basis. Each, however, is a case unto itself, and must be dealt with by a competent taxonomist/monographer.

Arbitrarily chosen lectotypes are to be avoided scrupulously, and if it can be shown that Clements & Shear arbitrarily designated lectotypes for the generic names they treated, their whole list of typifications can be thrown out and ignored. The major force of Art. 8's *arbitrary* provision is directed against the "first-species rule" of the "American Code of Nomenclature" that was the source of dissention for so many years amongst nomenclaturalists. Followers of the "American Code" held that when no species was designated the type of a generic name, the *first species listed was automatically* the type species of that name. The effect of Art. 8 is to allow taxonomists to ignore all such lectotypifications *when based on the first-species selection rule.*

Are the Clements & Shear generic name lectotypifications arbitrary choices, based on the first-species rule? Many mycologists ignore or simply do not mention the Clements & Shear typifications. At least one eminent mycologist recently voiced what may be a common view: in discussing the generic name *Cercosporella* Saccardo (1880), erected with two syntypic species, Deighton (1973: 3) stated:

> "Clements & Shear (1931: 391) cited *C. persica* as the type (i.e. the lectotype) and this has been repeated subsequently by several authors; but Clements & Shear did no more than follow the custom of taking the first-cited species as type without any further consideration."

Deighton, and presumably all others who chose to disregard the Clements & Shear lectotypifications (by discarding them under Art. 8), apparently have overlooked the five paragraphs headed "Generic Types" on pp. 14-15 of the Clements & Shear volume. The International Code of Botanical Nomenclature is discussed there at length, as is the necessity to select appropriate type species for generic names, and the necessity to avoid arbitrary systems of selection! In no manner of thinking can these designations be considered "first-cited species as type" examples.

Mycologists must, however, be cautious in accepting the Clements & Shear typifications. Many simply are not the *first* such designation, as required by Art. 8. In other cases, to obtain stability, Clements & Shear (1931: 15) went well *beyond* what is now permitted under the ICBN:

> "Since the application of a generic name depends upon the type species and many genera contain species that are not congeneric, it is desirable to select a type that will cause the least change. This is many cases necessitates the choice of a species not included by the original author of the genus."

An example of such an unacceptable typification is the indication of "*Belonium pineti* (Batsch) Rehm" as the type of *Belonium* Saccardo (1884); that generic name when erected had

but two mentioned species, the only ones eligible as lectotype, neither being *B. pinetti*.

II. SACCARDO'S *CONSPECTUS GENERUM DISCOMYCETUM*

An important treatment of Discomycetes by Saccardo (1884) was his *Conspectus generum Discomycetum hucusque cognitorum*, which set the stage for the sporological system of classification of Discomycetes adopted in the *Sylloge Fungorum* (Saccardo, 1889). The 1884 paper provided a hierarchal system of families, genera, subgenera, and infrasubgeneric taxa of unspecified rank (sections?). Most of these infrageneric taxa became generic names in the *Sylloge*. A significant feature of the paper is the listing of species names following each of the genera or infrageneric taxa. FIG. 1 reproduces a portion of this treatment.

Peziza Dill. ex. p. Ascomata stipitata v. sessilia, subcupulata, initio conniventi-clausa, subcarnosa, extus glabrescentia, saepe pruinosa v. subtuberculosa (non setosa); excipuli cellulis vesiculosis; sporidia sphaerica, ellipsoidea v. subfusoidea, levia v. aspera, hyalina.

Subg. Acetabula (Fuck.). Ascomata crasse stipitata basi stipiteque venoso-sulcata; sporidia saepius ellipsoidea. [P. Acetabulum Fr.].

„ Pustularia Fuck. ex p. (Tarzetta Cooke, Plectania Fuck. ex p.) Ascomata stipitata, extus pustulata, stipite saepius tenui, subinde radicato latente. Sporidia ellipsoidea. [P. Ciborium Vahl.].

„ Otidea Fr. Ascomata subsessilia subverticaliter dimidiata v. incisa. Sporidia ellipsoidea. [P. ontica Pers.].

„ Discina Fr. Ascomata subsessilia mox applanata, subundulata, subimmarginata.

a. Eu-Discina. Sporidia ellipsoidea. [P. repanda Vahl.].

b. Discaria Sacc. Sporidia globosa. [P. lejocarpa Curr.]

„ Plectania Fuck. ex. p. (Rhizopodella Cooke). Ascomata breve stipitata, cupulata, fusca, basi radicanti nigro-strigosa. Sporidia ellipsoidea. [P. melastoma Sow.]

„ Aleuria Fr., Fuck. (Cochlearia C., Plicaria Fuck e. p. Pustularia C. et Fuck. e. p.) Ascomata subsessilia cupulato-cochleata, demum subinde expansa.

a. Eu-Aleuria. Ascomata majora concava; sporidia ellipsoidea v. oblonga. [P. aurantia Oed.].

b. Plicaria Fuck. p. p. Ascomata majora concava; sporidia sphaerica. [P. fulgens Pers.].

FIG. 1. A portion of Saccardo's (1884) treatment of *Peziza*.

What do the species names in square brackets, *Peziza Acetabulum, P. Ciborium, P. onotica,* etc., stand for in this particular case? They are not "first-species" taken from other authors' works, nor previously designated types. They are clearly *selected* species names intended to convey a taxonomic "standard" for the listed taxa. It would greatly simplify many of the questions on types of generic names in Discomycetes to treat these as lectotypifications. They would be among the earliest known lectotypifications in fungi; moreover, these names have immense weight since the whole Saccardo system for Discomycetes in the *Sylloge* has its roots in this paper.

A number of mycologists have assumed these were type designations. For example, Rifai (1968: 109) held that Saccardo had "effectively typified" *Humaria* Fuckel (1870) with *Lachnea scutellata* by listing that species under *Lachnea* subg. *Humaria* [sect.?] a. *Eu-Humaria* (FIG. 2). Rifai was aware that

Lachnea Fr. Ascomata subcupulata, initio conniventi-clausa, carnosa, extus setosa v. pilosa; excipuli cellulis subvesiculosis. Sporidia sphaerica, ellipsoidea v. subfusoidea, levia v. aspera, hyalina. — Est mihi quasi Peziza pilosa.

Subg. Sarcoscypha Fr. (Scypharia Quel. p. p., Pseudoplectania Fuck. p. p., et Macropodia Fuck.) Ascomata stipitata, majuscula, extus pilosa.

a. Pseudoplectania Fuck. p. p. Sporidia globosa. [L. nigrella Pers.].

b. Macropodia Fuck. Sporidia ovoidea v. ellipsoidea. [L. macropus Pers.].

„ Humaria Fuck. ex maj. p. [Ciliaria Quél, Scutellaria, Sepultaria et Neottiella Cooke.] Ascomata minuscula sessilia, extus v. saltim margine pilosa; pilis fuscis rarius albidis (in Neottiella Cooke, Pyronemella Sacc.)

a. Eu-Humaria. Sporidia ellipsoidea v. oblonga. [L. scutellata L.].

b. Sphaerospora Sacc. Sporidia sphaerica. [L. trechispora Curr.].

FIG. 2. Saccardo's (1884) treatment of *Lachnea*.

in several instances Saccardo listed not *one*, but two or even more species names following the taxa (two examples are *Phaeopezia* subg. *Plicariella* and subg. *Geoscyphula*, FIG. 3). He was also aware that a careful reading of the *Conspectus* reveals no use of the term *type*, nor any indication there of what the listing of species might mean.

In an attempt to understand the implications of Saccardo's appended species names, I have consulted other papers by Saccardo. Two point to the apparent solution: Saccardo's (1875) *Conspectus generum Pyrenomycetum Italicorum* and Saccardo's (1880) *Conspectus generum fungorum Italiae inferiorum*, two other pre-*Sylloge* treatments. There, just as in the later

Phaeopezia Sacc. Ascomata carnosa v. subceracea, sessilia cupulata v. scutellata (fuscescentia). Sporidia continua globosa, elliptica v. oblonga, fusca.

Subg. Crouaniella. Ascomata scutellata minuta. Sporidia sphaerica. [P. murina (Fuck.) Sacc.].

„ Aleurina. Ascomata subcupulata majuscula. Sporidia ellipsoidea. [P. retiderma (C.) Sacc.].

„ Plicariella. Ascomata subcupulata, majuscula. Sporidia globosa. [P. radula (B. ef Br.) Sacc., P. atrospora (Fuck.) Sacc., P. scabrosa (Cooke) Sacc.].

„ Geoscyphula. Ascomata scutellato-applanata, mediocria. Sporidia ellipsoideo-oblonga, apiculata v. mutica. [P. apiculata (Cooke) Sacc., P. applanata (Rabenh. et Gonn.) Sacc.].

FIG. 3. Saccardo's (1884) treatment of *Phaeopezia*.

Conspectus generum Discomycetum, each generic or infrageneric name is followed by one – or sometimes by more than one – species name. The difference is that in the 1875 and 1880 papers these species indications are preceded by "Exempla," "Exempl.", or "Ex." (FIGS. 4, 5). These then, are *examples*, and not *types*.

1. Podosphaera *Kze., Lév.* Appendices perithecii paucae, apice pluries refracto-dichotomae.
   Exempla: *P. Kunzei* Lév., *P. clandestina* (Fr.) Lév.
2. Sphaerotheca *Lév.* Appendices perithecii numerosae, simplices, hyphoideae.
   Ex. S. *pannosa* (Schlechtd.) Lév., *S. Castagnei* Lév.

FIG. 4. Saccardo's (1875) treatment of *Podosphaera* and *Sphaerotheca*.

In regard to Saccardo's 1884 paper, Rifai (1968: 109) wrote:

> "It is true that Saccardo did not explicitly state that the 'example' cited for each taxon in the scheme of classification proposed by him was a type species, but it is very difficult to escape from the conclusion that the listing of this example species was to indicate what in his opinion was the most typical representative of the taxon concerned."

2. **Phoma** Fr. em. Perithecia levia, erostria, subcutanea; basidia monospora, sæpe brevissima. (Spermog. *Diaporthes, Pleosporæ, Leptosphæriæ* &c.). — Exempl. *Phoma denigrata* Desm. *Ph. herbarum* West.
   * **Sporonema** (Desm.). Perithecia subhysteroidea, v. sub-phacidiacea; basidia longiuscula, monospora. — Ex. *Ph.* (Sp.) *glandicola* (Desm.) Lév.
3. **Aposphæria** Berk. Perithecia Phomæ, sed superficialia, exquisitius papillata. (Spermog. *Melanommatis, Cucurbitariæ* &c.). — Ex. *A.* (Phoma) *Fulviscula* S.

FIG. 5. Saccardo's (1880) treatment of *Phoma*, *Phoma* [subg.] *Sporonema*, and *Aposphaeria*.

I thoroughly agree with Rifai's conclusion, but "typical," "representative," or "example" simply *do not qualify* under the Code as lectotypification!

To bolster his opinion, Rifai noted that:

> "Korf (1953) and Dennis (1956), for example, have treated the example species listed [by Saccardo] for *Velutaria* Fuckel and *Calycella* (Fr.) Boud. as effective typifications, respectively."

In defence, let me point out that I certainly did not base my argument on the 1884 paper alone. The genus originally contained two species, *Velutaria griseo-vitellina* and *V. rufo-olivacea*, neither designated the type by Fuckel (1870). In the 1884 paper Saccardo mentioned only the one *(V. griseo-vitellina)*. I wrote (Korf, 1953) that:

> "Saccardo was apparently the *first to divide the genus*[1]. In 1884 he emended the genus, designating *V. griseo-vitellina* the type. He followed this in 1889 by leaving *V. griseo-vitellina* in the genus (adding two further species), and relegated *V. rufo-olivacea* to the genus *Lachnella* 'Fries.' He unquestionably selected a lectotype *by this division*[1]."

No longer would I contend that he designated the type in 1884, but rather that he designated the type in 1889, at the time the two eligible syntypes were separated *in a single paper* under different generic names. This was one of the classic cases we had in mind when we proposed the concept of *implicit typification* (Korf & Rogers, 1967) that has now become accepted as a part of the ICBN. Our correspondence with Rifai over this very issue had helped crystallize that concept.

Dennis (1956: 66) also, it is true, wrote that Saccardo had "designated" a type species, for *Calycella*, in 1884.

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[1]. Italics added here.

When Korf & Carpenter (1974) revised *Calycella* they did not accept Saccardo's (1884) mere listing as typification of the name.

Eckblad (1968) is another author who has erroneously accepted at least some of Saccardo's listings as typifications. In treating *Saccobolus*, for example, Eckblad (1968: 31) unequivocally stated: "Saccardo (1884) also had selected the same [species] as the type."

Nevertheless, at least one of Saccardo's listings in the *Conspectus generum Discomycetum* really does constitute lectotypification (implicit!) by virtue of this being the first place where *all* of the syntypes are treated and only one is retained under the generic or infrageneric taxon. That example is *Pseudoplectania* Fuckel (1870), originally erected with two syntypic species, *P. nigrella* (Pers.) Fuckel and *P. fulgens* (Pers.) Fuckel. Saccardo treated the first under *Lachnea* subg. *Sarcoscypha* [sect.?] a. *Pseudoplectania* Fuckel *pro parte* (FIG. 2), and the second under *Peziza* subg. *Aleuria* [sect.?] b. *Plicaria* Fuckel *pro parte* (FIC. 1). All (both) eligible syntypes were treated in this one publication, and only one was left with its original generic name (now at infrageneric rank).

Thus, convenient as it would be, we cannot take the mere listings of species names in any of Saccardo's three *Conspecti* as lectotypifications in the absence of the words "type" or "typification." These undoubtedly represent "central" or "standard" species around which taxonomic concepts were built, but they do not stand scrutiny as nomenclatural building blocks. Except for one or a few cases of implicit lectotypification, we must look elsewhere for effective explicit typification of generic names for fungi.

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POLIICOLOUS ASCOMYCETES 2: CAPNODIUM SALICINUM MONTAGNE EMEND.

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ABSTRACT

Capnodium salicinum Montagne is redescribed from type material. The species concept is discussed and a centrum type for Capnodium Montagne emend. is described.

The name Capnodium was used by Montagne (1849a) to designate a "nov. gen." taxon. The description mentioned a teliomorphosis characterized by a gelatinous-absorptive centrum, ovoid-claviform asci which became deliquescent, and dark muriform ascospores. The distribution was considered to be temperate, including Australia, North America and middle to southern France. A name based on sterile material, Fumago citri Turpin, was cited under "typus" and Capnodium salicinum Montagne was referred to as an allied species where the ascus and ascospores were first observed. "Typus" was enlarged to include mention of two additional nomen anamorphoses in a modified description published by Montagne (1849b) in an English publication; this citation was used by Berkeley and Desmazieres (1849) for Capnodium salicinum Montagne. A third description of the species was published by Montagne in 1856 as #915 in a Sylloge of Cryptogams.

Berkeley and Desmazieres (1849) enlarged Montagne's genus to 10 species. Asci and ascospores were mentioned in two of the species and in two others, spores were stated to be completely unknown. Saccardo (1882) recorded 35 names in the genus Capnodium in the first volume of Sylloge Fungorum; asci and ascospores were recorded in only four species. Fifty-four species were indexed under Capnodium in Saccardo's 12th volume (1897). The 1971 edition of Ainsworth and Bisby's Dictionary of the Fungi gives the estimated number of species as 25.

A major point of confusion in early descriptions was the nature of the ostiole. Montagne (1849a) attributed pycnidial characters to the ascocarp, according to Tulasne and Tulasne (1863) and Arnaud (1911). The Tulasne brothers elaborated the description of C. salicinum and described

the ostiolar opening as slimy. They presented an illustration which gave the impression, however, that the ascocarp was astomatous by depicting the asci as coming from the ascocarp through cracks. They referred to the illustration as occurring during preparation of the microscope mount.

Saccardo (1882) gave a description of the asci of Capnodium as aparaphysate. Von Hoehnel (1906) mentioned a nucleus for species of his "Capnodieen" which, ". . .ist durch starke Verschleimung der Paraphysen knorpeligelatinos." He indicated that the asci are dispersed via a slit ascocarp peridium.

Barr (1976) following Henssen and Jahns (1974) used the term periphysoid to indicate the type of sterile element which is present in the centrum of Capnodium. The origin of periphysoids in C. salicinum is similar to that reported for Scorias (Reynolds, 1978). In S. spongiosa Fries, the periphysoids are flexible elongations of the cells lining the ascocarp cavity. The tips remain free. They initially extend laterally and then are reoriented during ascus discharge so as to extend upward into the ostiolar region. The periphysoids are not paraphyses in that the origin is not hymenial. They are not pseudoparaphyses sensu Luttrell (1955). The periphysoids in S. spongiosa and C. salicinum extend from the locule wall so as to somewaht surround the upper regions of the ascus. Periphysoids are also known to occur in ascocarps of other foliicolous fungi. I examined material of Limacinia (=Metacapnodium) juniperi which I collected from the type locality and determined that the sterile elements produced in the ascocarp are capnodiaceous periphysoids; Corlett (1970) illustrated and referred to these structures as pseudoparaphyses. I examined material of Limacinia fernandeziana Neger from the type locality and found capnodiaceous periphysoids. I also found these sterile elements in Florida collections of Treubiomyces pulcherrimus von Hoehnel; this observation was confirmed by Pohlad (1977). My examinations of neotropical collections indicated that the Capnodium type of periphysoid is also produced in ascocarps of Limacinula javanica (Zimmerman) von Hoehnel, L. musicola (Batista) Reynolds, and L. samoensis von Hoehnel.

Earlier, I (Reynolds, 1975) reported "periphyses" in the centrum of L. samoensis. After studying ascocarps produced in pure culture, I found that the maturing asci were separated by, ". . .interascal strands . . .," which originated, ". . .in the same manner as do paraphysoids (Luttrell, 1965), i.e. correspond to the compressed tissue of Pseudosphaeria centrum fide von Hoehnel . . ." I found that these tissue strands eventually disintegrated, and the hymenium occupied a single chamber within the ascocarp. I suggest that my earlier interpretation of the Limacinula ascocarp was biased by study of those produced in an artificial culture environment; more observations from

naturally occurring ascocarps would have shown the extensive periphysoids in species of this genus.

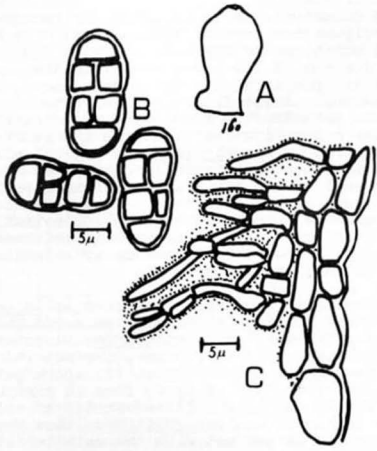
The bitunicate ascus is generally recognizable by an apical configuration termed "nasse apicale" by M. Chadefaud and explained by Reynolds (1971). The separation of the endoascus of the ascus wall from the exoascus also confirms the presence of a bitunicate ascus, but is not often observed. Aside from a lighter blue intensity produced by the Kohn-Korf or KOH-iodine protocol (Kohn and Korf, 1975) for a positive reaction, the 130 year-old material I examined of C. salicinum was typical of that I have observed in other, neotropical foliicolous Ascomycete species. The wall of the young ascus stains more intensely than does the more mature endoascus. I am convinced that only the exoascus is Kohn-Korf positive. Penetration of iodine through the thickened ascus wall is evidenced by the accumulation of iodine in cytoplasm of an ascus with immature spores, and in spores.

The anamorphic state is regarded as incertus because of lack of positive proof that an anamorphosis is present in the life cycle of C. salicinum. Acceptable criteria of positive proof of pleomorphism are (1) spore-to-spore cultivation in pure culture, (2) spore germination to produce a different type of spore form in pure culture, (3) use of a chronologically obtained series of collections from a single locale to analyze fruit body development. None of these criteria was met with the material at hand.

Positive proof of alternate reproductive modes of the holomorphosis has been the focus of taxon definition only in contemporary work. By contrast, the genus Capnodium was conceived in 1849 from a teliomorphosis and anamorphoses which had no demonstrated life cycle relationships. Prime taxonomic significance in this historical taxon was given to general appearance of the fungi comprising the leaf surface colony. Arnoud (1911) wrote of Capnodium that the habitat, ". . .has no systematic value in most cases. It generally depends on the condition of the environment. The result was the formation of a heterogenous group."

The original grouping together of discordant elements was perpetuated by other 19th-century mycologists including Berkeley and Desmazieres (1849), Saccardo (1882, 1892), and Ellis and Everhart (1890). The name of the genus and its type species have been variously applied, but with a distinct limitation to certain sooty mold fungi. Although the holomorphosis was based on a type consisting of discordant reproductive elements, the ascocarp is easily identifiable. I use discordant in a reproductive sense to indicate that the teliomorphosis has not been unquestionably proven to be associated holomorphically with any anamorphosis.

The name Capnodium stands, with C. salicinum Montagne emend. Reynolds as its type. Measurements were



Capnodium salicinum. Camera lucida drawing from type material. A. Sketch in Montagne packet of fruit body. B. Ascospores. C. View of laterally positioned periphysoids, originating from cells lining ascocarp locule, surrounded by gelatinoid wall material.

taken at maximum limits or width of ascocarp components. The asci were measured in length only due to width distortion inherent in slide making. The color of the ascospores was noted in mature spores before discharge while they were still in the ascus. Discharged ascospores are distinguishable as such only with extreme difficulty from among other components of the foliicolous habitat.

REDESCRIPTION

Capnodium Montagne emend.

=Capnodium Montagne. 1849. Ann. Sci. Nat. Ser. 3, 12:233-234. Pro parte, teliomorphosis only.
=Capnodium Montagne. 1849. Ann. Mag. Nat. Hist. London, Ser. 2, 3:520. Pro parte, teliomorphosis only.
=Capnodium Montagne section Eucapnodium Saccardo. 1882. Sylloge Fungorum 1:73. Pro parte, teliomorphosis only.
NON Fumago section Polychaeton Persoon. 1822. Mycologia europeae. Sectio prima. Erlangse 1:9.

Teliomorphosis- ascocarp subtended by stalk, ostiolate; periphysoids present lateral to apical on inner surface of locule wall; ascus bitunicate, nasse apicale present, staining blue in KOH-iodine; ascospores pigmented, muriform.

Anamorphosis- incertus.

Type- Capnodium salicinum Montagne emend. Reynolds

REDESCRIPTION

Capnodium salicinum Montagne emend. Reynolds

=Capnodium salicinum Montagne. 1849. Ann. Sci. Nat. Ser. 3, 12:233-234. Pro parte, teliomorphosis only.
=Capnodium salicinum Montagne. 1849. Ann. Sci. Nat. Hist. London, Ser. 2, 3:520. Pro parte, teliomorphosis only.
=Capnodium salicinum Montagne emend. Berkeley and Desmazieres. 1849. Jour. Royal Hort. Soc. London 4:251. Pro parte, teliomorphosis only.
=Capnodium salicinum Montagne. 1858. Syll. gen. spec. cryptog. etc. J. B. Bailliere, p. . Pro parte, teliomorphosis only.
=Capnodium salicinum Montagne emend. Saccardo. 1882. Sylloge Fungorum 1:73-74. Pro parte, teliomorphosis only.
=Apiosporium salicinum (Persoon) Kuntz. 1897. Die Natur. Pfl. 1(4):337. Pro parte, teliomorphosis only.
NON Fumago citri Turpin. 1833. Mem de Nosl. Veget. in in Mem. Ac. Sc. de Paris. sav. etr. 6:240.

Teliomorphosis- ascocarp subtended by stalk measuring 75-113 mμ x 75-163 mμ , ostiolate; portion surrounding hymenial locule ovate, measuring 100-125 mμ x 120-140 mμ comprised of textura angularis tissue, with component cells containing dark brown pigment in wall; periphysoids hyaline, branched, measuring 10-25 mμ x 2-3 mμ; hymenium basal, aparaphysate; asci up to 50 mμ in length, originating from cells of basal tissue mass, functionally bitunicate, nasse apicale present, KOH-iodine positive; ascospores 8 per ascus, walls containing dark brown pigment when mature in ascus; septation muriform, three cross septa, the middle septum slightly shorter in width than the other two, longitudinal septa several, measuring 17-20 mμ x 7-10 mμ.

Anamorphosis- incertus.

Type- Located in Paris (P); slide preparation kept in LAM.
Collector: M. Durieu
Location: Versailles, France.
On: "Salicinia" leaves

Material examined- Type (LAM200472); P (LAM200478).
Collector: M. Durieu.

Location: Sarision
On: "Salicinia capraeae" leaves.

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RECORDS OF PARASITIC FUNGI OF THE "THAXTERIOLAE" GROUP ON SUBCORTICAL MITES

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SUMMARY

Parasitic fungi of the group Thaxteriolae were located on mites collected from bark-beetle galleries in Louisiana. These fungi closely resemble a species described from Poland. A more detailed treatment of the American specimens requires, however, the study of more extensive material.

External fungal parasites are frequently found on mites (Acarina). Best known among these are fungi of the order Laboulbeniales (class Ascomycetes), where about 30 species have been described from mites. Other external parasites of mites were classified by Thaxter (1920) in the group "Thaxteriolae" (incertae sedis), characterized by a much simpler structure than that of Laboulbeniales. Thaxter (1920) mentioned the occurence of an undescribed species of the genus *Thaxteriola* on gamasid mites. The systematic investigation of the acarofauna in bark-beetle galleries, carried on for several years in Poland, allows the detection and identification of several species of these interesting fungi. Majewski and Wiśniewski (1978) described a new species, *Thaxteriola moseri*, and two species belonging in the new genus *Acariniola*, *A. basalipunctata* and *A. subbasalipunctata* (Fig. 1). Each of these fungi is characterized by an elongated fusiform thallus, small dimensions (length up to 54 µm, breath up to 8 µm). They are attached to the host by an almost black roundish foot situated in the lower part of the basal cell of the thallus. In the foot of *Thaxteriola moseri* there is a small round orifice (Fig. 1a), a penetration pore through which the fungus comes into contact with the host's body. In the species of *Acariniola*, the penetration pore does not lie within the foot, but separately and somewhat higher (Fig. 1b,c). The above-mentioned genera also differ by the number of cells in the thallus - two in *Acariniola* and three in *Thaxteriola*. The spores of fungi of the Thaxteriolae group are unicellular; they form within the upper cell and emerge through an opening in the top.

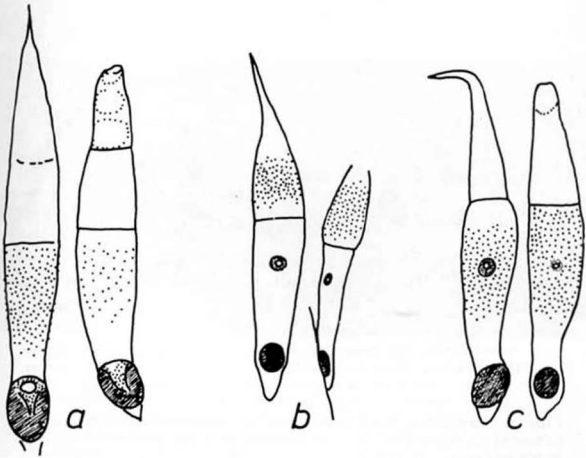

Fig. 1. Parasitic fungi from the Thaxteriolae-Group: a-*Thaxteriola moseri* Majewski et Wiśniewski, b - *Acariniola subbasalipunctata* Majewski et Wiśniewski, c - *A. basalipunctata* Majewski et Wisniewski (Majewski and Wiśniewski, 1978, fragment).

Fungi of the Thaxteriolae group on mites have not yet been studied in detail in North America. A series of slides received from Dr. John C. Moser from the USDA Southern Forest Experiment Station, Pineville (Louisiana) shows species collected from bark beetle galleries and ant nests. The material was collected near Elizabeth, Louisiana from a female of *Ameroseius longitrichus* Hirsch. on June 14, 1965 (slide No. 4,996), on a deutonymph (slide No. 10,999), and on a female of *Dendrolaelaps rotoni* Hurlb. on June 1, 1966 (slide No. 10,835) from galleries of *Dendroctonus frontalis* Zimm. Specimens were also recorded from a deutonymph of *Dendrolaelaps quadrisetosimilis* Hirsch. (slide No. 6,066), a female of *Lasioseius corticeus* Lindq. (slide No. 6,294), and a female of *Uroobovella americana* Hirsch. (slide No. 6,124) found in bark beetle galleries of *Ips avulsus* (Eichh.) on April 24, 1965 (Fig. 2). Several specimens of these fungi occured on one host. They resemble the Polish *Thaxteriola moseri* described by us, and young specimens with a colorless wall are identical with our specimens. The few (about 20) more mature fungi have a thallus almost completely covered with small verrucae and are light brown. They differ in these respects from typical *T. moseri* in which

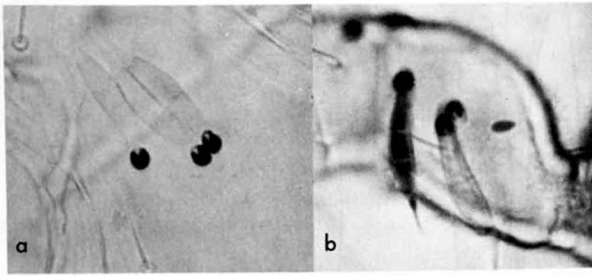

Fig. 2. Parasitic fungi from the Thaxteriolae-Group on mites gathered in Louisiana: a - on a deutonymph of *Dendrolaelaps quadrisetosimilis* Hirsch., b - on a female of *Uroobovella americana* Hirsch. (Photograph, A. Sokołowski).

only the basal cell is colored and verrucose. Their dimensions are frequently somewhat larger, 36-72 x 5-8 µm (*T. moseri:* 41-54 x 4.5-6 µm). Final determination of the American specimens requires studies of more extensive material; it is possible that they belong to a new species *Thaxteriola.* It is also possible after investigations on a wider scale, more new species of these fungi will be found. A more exhaustive treatment of the taxonomy and biology of the parasitic Thaxteriolae group can be undertaken only when these fungi attract the attention of a large number of acarologists and entomologists. We hope that our note will contribute in some extent to this.

Finally, we wish to thank the U.S. Department of Agriculture for a grant to encourage these investigations under contract FG-Po-292, and the sponsor, Dr. John C. Moser.

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NOTES ON THE GENUS *PANELLUS*

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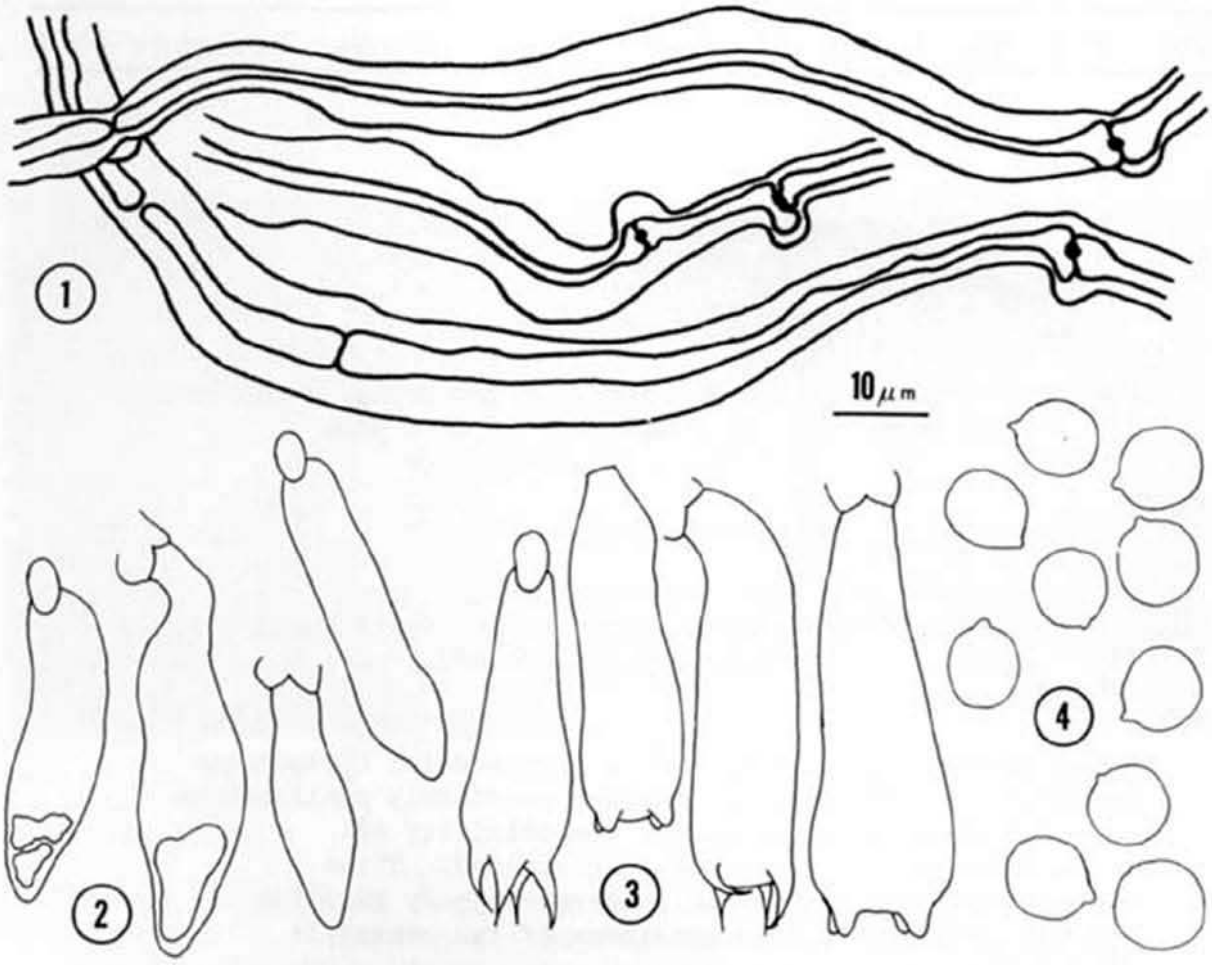
A new combination in *Panellus* is proposed for *Dictyopanus orientalis*. Erroneous information previously published on cultural characters and mating compatibility of *P. pusillus* and *P. stipticus* is corrected. Three *Dictyopanus* taxa are put in synonymy with *P. pusillus* and the location of type specimens of two others is discussed.

INTRODUCTION

Burdsall and Miller (1975) treated the genus *Panellus* Karst. and included two species formerly in *Dictyopanus* Pat. When that work was published the type specimens of several other species were not yet available for study. Some of these have since been located and deserve comment. In the same paper information was presented concerning single spore isolates and the mating compatibility between *P. stipticus* (Bull. per Fr.) Karst. and *P. pusillus* (Pers. per Lév.) Burds. et Miller. Some of that information was erroneous and is corrected below.

I. *Panellus orientalis* (Kobay.) Burds. et O.K. Miller, Jr., comb. nov.
≡ *Dictyopanus orientalis* Kobay., Bull. Nat. Sci. Mus. Tokyo 6:360. 1963. Figs. 1-4.

Basidiocarps gregarious; pileus 1-3.5 x 2-4.5 mm, broadly reniform to orbicular, convex to planate, with depression at stipe attachment, white (reddish-brown when dried) reviving when moistened, surface dry, smooth to pubescent, nonluminescent (Kobayasi 1963, p. 361). Hymenophore poroid, pores about 3 per mm, less than 1 mm long, nearly circular, edges entire, pale tan. Stipe lateral, up to 2 x 1 mm, dry, pubescent, concolorous with the pileus.



Figures 1-4.--Line drawings of microscopic structures of *P. orientalis*. 1. contextual hyphae. 2. cystidia. 3. basidia. 4. basidiospores.

Basidiospores (Fig. 4) globose to subglobose, 7-9.5 x 7-8.5 µm, smooth, thin-walled, apiculate, hyaline in H_2O and KOH, amyloid (walls blue) in Melzer's reagent; basidia (Fig. 3) broadly clavate to nearly cylindrical, 30-45 x 9-12 µm, hyaline, thin-walled, clamped at base, 4 sterigmate, sterigmata up to 6 µm long; pleurocystidia 28-40 x 6.5-9 (-12) µm nearly fusoid to cylindrical and tapered rather sharply to apex, hyaline, thin-walled, clamped at base, often with one or more large globular inclusions; dichohyphidia covering dissepiment much branched, hyaline, thin-walled, clamped, often acanthophysoid, also with flexuous cells up to 5 µm diam, thin-walled hyaline, with refractive content staining densely in 2% KOH-phloxine, more numerous here than in pileus cuticle.

Cuticle of pileus a loose *textura intricata*, hyphae 2-3.5 µm diam, hyaline, thin-walled, clamped, ends of hyphae differentiating into acanthophysoid-like cells, with scattered, densely staining hyphal end-cells up to 5 µm diam, thin-walled, hyaline, with refractive content; cuticle continues over margin and onto dissipiments; context of pileus up to 125 µm thick, a compact *textura intricata*; hyphae (Fig. 1) 5-10 µm diam, hyaline, thick-walled (walls up to 3.5 µm thick), not equally thickened throughout hypha, resulting in appearance of the lumen

wandering from one side of hypha to other, refractive, wall surface undulating or sometimes appearing eroded; pore trama like context; subhymenium only 2-3 cells thick, hyphae 2-3 µm diam, hyaline, thin-walled, clamped, smooth.

SPECIMEN EXAMINED: TNS-F-193006, Oosumi, Kagoshima Pref. Japan 17. IX. 1962. K. Aoshima 341. (HOLOTYPE-ex TNS)

REMARKS: The amyloid smooth spores, thick-walled refractive contextual hyphae and the structure of the cutis and lateral attachment of stipe support the placement of *P. orientalis* in the genus *Panellus*. According to Kobayasi (1963, p. 361) the basidiocarps are not luminescent, but since luminescence does not appear to be a constant characteristic in *Panellus* (Burdsall and Miller, 1975) that feature alone does not exclude it from the genus.

II. On single spore isolates and compatibility

Because of an error in labeling single spore isolates when mating compatibility was being investigated, *P. pusillus* was paired with *Pleurotus sapidus* (Schulzer) Kalchbr., not *Panellus stipticus* as reported (Burdsall and Miller, 1975). This error was recognized when the compatible intra-specific crosses fruited just prior to the appearance of the volume, which could no longer be corrected. The information on the mating studies, therefore, is not valid. The description of the single spore isolates of *P. stipticus* are, instead, descriptions of those of *Pleurotus sapidus*. Since discovering this error we have obtained new single spore isolates of *Panellus stipticus* and paired them with single spore isolates of *P. pusillus*. The pairings resulted in no clamp connection formation in any of the matings performed, indicating that the two species are distinct.

III. On some *Dictyopanus* species

Burdsall and Miller (1975) cited six *Dictyopanus* names for which type specimens were unavailable. *Dictyopanus orientalis* was one of these and is discussed above. The holotypes of three other names--*D. pusillus* var. *sublamellatus* Corner (1954, p. 259), *D. gloeocystidiatus* Corner (1954, p. 258) and *D. pusillus* var. *pseudorhipidium* Singer (1953, p. 14)--were studied and found to be specimens of *P. pusillus*. The holotypes of *D. luminescens* Corner (1954, p. 423) and *D. foliicolus* Kobay. (1963, p. 361) are apparently not extant. Corner (pers. comm.) was unable to locate the type of *D. luminescens* in his collection and indicated that it may be at SING but it is reportedly not on deposit there. According to Dr. Doi at TNS (pers. comm.), the type specimen of *D. foliicolus* is in none of the Japanese herbaria. He indicated the same to be true of most Philippine plant specimens collected during World War II. Two other names for which we could not find holotypes are *D. flabelliformis* Kobay. and *D. illuminans* Corner (Kobayasi 1951, p. 4).

ACKNOWLEDGMENTS

The herbaria which loaned (TNS) or searched (SING) for specimens are acknowledged with greatest appreciation. The information and specimens supplied by Drs. E.J.H. Corner and Y. Doi are gratefully acknowledged. Thanks are also offered Mr. Steven P. Bradbury for his technical assistance and Drs. J. Ammirati, M. J. Larsen, E. L. Stewart, and Mrs. F. F. Lombard who critically reviewed this manuscript.

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THREE NEW SPECIES OF PSILOCYBE FROM THE PACIFIC-NORTHWEST IN NORTH AMERICA

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The mycoflora of Northwestern United States and Southwestern Canada contains relatively few endemic species of Psilocybe: P. washingtonensis Smith (1946), P. angustispora Smith (1946), P. baeocystis Singer & Smith (1958), P.pelliculosa (Smith) Singer & Smith (1958), and P. stuntzii Guzmán & Ott (1976). Other species known from the area but not endemic to it are P. cyanescens Wakefield, P. semilanceata (Fr. ex Secr.) Kummer (Guzmán et al, 1976), and P. moelleri Guzmán (1978). It is interesting to note that of the 180 taxa recognized in the genus by Guzmán and Vergeer (1978), only 8 are known to occur in the Northwest, six of which stain blue and are presumably hallucinogenic, and that two do not stain blue and presumably are not hallucinogenic.

In the present paper we are describing three new species, one of which stains blue and presumably is hallucinogenic. Two do not stain blue.

We wish to express our thanks to G.P. Menser and D.T. Leslie for providing information on some of the collections described here. Thanks are also due to Dr. Roy Watling, Royal Botanic Garden Edinburgh, Scotland, for the loan of type material of Psilocybe fimetaria. Guzmán is pleased to aknowledge a grant from the Guggenheim Memorial Foundation for the study of Psilocybe which was awarded in 1971.

Psilocybe laticystis Guzmán & Smith, sp. nov.

Pl. 1, upper fig.

Pileus 10-35 mm latus, convexus demum campanulatus vel subumbonatus, laevis, glaber, udo striatus, subviscidus,

vinaceo-brunneus vel triste castaneus, hygrophanus, demum pallide griseo-brunneus. Lamellae late adnate, subdecurrentes, vinaceo-brunneus, demum obscurior. Stipes 20-45 (-60) x 1-3 (-4) mm, triste vinaceo-brunneus, deorsum subatratus, griseofibrillosus. Sporae in cumulis atrobrunneae, (5.5-) 6-6.6 (-7.7) x(-3.3) 3.8-4.4 um, ellipticae vel subovatae, truncate. Pleurocystidia 30-49 (-60) x 10-19 um. Specimen typicum in Herb. Univ. Mich. conservatum est; legit prope Grants Pass, Oregon, Nov. 10, 1956, Smith 55383 (isotype in ENCB).

Pileus 10-35 mm broad, convex becoming campanulate to subumbonate, expanding to nearly plane, smooth, striate by transparence on margein when moist, viscid to subviscid fresh, color dull vinaceous brown to dark chestnut or chocolate brown, hygrophanous, fading from the margin to the disc to a grayish tan. Context thin, fragile to pliant, taste mild, odor none.

Lamellae broadly adnate to subdecurrent, dull brown to "Rood's brown" (dark vinaceous brown), becoming chocolate brown, edges even and concolor.

Stipe 20-45 (-60) x 1-3 (-4) mm, central, equal or narrowed to the base, "Rood's brown" below and paler above, soon blackish brown from the base upward, with a grayish my celial pad at the base and surface covered overall by grayish fibrils. Veil not well developed, white-fibrillose and on the upper part of the stipe and on margin of pileus at first but all traces soon obliterated.

Spore print dark chocolate color. Spores (5.5-) 6-6.6 (-7.7) x (3.3-) 3.8-4.4 um, elliptic to subovoid both in face and profile view, smooth, thin-walled, with a broad apical pore, yellowish brown in KOH.

Basidia 18-25 x 5.6-7 um, 4-spored, hyaline, subcylindric with a median constriction. Pleurocystidia 30-49 (-60) x 10-19 um, abundant, hyaline, thin-walled, lageniform to obclavate, the neck moniliform or strangulate, 4-6 um wide at apex, some with a hyaline globule adhering near the apex or on it. Cheilocystidia 13-30 x 8-13 um, hyaline, subventricose or ventricose-mucronate.

Subhymenium formed by elongated hyphae 4-8 um diam., with a diffuse brownish orange pigment. Tramal hyphae parallel, hyaline to brownish with some incrustations of orange-brown pigment, thin to thick-walled, 6-17 um diam. Cuticle of pileus an ixocutis, the hyphae elongate, and hyaline. Hypodermium not distinct from the trama proper. Clamp connections present.

Habitat and distribution. Gregarious on sticks or logs of conifer wood. Known only from Oregon and Idaho in the United States.

Material studied. IDAHO: Upper Priest River, Oct. 16, 1964, Smith 71298 (MICH); Oct. 1, 1966, Smith 73814 (MICH); Oct. 27, 1969, Smith 73670 (MICH). OREGON: Grant Pass, Nov. 10, 1956, Smith 55383 (type, MICH; isotype, ENCB).

Discussion. This species is close to P. washingtonensis Smith, but differs in the cheilocystidia; P. washingtonensis has two types of cheilocystidia, the first type fusoid-ventricose with obtuse to subacute apices, 26-38 x 7-11 um and the second type broadly clavate to capitate, 18-26 x 10-12 um. For further comment see discussion of P. subborealis.

Psilocybe subborealis Guzmán & Smith sp. nov.

Pl. 1, lower fig.

Pileus 15-20 mm latus, convexus vel subumbonatus, laevis, substriatus; sapor mitis. Lamellae latae, adnate, demum violaceo brunneae. Stipes 25-38 x 1-2 mm, subflexuosus, sursum pallidus, deorsum sordide vinaceo brunneus; pallide sericeofibrillosus. Sporae (5.5-)6-6.6 (-7.1) x (3.3-) 3.8-4.4 um, ellipsoideae vel subovoideae, in KOH luteobrenneae. Basidia tetraspora vel rare bispora. Pleurocystidia 19.6-33 x 10-13.5 (-16) um, fusoide ventricosa vel clavate mucronata vel clavata, apice 3-4 um lata; hyalina. Cheilocystidia 18-30 x 8-10 um, fusoide ventricosa. Cuticula pileorum gelatinosa. Specimen typicum in Herb. Univ. Mich. conservatum est; legit prope Priest Lake, Idaho, 5 Oct. 1956, Smith 54068 (isotypus in ENCB).

Pileus 15-20 mm broad, convex to subumbonate, smooth, slightly striate at the margin by transparence when moist, when faded ± sulcate, viscid at first, margin silky at first but soon glabrous overall, dark reddish brown (± "Warm Sepia"), hygrophanous, fading to cinnamon buff to dull orange-buff. Context thin, concolor with pileus, taste mild, odor none.

Lamellae broadly adnate, dark cocoa-color, becoming violaceous brown, edges concolorous or ± paler than the faces.

Stipe 25-38 x 1-2 mm, central equal or at base slightly thickened, somewhat flexuous, lower part cocoa-color, paler above, whitish or gray-silky ± over all from a thin fibrillose veil.

Spores (5.5-) 6-6.6(-7.1) X (3.3-) 3.8-4.4 um, ellipsoid to subovoid both in face and profile view, smooth, thin-walled, brownish in KOH, with apical pore distinct.

Basidia 13-22 x 6-7 um, 4-spored (rarely some 2-spored), subventricose, hyaline. Pleurocystidia 19.6-33 x 10-13.5 (-16) um, common, ventricose or some clavate, or mucronate (shape regular or versiform), apex 3-4 um wide,

hyaline or in some yellowish at apex. Cheilocystidia 18-30 x 8-10 um, hyaline, ventricose, somewhat mucronate in some, neck at times with one or more constrictions (moniliform or "strangulated").

Subhymenium hyaline but with an ochraceous-brown pigment irregularly distributed but very abundant. Gill trama of parallel-interwoven hyphae, hyaline to brownish, hyphae 6-11 um diam., thin-walled, with pigment irregularly distributed on the walls. Cuticle of pileus an ixocutis, the hyphae narrow, appressed and hyaline; hypodermial zone not differentiated from pileus trama. Clamp connections present.

Habitat and distribution. Gregarious to scattered on conifer sticks and debris. Known only from Northern Idaho.

Material studied. IDAHO: Boundary County, Priest Lake, Oct. 5, 1956, Smith 54068 (type, MICH; isotype, ENCB).

Discussion. This species is distinguished from the latter by the shorter broader no lageniform pleurocystidia. P. subborealis and P. laticystis together with P. washingtonensis Smith are very similar in general appearance; even they are closely related with P. crobula (Fr.) M. Lange ex Sing., but differ in presence of pleurocystidia.

Psilocybe subfimetaria Guzmán & Smith sp. nov.

Pileus 8-12 mm latus, conicus demum campanulatus, viscidus, ochraceus demum ochraceobrunneus, tactu caerulescentes. Lamellae argillaceae, demum purpureobrunneae. Stipes 25-45 x 2-3 mm, aequalis ad basin subbulbosus, cavus, albidus vel pallidus, tactu caerulescentes; vellum sericeofibrillosum. Sporae (9.9-)11-12 (-12.6) x 6.6-7.7 x 6-6.6 um, ± leviter compressae. Pleurocystidia nulla. Cheilocystidia 20-28 x 5-6.6 um, fusoide ventricosa, hyalina. Cuticula pileorum gelatinosa. Fibulae adsunt. Specimen typicum in Herb. Guzmán (ENCB) conservatum est; legit Vancouver, B.C., Canada 2 Nov. 1976, Guzmán 16677.

Pileus 8-12 mm broad, conic to campanulate or expanded -umbonate, smooth, when moist translucent-striate, viscid, ochraceous brown to straw color, bluing when touched or injured. Context white, odor and taste farinaceous, bluing where injured; KOH stainig cap surface brown, the context reddish brown; stipe negative.

Lamellae adnexed, clay color becoming violaceous brown, edges pallid or concolorous.

Stipe 25-45 x 2-3 mm, central, equal but with subbulbous base, hollow, white to whitish, slightly staining blue where touched. Veil present as a white-silky fibrillose layer forming a fibrillose zone or subannulus that is soon evanescent.

Spore print dark violaceous brown. Spores (9.9-) 11-12 (-12.6) x 6.6-7.7 x 6-6.6 um, in face view subelliptic, some symetric to subelliptic in profile, thick-walled, ochraceous brown in KOH, apical pore broad.

Basidia 22-33 x 8.8-11 um, 4-spored, hyaline subglobose to ventricose. Pleurocystidia none. Cheilocystidia 20-28 x 5-6.6 um, hyaline, lageniform, neck long and 1-2 mm thick; forming a sterile band on gill edge.

Subhymenium hyaline to yellowish, subcellular. Gill trama regular, hyphae ± hyaline. Cuticle of pileus an ixocutis; hypodermium of elongate hyaline hyphae. Clamp connections present.

PLATE I.

A. Psilocybe laticystis x 1, Smith 71298.
B. Psilocybe subborealis x 1, Smith 54068.

Habitat and distribution. Solitary to gregarious on dung in meadows and other grassy areas. Known only from Vancouver, B.C., Canada and from Oregon in the United States.

Material studied. CANADA. Vancouver City, 2 Nov., 1976 Guzmán 16677 (type, ENCB: isotype MICH); Guzmán 16629 (ENCB). U.S.A. Oregon, near Siltcous Station, 4 Nov. 1976, Guzmán 16665 (ENCB); Lane County, Dune City, Oct. 1977, Menser 859 (ENCB); 16 Nov., 1976, Leslie 3929 (ENCB).

Discussion. A species close to P. fimetaria (Orton) Watling (see Orton 1964) for details of the annulus, habit and habitat, but P. fimetaria has spores 11-14 (-15.5) x 6.5-8.5 (-9.5) um as observed by Guzmán on the type (in E). It is also similar to P. semilanceata (Fr. ex Secr.) Kumm. with spore size (11-) 12-14 (-15.5) x 7-8 um, according to several collections studied by the authors from Europe and the Northwest. P. semilanceata, however, has a more umbonate or papillate pileus, poorly developed veil, and grows on soil. P. pelliculosa (Smith) Singer & Smith is closely related with P. subfimetaria, but grows on debris and humus in conifer forests, and has spores (8.2-) 9.3-11 (-12) x 5-6 um; its veil is poorly developed to rudimentary. From P. liniformis Guzmán & Bas (1977) it differs in the form of the pileus, in the spores (12-) 13-14.5 (-16.5) x 7.5-10 um, and in the absence of a veil. P. subfimetaria is an hallucinogenic fungus. Leslie found that it contained psilocybine

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A NEW SPECIES OF PSILOCYBE (BELONGING TO THE P. CROBULA-GROUP) FROM ARGENTINA

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Studying material of Psilocybe collected by E. Horak in Argentina in 1962, the senior author found an interesting new species which at the first look tentatively was identified as P. alnetorum (Sing.) Sing. Due to the presence of pleurocystidia, however, this new species differs from the before mentioned species. The context of the species here described is not bluing and we assume that this fungus is not hallucinogenic. Together with this new record so far about 25 species of Psilocybe are known from Argentina. However, only 6 taxa are hallucinogenic or suspected to be so (Guzmán, 1978). Taking into account the fact that nowadays about 180 species are considered to belong to Psilocybe (Guzmán & Vergeer, 1978), this genus is abundantly represented in Argentina.

Psilocybe subalnetorum Guzmán & Horak, sp. n.

Pileo 10-12 mm, conico vel campanulato, umbrino. Lamellis adnato-subdecurrentibus, argillaceis. Stipite 20-25 x 1-1.5 mm, pileo concolori, minute fibrilloso,cortina nulla. Caro haud cyanescenti. Sporis 6.6-7.7/4.4-5.5 um, subrhombicis, levibus, tenuitunicatis, poriferis. Pleurocystidiis 16-38/11-16 um, raris, vesiculosis vel pyriformibus, mucronatis, plus minusve hyalinis. Epicute ex hyphis cylindricis subgelatinosisque cutem formantibus, membranis pigmento incrustatis, fibuligeris. Inter detritum sub Alni jorullensis. Argentina. Typus ZT, 66/476.

Pileus 10-12 mm broad, conic to campanulate, subumbonate, smooth but striate towards the margin when moist,dry, covered with concolorous fibrils, dark brown when moist, hygrophanous, drying yellowish. Lamellae broadly adnate to subdecurrent, argillaceous to pale rust brown, edge concolorous. Stipe 20-25 x 1-1.5 mm, cylindrical, flexuous, concolorous with pileus, covered with minute fibrils, dry hol-

low. Context probably concolorous with pileus, not bluing. Odor absent; taste not checked.

Spores 6.6-7.7 (-8.8) x (3.8-) 4.4-5.5 um, subrhombic or rhombic-elliptic in face view, subelliptic in side view, smooth, thin walled, brownish yellow, with a broad germ pore. Basidia 15-25 x 5-6 um, 4 spored, hyaline, vesiculose or subcylindric. Pleurocystidia 16-38 x 11-16 um, rare, hyaline, or some with a yellowish pale diffused pigment, broad vesiculose-pyriform, frequently mucronate; the mucron or neck is cylindric or moniliform, 4-7 x 2-4 um. Cheilocystidia 16-25 x 5-7 um, hyaline, narrow ventricose and mucronate or with short neck 3-4 um diameter. Subhymenium consisting or irregular small and globose hyaline cells whose walls are here and there irregularely encrusted with yellowish brown pigment, occasionally forming false pseudochrysocystidia in the hymenium (as in P. montana (Pers. ex Fr.) Kummer). Trama consisting or parallel hyaline hyphae (3-20 um diam.), membranes irregularely encrusted with yellowish brown pigment. Epicutis a thin subgelatinous layer of elongated hyphae. Hypodermium towards surface with similar structure as trama but deeper layers formed by thick hyaline hyphae. Clamp connections present.

Habitat and distribution: Gregarious among litter of Alnus jorullensis. Known only from the type locality.

Material studied: ARGENTINA, Prov. of Tucuman, Sierra de San Javier, San Agustín, March 3, 1962, Horak 66/476 (Type ZT, Isotypes BAFC and ENCB).

Discussion. Psilocybe subalnetorum Guzmán & Horak is closely related with P. alnetorum (Sing.) Sing. and P. cokeriana Smith & Hesler, differs, however, concerning the pleurocystidia. In the latter two species the pleurocystidia have an hyaline and refringent central oil drop like the chrysocystidia, as the senior author studied in the types (in BAFC & MICH). P. subalnetorum is also close to P. pyrispora (Murrill) Smith (from New York City, USA) (type in NY studied by the senior author); but the pleurocystidia of that species are always hyaline and further-more a mucronate apex is usually absent, or, if present, the neck does not exceed 3 um in length. In all four taxa mentioned here the size and shape of the spores and fruit bodies are alike, and they belong to the P. crobula-group.

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Guzmán, G., 1978. The species of Psilocybe known from Central and South America. Mycotaxon 7 (in press).

Guzmán, G. and P.P. Vergeer, 1978. Index of taxa in the genus Psilocybe. Mycotaxon 6: 464-476.

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REVUE DES LIVRES

par

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BIBLIOGRAPHIA SOCIETATUM LICHENORUM, par Chantal DELZENNE-VAN HALUWYN, in Bibliographia Phytosociologica Syntaxonomica, par R. TUXEN, édit., Suppl. 1, 177p., in 8°, 1977. J. Cramer, FL 9490 Vaduz. Prix DM 35.- , souscription DM 30.-.

Ce livre est un index des noms de taxa lichénosociologiques connus à ce jour, accompagnés d'une référence abrégée au protologue. Cet index est suivi d'une liste de la littérature à laquelle se réfère l'index. Le livre est présenté sans intoduction qui aurait permis de le situer comme supplément de la Bibliographia phytosociologica syntaxonomica et d'expliquer la méthode suivie, les abréviations et les signes adoptés. De plus l'absence complète de titres et de pagination des articles repris dans la liste bibliographique rend difficile, sinon impossible, la demande de cette littérature en bibliothèque.

FOURTH FEMS SYMPOSIUM. FEDERATION OF EUROPEAN MICROBIOLOGICAL SOCIETIES. VIENNA, MARCH 28 - APRIL I, 1977. ABSTRACTS. 140 p., in 8°, 1977. Publ. FEMS, Institut für angewandte Mikrobiologie, Universität für Bodenkultut, Peter Jordan Strasse 82, 1190 Wien, Austria. Prix Schillings 150.-.

Les quatre vingt sept communications présentées durant ce symposium ont toutes été consacrées aux champignons filamenteux, ascomycètes et basidiomycètes, à leur différenciation morphogénétique, leurs mécanismes biochimiques, leurs conditions optimales de culture, leurs métabolites et leur utilisation dans les industries biologiques de biosynthèse et d'épuration. Le systématicien, préoccupé d'observer la morphogénèse des espèces en culture pure, trouvera ici une source féconde de données.

MYCOLOGIE ET PATHOLOGIE FORESTIERES. II. PATHOLOGIE FORESTIERE, par L. LANIER, P. JOLY, P. BONDOUX et A. BELLEMERE, 478 p., 43 fig. 52 tabl., 2 pls. col. , in 8°, cartonné, toilé, 1976. Masson, 120 Bd Saint Germain, 75280 Paris.

Alors que la première partie est encore en préparation, la seconde partie est un traité, complet en soi, de pathologie forestière. Les auteurs d'abord passent en revue les diverses causes pathogènes, la symptomatologie, le parasitisme et les divers équilibres hôte-parasite. Dans le but de définir l'arbre sain, ils décrivent longuement la mycorrhisation et en soulignent l'importance. Les maladies physiologiques d'ordre écologiques ou telluriques sont décrites. Une distinction claire est faite entre les maladies de pépinières, les attaques sur pied (pourridiés) et les altérations du bois par les champignons lignivores. Un chapitre est

consacré aux bactérioses et aux viroses. Enfin, la description méthodique de toutes les maladies de chaque essence forestière couvre quelque 200 pages, où les maladies fongiques sont parmi les plus importantes et les mieux documentées.Ce livre constitue le seul traité de pathologie forestière de langue française et approprié aux forêts d'Europe.

ANNUAL REVIEW OF PHYTOPATHOLOGY. VOL. 15. par K. F. BAKER, G. A. ZENTMEYER et E. B. COWLING, éditeurs, 499 p., in 8°, cartonné, toilé, 1977. Annual Reviews Inc., 4139 El Camino Way, Palo Alto, California 94306, USA.

En tête de ce volume, hommage est rendu au Dr. Philip H. Gregory, qui dans un chapitre "Spores in air", retrace les développements de l'aérobiologie et son importance dans l'épidémiologie des maladies des plantes et des animaux. Maxwell et collaborateurs montrent l'importance des "microbodies in plant pathogenic fungi" et chez les champignons en général comme étant le siège d'accumulation d'enzymes particulières nécessaires dans la transformation de substances non-glucosiques; ces "microbodies" sont connus comme corps de Woronin, corps de Stüben, glyoxysome, peroxisome, cytosome etc. Par ailleurs, J.M. Trappe fait une évaluation des possibilités d'inoculation de diverses espèces de champignons mycorrhiziens en pépinières forestières. Caten et Day, dans "Diploidy in plant pathogenic fungi" analyse la position de la diploïdie sexuelle dans le cycle vital et sa durée, l'isolement de diploïdes somatiques et les mécanismes de formation de noyaux diploïdes. Notons enfin l'étude de Griffin sur la relation entre la croissance des champignons lignivores et la teneur en eau dans le bois.

DEMONSTRATIONS MYCOLOGIQUES, par G.L. HENNEBERT, Document de biologie ouverte n° 5, 97 p., 81 figs., in 8°, 1977. Publ. de Biologie Ouverte, A. Bouillon, Croix du Sud 5, 1348 Louvain-la-Neuve, Belgique. Prix FB 50.-.

Exposé méthodologique de démonstrations ayant les champignons pour objet et destinées à l'enseignement préuniversitaire ou universitaire de niveau sous-gradué, dans le cadre des cours de biologie générale, de cryptogamie et de microbiologie. Sans ambition de couvrir tous les aspects de la mycologie, ni d'approfondir une connaissance systématique des champignons, ce livre veut introduire l'étudiant aux principales techniques microbiologiques qui lui permettront d'observer et de cultiver les champignons et en particulier les levures et les moisissures.

INTRODUCTION TO BIOLOGICAL SCANNING MICROSCOPY, par M.A. HAYAT, 323 p., 54 figs., in 8°, 1977. University Park Press, Chamber of Commerce Bld, Baltimore, Md 21202, USA. Prix $ 14.95.

L'auteur, une autorité en ce domaine, expose de manière simple et concise autant les méthodes de routine que les méthodes nouvelles ou modifiées utilisées dans la microscopie SEM d'objets biologiques. Il en compare les avantages et les inconvénients, dans le but de recommander celles qui permettent d'atteindre les meilleurs résultats dans l'observation de la topographie des cellules et des tissus. Le livre, bien qu'adapté au non-initié, eut été plus démonstratif s'il eut été plus abondamment illustré. Ce livre sera certainement utile au mycologue ayant accès à un équipement SEM.

OPERE DI LOUIS PASTEUR, par Onorato VERONA, trad. et introd., in Coll. Classici della Scienza, L. Geymonat, édit., 1024 p., 10 pls. hors texte, relié, 1972. Unione Tipografico Editrice Torinese, Torino, Italia. Prix Lo 15,000.-.

L'oeuvre de Louis Pasteur ne peut être oubliée. Les études de Pasteur sur les ferments de la bière et du vin, qui l'ont conduit à mettre au point la méthode des cultures pures (axéniques) et de la stérilisation par la vapeur, ont permis non seulement une réfutation indiscutable des théories fantaisistes des "polymorphistes" mais aussi la défense des principes taxonomiques dans la distinction des espèces des champignons par leur culture en milieux normalisés. C'est de cette dette que nous devons à Pasteur que le Professeur Verona s'est admirablement acquitté en traduisant et en commentant dans sa langue les oeuvres du savant français, qu'il présente dans un livre richement relié.

REVIEWERS

The Co-Editors express their appreciation to the following individuals who have reviewed one or more of the papers in this volume prior to publication.

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ERRATA (VOLUME 6)

Page 220, lead 18(17): for *broteriana* read *albo-velatum*
420, line 18: *for* Susan M. Gruff *read* Susan C. Gruff
Spine 6(3): *for* October-December 1977 *read* January-March 1978

ERRATA (VOLUME 7)

Page 47, line 45: for *glabratula* (Lamy) read *glabra* (Schaer.)
73, 49: for *emeleia* read *emileia*
76, 22: for *apiculata* read *apiculatula*
79, 14: for *O. auricula* read *Otidea auricula*
81, 1: for *crouani* read *crouanii*
17: for *cervina* read *cervaria*
34: *for* TU *read* UT
83, 41: for *persoonia* read *persoonii*
45: for *plachonis* read *planchonis*
84, 34: for *umbrarum* read *umbrorum*
85, 33: for *stercorius* read *stercoreus*
53: for *boudierii* read *boudieri*
165, 28: for *echinata* read *echinatum*
29: for *echinatum* read *echinata*
210, 1: *for* uniserriate *read* uniseriate
228, 25: *for* HOOGSHAGENI *read* HOOGSHAGENII
239, 31: for *weldeni* read *weldenii*
321, 28: for *Scirrophragma* read *Scirrhophragma*
324, 14, 20, 21: for *pulchellus* read *pulchella*
345, 42: for *saepiarium* read *sepiarium*
400-408 (throughout): *for* Raitvĭir *read* Raĭtviĭr
534, col. 2: *under* Peziza *add* domiciliana 73;

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