Fungi of the Marshall Islands, Central Pacific Ocean

DONALD P. ROGERS

INTRODUCTION

DURING THE LATE SUMMER of 1946 a party from the Department of Botany of the University of Hawaii visited a number of islands of the Marshall group with the purpose of collecting the species which occur there. The party consisted of Dr. Harold St. John, professor and chairman of the department, Mr. Richard S. Cowan, graduate assistant, and the writer. Transportation and living and working quarters were provided by the United States Navy; the journey from Honolulu to Kwajalein, and thence to the more northern islands, was made on a naval vessel, and to the islands south of Kwajalein by seaplane.

Although only 10 of the 34 atolls and single islands making up the archipelago were visited, these lie in both the northern and southern parts of the group, and in both the Radak (eastern) and Ralik (western) chains of which it is composed; and earlier visits by Dr. St. John to other atolls indicate that the 10 visited show nearly all the diversity of climate, topography, and vegetation exhibited by the larger number. It is true that all the islands on which the party landed were inhabited, and it is possible that studies of some of the uninhabited islands would have given a somewhat different impression of the vegetation. This limitation, however, probably is of importance only for the collector of phanerogams; since stands of undisturbed native vegetation occurred on the inhabited islands also, it is unlikely that the

<table>
<thead>
<tr>
<th>ATOLL (or single island)</th>
<th>ISLAND</th>
<th>DATE (1946)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utirik</td>
<td>Utirik</td>
<td>September 1-2</td>
</tr>
<tr>
<td>Mejit I</td>
<td></td>
<td>September 3</td>
</tr>
<tr>
<td>Ailuk</td>
<td>Nankarai</td>
<td>August 31</td>
</tr>
<tr>
<td></td>
<td>Marab</td>
<td>August 31</td>
</tr>
<tr>
<td></td>
<td>Marme</td>
<td>August 31</td>
</tr>
<tr>
<td></td>
<td>Ailuk</td>
<td>August 30</td>
</tr>
<tr>
<td>Likiep</td>
<td>Eniarmij</td>
<td>August 29</td>
</tr>
<tr>
<td></td>
<td>Beibi</td>
<td>August 29</td>
</tr>
<tr>
<td></td>
<td>Likiep</td>
<td>August 28</td>
</tr>
<tr>
<td>Wotje</td>
<td>Ormed</td>
<td>September 4-5</td>
</tr>
<tr>
<td></td>
<td>Riri</td>
<td>September 5</td>
</tr>
<tr>
<td>Namu</td>
<td>Namu</td>
<td>August 16</td>
</tr>
<tr>
<td></td>
<td>Leuen</td>
<td>August 16</td>
</tr>
<tr>
<td>Ailinglapalap</td>
<td>Ailinglapalap</td>
<td>August 20</td>
</tr>
<tr>
<td>Jaluit</td>
<td>Imrodj</td>
<td>August 20</td>
</tr>
<tr>
<td>Ebon</td>
<td></td>
<td>September 9-12</td>
</tr>
</tbody>
</table>

Most of these names are those given on U. S. Hydrographic Office charts 5413 and 5414. The other localities are shown, but not always named, on advance proofs of H. O. charts 6007, 6018, 6020, and 6022. In Ailuk Atoll the ninth island north of Ailuk Island is called by the inhabitants of the atoll “Marab”; that name is used in this report, although the proofs of chart 6022 designate it by the apparently nipponized name “Marappu.” The island immediately south of it (and eighth to the north of Ailuk), unnamed on the charts, is called “Marmé” by the Marshallese. The thirteenth island of the series running north from Ailuk has the native name “Nankarai.” In Likiep Atoll, Beibi is shown on H. O. chart 6020. The

1 Department of Botany, University of Hawaii. Manuscript received December 2, 1946.
island next to Biebi on the northeast, and connected to it by a stretch of reef exposed at low tide, is unnamed on the charts; according to Marshallese informants it is called "Eniarmij." Riri in Wotje Atoll lies next to Ormed on the east; it is named on chart 6018. Imrodj in Jaluit Atoll is shown immediately above "N. E. Pass" on chart 5414, and named on 6007.

August and September fall within the rainy season for the Marshalls, and there had been recent rainfall, enough not only to moisten the soil but even to soak the fallen logs, on all the islands except Ebon; often there were showers or heavy rains during the collecting trips. On Ebon there had been no rain for some time, and the paddies devoted to the cultivation of Cyrtosperma contained mud but no standing water; nevertheless, soil and vegetable debris were damp and supported an abundant growth of fungi.

On the evidence of the vegetation, as well as of published accounts, there is a considerable increase in rainfall as one goes from north to south; the vegetation of the northern islands is somewhat more open and poorer in species, and lichens and other epiphytes are distinctly less abundant, than in the islands south of Kwajalein. Mejit, in the northern part of the group and also considerably east of its nearest neighbors (Utirik, Ailuk, and Wotje), appears much wetter than they. Ebon, the southernmost atoll of the archipelago, alone of those visited supports the dense tangle of undergrowth and the abundant epiphytes that usually enter into the description of a jungle. Any further attempt to characterize the vegetation is beyond the scope of this report, and must be left for Dr. St. John's account of the vascular plants.

I have been able to discover few discussions of the fungi of the Marshalls. Ehrenberg (1820) described Scaphophorum Agaricoides, Boletus Katui, B. sanguineus, Sphaeria fur, and S. profuga from collections by Chamisso in the Radak chain; these were reduced to synonymy (S. Agaricoides = Schizophyllum commune, B. Katui = Polyporus xanthopus, B. sanguineus = P. sanguineus) or redescribed, and validly published, by Fries (1821: 374, 504, 505; 1823: 431, 488); the two species of Sphaeria were transferred to Metasphaeria by Saccardo (1883: 182). Hennings (1897) listed or described from Jaluit 13 species, from collections by Schwabe and by Finsch: Auricularia auricula-judae, Polystictus sanguineus, Schizophyllum Alneum, Fomes amboinensis, Polyporus Kamphoeveneri, Marasmius calopus var. jaluitensis P. Henn., M. Pandanocola P. Henn., Psathyrella disseminata, Psathyra Schwabeana P. Henn., Hypholoma jaluitensis P. Henn., Galera sp. (confertae aff.), Pleurotus Schwabeanus P. Henn., and Lachnea jaluitensis P. Henn. Schumann and Lauterbach (1901: 37–63) combined Ehrenberg's and Hennings's lists, treating Psathyra Schwabeana under Pratella and Pleurotus Schwabeanus under Agaricus, and, for some incomprehensible reason, reporting Meta-sphaeria fur as "Metasphaeria Jas." Volkens (1903: 84) listed only species already reported. No other reports have come to my attention. Thus, unless there are studies published during the Japanese occupation which have been overlooked, the recorded myco-biota of the Marshall Islands embraces 16 species. The University of Hawaii party brought back approximately 425 specimens of fungi, of which 126 specimens, representing 34 species (2 of them new), are here listed. The study of this material is continuing, and other reports will be published.

In the interests of brevity, in listing specimens only the atoll is given where but one island of the cluster furnished collections of fungi, and the date is omitted unless collections were made on an island on more than one day. Except where otherwise noted, the collector is D. P. Rogers and the numbers are "D. P. R. . . ." Portions of all Marshallese specimens have been deposited in the Bishop Museum (occasionally indicated by the sym-
bol BISH); portions of all collections of Myxomycetes except three (duplicated by other specimens from the Marshalls), and of all species of Heterobasidiomycetes, are in the herbarium of the University of Iowa (SUI); certain specimens cited are in the Farlow Herbarium (FH); portions of nearly all collections are in the writer’s herbarium. Where material is sufficiently abundant, wider distribution has been or will be made. The synonymy given is not intended to be complete; for most species only a few of the more satisfactory and more readily available descriptions are cited.

I am indebted to the University of Hawaii, which through Dean Paul S. Bachman and its Pacific Islands Research Committee assumed the financial burden of the expedition; to Captain John C. Hammock, Commodore Benjamin F. Wyatt, Lieutenant H. B. Wessinger, and those other officers of the United States Navy who facilitated our journey to the Marshalls; to Professor G. W. Martin of the University of Iowa, who named a number of the Myxomycetes and made available extensive manuscript notes on Auricularia; to Professor J. N. Couch of the University of North Carolina, for notes on material of Septobasidium; to Miss Hilda Harris of the Farlow Library, who verified citations of works not available in Hawaii; and to Dr. St. John and Mr. Cowan, whose assistance and companionship made the journey an agreeable as well as a productive one.

MYXOMYCETES

1. ARCYRIA DENUDATA (L.) Wettst.—Utirik, 1657; Mejit, 1492, 1642, 1660; Likiep: Likiep I., 1651; Jaluit, 1649; Ebon, 1631.

2. ARCYRIA NUTANS (Bull.) Grev.—Likiep: Biebi I., 1652.

3. CERATIOMYXA FRUTICULOSA (Muell.) Macbr.—Mejit, 1628; Wotje:

Ormed I., 1661, Riri I., 1629; Ebon, 1634.

4. COMATRICA TYPHOIDESa (Bull.) Rost.—Mejit, 1643; Jaluit, 1647; Ebon, 1636.

5. CRIBRARIA TENELLA Schrad.—Jaluit, 1650, 1662.

6. DICTYDIUM CANCELLATUM (Batsch) Macbr.—Ailuk: Ailuk I., 1653.

7. FULIGO SEPTICA (L.) Wiggers—Ebon, 1627, 1638.

8. HEMITRICHIA SERPULA (Scop.) Rost.—Namu: Leuen I., 1648; Ebon, 1635.

9. HEMITRICHIA STIPITATA (Mass.) Macbr.—Ailuk: Ailuk I., 1654, 1706; Wotje: Ormed I., 1640; Ebon, 1632.

10. HEMITRICHIA VESPARIUM (Batsch) Macbr.—Ailuk: Ailuk I., 1710; Ebon, 1637.

11. PERICHAENA DEPRESSA Lib.—Ebon, 1630.

12. PHYSARELLA OBLONGA (Berk. and Curt.) Morg.—Ailuk: Ailuk I., 1708; Jaluit, 1646.

13. PHYSARUM TENERUM Rex—Mejit, 1641; Ailuk: Ailuk I., 1655.

14. PHYSARUM VIRIDE (Bull.) Pers.—Utirik, 1659.

15. PHYSARUM WINGATENSE Macbr.—Ailuk: Nankarai I., 1712; Wotje, Ormed I., 1645, Riri I., 1626, 1639.

16. STEMONITIS FUSCA Roth—Utirik, 1658; Ailuk: Ailuk I., 1656; Likiep: Likiep I., 1625.

17. STEMONITIS SPLENDENS Rost.—Likiep: Biebi I., 1644.

None of the Myxomycetes collected is sufficiently uncommon or unusual to be

a As in all other matters, I have attempted to follow the existing provisions of the International Rules with respect to orthography. Cf. Rec. XLIII, and the addition voted at Amsterdam.
worthy of comment. The circumscription and nomenclature are those of Macbride and Martin (1934).

**PHYCOMYCETES**


Fructifications tuberiform, bladderlike, approximately isodiametric or flattened, plicate, scarlet, growing paler toward the base, tough-membranous, hollow, opening by an irregular fissure either at the base or above, about 1.5–5 cm. in greatest diameter, early partly enveloped in a white byssoid veil, later free, the surface slightly roughened; hyphae of the veil 4.5–5 μ in diameter, their walls asperulate, about 0.5 μ thick, the lumen interrupted at intervals of 15–60 μ by thin septa; wall of fructification composed of compact outer layers of hyphae with inflated cells up to 10 μ in diameter; of medullary hyphae loosely interwoven, septate, 2–3 μ in diameter; and of embedded chlamydospores; chlamydospores ellipsoid, about 300 × 200 μ, with a rigid wall 17–19 μ thick and an outer apparently gelatinized membrane 5–7 μ thick, enclosing fluid material with numerous oil globules.

On the surface, or under loose fragments, of well-decayed vegetation, chiefly leaves of *Cocos nucifera*. Ebon, R. S. Cowan and D. P. R. (D. P. R. 1343).

The fungus is characterized adequately for recognition merely as having hollow, red, membranous fructifications; the few microscopic details given are only for possible microscopic comparison with other material, for it is less than certain that the Ebon collection is conspecific with those reported from the American tropics. Thaxter writes of the "conspicuous orange yellow color" of *G. aurantiaca*; and the specific epithet seems (except by Boedijn) to have been taken without challenge at its face value. The carrying of a copy of Ridgway to the humid tropics seemed too hazardous, and no color comparison could be made in the field; but the fructifications certainly were not orange. My recollection is that the deepest-colored would come close to Scarlet-Red,8 or at least Scarlet, and the paler basal portions were not yellowish, but a clear rosy pink. The collectors of Boedijn’s specimens gave the color as “dunkel steinrot” and “orangerot.” Presumably neither Thaxter nor Berkeley nor Curtis ever saw the fungus in living condition; and in 2 months the Marshalls collection has faded to various orange-yellow shades, and in both color and consistency could very well be taken for slightly defective dried peaches or apricots. Without knowledge of fresh American material it would be rash and useless, therefore, to attempt to distinguish the fungus from *G. aurantiaca* by its color. Boedijn, whose admirable account gives an excellent idea of the Ebon material (except that the living specimens here reported were not in the least gelatinous), found no obstacle to the treatment of his specimens under the early name. Mr. Cowan found the greater number of fructifications (11 were collected) in deep shade under a tangle of bushes in a dense grove of coco palms. The species is reported from half a dozen islands of the West Indies, from Brazil and Mexico, and from two islands in the Netherlands Indies. Lloyd (loc. cit.) described a second species from Nicobar Island, which in Thaxter’s opinion (Stevenson and Cash, 1936: 3) may be identical. There are other synonyms.

**BASIDIOMYCETES**

19. **TULASNELLA ALLANTOSPORA** Wakef. and Pears., Brit. Mycol. Soc. Trans. 8: 220, fig. 7, 1923; Rogers, Ann. Mycol. 31: 190,

8Color-names capitalized are used in the sense of Ridgway (1912).
On rotten, friable wood of *Artocarpus incisisus*. Ebon, IX.10.46, 1366.

Like a number of European and American specimens, that from Ebon was a barely perceptible bloom when living, and dried is, except under the binocular, wholly invisible. It can readily be recognized in microscopic preparations by the four inflated epibasidia and the thick-allantoid spores. The latter in the collection cited are mostly 7-7.5 × 3.5-4 μ, relatively stout, like the type, but very little tapered toward the ends, more like some Iowa material. Previously reported from western Europe and from the northeastern quarter of the United States, the southernmost station being in Missouri. Martin (1939: 242) has reported two other species of *Tulasnella* from the tropics: *T. violea*, a common species of western Europe, the northeastern states, and southeastern Canada, from Colombia; and *T. sphaerospora*, unknown elsewhere, from Panama. *Gloeotulasnella calospora* occurs in Hawaii.


A grayish-pruinose growth showing under the microscope repent mycelium; obovate, aseptate hypobasidia bearing (usually) four tubular epibasidia like those of a tremella; and oblong-ellipsoid spores. The shape of the spores reaches the extreme of elongation known in this species, quite like Figure 2 (g) of the Iowa paper. Hitherto reported from the Austrian Tyrol and central France in Europe, and in the Western Hemisphere from southern Canada and the northern states. In comparing the Likiep specimen with mainland material, I observed, in *D. P. R.* 144 from Iowa, basidia with five well-developed epibasidia. More than four epibasidia or spores apparently are developed elsewhere in the Tremellales only in *Gloeotulasnella*.


On rotten, friable wood of *Artocarpus incisisus*. Jaluit, 1580.

A thin cinereous-buff crust, under the microscope showing irregularly linear gloecystidia with often yellow-granulose content, ellipsoid cruciate-septate basidia, and obtuse cylindric spores. The fructification cited is young, and thinner than is usual for the species. Its spores, which have the form characteristic of *S. cinerea*, are smaller than in most collections (7.5-8.5 (10) × 4-4.5 (5) μ), and near the lower limit of size published for the species. The form of the basidia and the degree of compactness of the hymenium, both significant characters in the subgenus *Bourdota* to which the species belongs, are typical.

The two synonyms given are an addition to those cited in previous discussions. The comparison of Möller’s descriptions with good material of *S. cinerea* leaves little need for hesitation in equating his *Exidiopsis* to the present species. Acceptance of that synonymy extends the range of *S. cinerea* to southern Brazil; its known range already stretches from Ontario to Panama, from Massachusetts to Oregon, and in Europe from Finland to Italy.

Fungi of the Marshall Islands — ROGERS


The fructification is distinctly cretaceous and, unlike that in most specimens of the species, clearly visible to the naked eye—and about as conspicuous as a thin dab of white-wash. Under the lens it is seen to consist of numerous more or less separated whitish conical spicules; under the microscope each of these may be seen to be composed of a number of parallel cystidia, surrounded and conglutinate by a film of indistinct hyphae which ascend for fully two thirds of the height of the spicule and bear on their surface cruciate-septate basidia with four very short epibasidia continued in long, subulate sterigmata. The cystidia of the Ebon specimen differ somewhat from those developed in other collections; but as noted elsewhere, the same may be said of almost any specimen: they are a variable lot. The cystidia, rather than being straight, thick-walled and with a narrow lumen at the base, and thinned-walled and with a dilated lumen at the summit, as often in Peniophora sect. Tubuliferae, are contorted, often several times septate, constricted at some septa or for the entire length of some of the segments, and with the wall only slightly thickened. They show considerable resemblance to those of Peniophora pallidula. Some, however, approach the regularity of more typical Sebacina dubia. Known from widely separated localities in temperate Europe and North America; reported by Martin (loc. cit.) from Brazil.

23. Sebacina farinacea sp. nov. Fig. 1.

Fructificatio viva alba, farinacea-ceracea, margine attenuato, zona peripherica sub lente e granulis albis distinctis (cystidiis) composita, exolea pallide griseo-pruinosa, sicca cretacea vel leviter sordida; hyphae nodoso-septatae, 1.5–3 μ diam.; paraphyses sparsi, tenues, ramosi; cystidia e corporibus cylindraceis 3–4 μ diam., valde granulatis calcareis incrustatis, composita, stipitata, subfusiformia, 20–33 × 7.5–10 μ; gleocystidia linearia, irregulararia, matura suco luteo granuloso suffulta, 17–50 × 5–6 μ; basidia cruciato-septata, ellipsoidae vel oblonga, 14–16.5 (–18) × 8.5–11.5 μ, epi­basidia quattuor 2–2.5 μ diam., long. ad 16 μ, gerentia; spore oblongo-ellipsoidae vel obovatae, 8–9.5 × 6–7 μ, per repentemem germinantes.

Fructification when fresh pure white, becoming slightly creamy (a little lighter than Cartridge Buff), adnate, separable in small bits, farinaceous-waxy, under the binocular with minutely farinaceous surface, thinning out at the margin to a peripheral zone composed of minute white granules (cystidia) arising out of a thin transparent waxy film; old specimens grayish-pruinose; when dry chalky white to barely cream (paler than Ivory Yellow) or in older fructifications nearly as dark as Cartridge Buff; hyphae distinct, with clamps throughout, 1.5–3 μ; paraphyses scattered, reaching the surface, mostly inconspicuous, the stalk linear, 2–3 μ in diameter, with peg-like or contorted branches 1 μ in diameter; cystidia arising at the margin and later engulfed by the hymenium and lying at its base, composed of a subcylindric, thin-walled cell 3–4 μ in diameter and heavy coarse mineral incrustation, at maturity sub fusiform, obtuse, stalked, 20–33 × 7.5–10 μ; gleocystidia arising near the base of the fructification, somewhat sinuous, irregularly inflated or constricted, thin-walled, the content early hyaline and homogeneous, later yellow, granular, refractive, resinoid, 17–50 × 5–6 μ; basidia subtended by a proliferative clamp, ellipsoid, becoming oblong and truncate, 14–16.5 (–18) × 8.5–11.5 μ, longitudinally cruciato-septate, bearing 4 epibasidia 2–2.5 μ in diameter and up to 16 μ or more in length; spores oblong-ellipsoid to obovate, 8–9.5 × 6–7 μ, germinating by repetition.

On dead fibrous leaf sheaths, leaf bases, and husks of Cocos nucifera.

HAWAII: Oahu: University of Hawaii campus, Manoa, II.12.46, I. A. Abbott and D. P. R. (D. P. R. 655); II.17.46, 1132; III.20.46, I. A. Abbott and D. P. R. (D. P. R. 1175), and 1176; III.31.46, 1243; VI.21.46, 1327, 1328; X.29.46, 1884, type (in herb. D. P. R., BISH, SUI); X.30.46, 1888; XII.4.46, 1931.

MARSHALL ISLANDS: Ebon, IX.10.46, 1388.

To the naked eye Sebacina farinacea presents the appearance of one of the innumerable small white Thelephoraceae—perhaps
**Fig. 1.** *Sebacina farinacea*: A–I, basidia; J–M, spores; N–Q, cystidia; R–S, gloeocystidia; T, paraphysis. C, F, I, K, M, N, O, Q, S = D.P.R. 1888; A, B, D, E, G, H, J, L, P, R, T = D.P.R. 1931.

**Fig. 2.** *Sebacina petiolata*: A–H, basidia; I–M, spores; N, paraphysis; O, gloeocystidium. All D.P.R. 1475.

All drawings were made with camera lucida under oil-immersion objective and 10× ocular at 1675X, and reduced in reproduction to approximately 1000X. Fig. 1 B and I and 2 C, D, and F–H are incomplete (optical section) and do not represent two-celled basidia.
a thin growth of *Corticium suecicum* or *Peniophora Sambuci*. In structure it is most nearly allied to those species of *Sebacina* subgenus *Bourdota* with well-developed paraphyses, such as *S. Galzinii*; its gloecystidia are similar, as are the arrangement of the basidia and their frequent elongate form. It is, however, much less gelatinous, and more resistant to separation of the hymenial elements under the cover-glass. On the other hand, its possession of paraphyses and commonly elongate basidia separate it from the group of more arid species of which *S. caesio-cinerea*, for example, is a member, and it does not show the sheath of empty basidia surrounding the fertile hypha that is so characteristic of those species. The heavily encrusted cystidia, resembling those of *Peniophora pubera*, are apparently unique in *Sebacina*. In fact, their place of formation—in a peripheral zone, where they mature before any other hymenial elements are developed—seems to be unique in the whole known range of the Basidiomycetes.

The subgenus *Heterochaetella* is defined by the possession of cystidia. *Sebacina farinacea* shows no indication of affinity to the species of *Heterochaetella* other than its cystidia; and even that exists only because the term “cystidium” is employed for a number of very different structures. The affinities of *S. farinacea* being rather with *S. Galzinii*, it is assigned to the subgenus *Bourdota*.

Since the available keys to *Sebacina* all make use of the dichotomy “gloeocystidia present: cystidia present” in one form or another (Bourdot and Galzin, 1928: 17; Rogers, 1935: 37; McGuire, 1941: 11; Martin, 1944: 35), *S. farinacea* can be included most readily by the insertion of an additional choice:

“Both gloecystidia and encrusted cystidia present..........................................................*S. farinacea*”

*Sebacina farinacea* can be found after almost any prolonged rainy period on the dead sheaths of leaves attached to young coco palms. Probably it could be collected more abundantly if the bases of the leaves of mature trees were less inaccessible. The Ebon specimen is the only one found elsewhere—on the rotting husk of a coconut. It is quite old and poor, but recognizable.

24. *Sebacina petiolata* sp. nov. Fig. 2.

Fructification viva gelatinosa, opalea vel hyalina, luteo-, roseo-, vel cyanoe-tincta, 0.5–3 mm. crassit., sicca hyalino- vel ochraceo-vernicios; hyphae pleurumque distinctae, nodoso-septatae, 2–2.5 μ diam., sub basidii ad 5 μ expansae; paraphyses filiformes, apicum versus furcatae vel fruticulosae, raro nodoso-septatae, 1–3 μ in diam.; gloecystidia primo hyalina, homogenea, serius luteo-granulosa, irregulariter subcylindracea vel subfusiformia, obtusa, 39–150 × 4–7 μ; probasidia primo clava, hypobasidia matutina obpyriformio-clavata, cruciatim septata, 21–32 × 9–12.5 μ, ad apicem lobata, epibasidiala 4 crassa, 10–50 × 3–5.5 μ gerentia, basidiorum stipitibus ab hypobasidio separatis a septis eisdem verticalibus parietem versus curvatis; sporeae hyalinae, ellipsideo-oblongae vel eiliipsideo-subglobosae, 7–11 × 6–8 μ, per repetitionem germinantes.

Fructification gelatinous, hyaline or yellowish, pinkish-, bluish-, or plumbeous-opalescent, 0.5–3 mm. thick, the margin attenuate or abrupt and ciliate, when dry hyaline- or ochraceous-vernicious; hyphae mostly distinct, with clamps throughout, 2–2.5 μ in diameter, broadened up to 5 μ just below the basidia; paraphyses filiform, near the tips forked to bushy, occasionally nodose-septate, the basal portion 1.5–3 μ in diameter, the tips contorted, nodulose, unencrusted, about 1 μ in diameter, finally obscure; gloecystidia with hyaline homogeneous content, becoming coarsely yellow-granular, irregularly subfiliform, subcylindric to fusiform or clavate, obtuse, 39–150 × 4–7 μ; basidia arising as clavate bodies, becoming obpyriform-clavate, the hypobasidia cruciate-septate, lobed at the summit, the inflated terminal portion 16–24 × 9–12.5 μ, the stalk 20–27 × 3–4.5 μ, separated from the fertile summit by the longitudinal walls, which curve away from their line of intersection to meet the outer wall, the epibasidia very thick near their bases, 10–50 × 3–5.5 μ; spores hyaline, evenly oblong to ellipsoid-oblong, 9–11 × 6–7.5 μ, or ellipsoid-subglobose, 7–9 × 6–8 μ, germinating by repetition.

Growing over bark of a dead branch (unidentified), over an old fungus, and on wood of *Acacia Koa*, *Aleurites moluccana*, *Artocarpus incisus*, *Hibiscus Arnotianus*, *Messerschmidia argentea*, *Psidium Guayava*, *Samanea Saman* (= *Pithecobium Saman*),
Pandanus sp., and bark and wood of Cocos nucifera.


HAWAII: Oahu: east slope Manoa Valley (500–900 ft.), XI.18.45, 1218; Tantalus Trail, Pauoa, VII.21.46, 1331; S. branch of N. fork of Ekehanui Gulch (1,800–2,400 ft.), Honouliuli, III.17.46, 1169; Kupehau Gulch above pipe-line trail (2,000 ft.), Honouliuli, X.13.46, R. S. Cowan 179.

MARSHALL ISLANDS: Utirik, IX.1.46, 1525, 1548; Mejit, 1436, 1441, 1450, 1513, 1514, 1545; Ailuk: Marab I., 1571, Ailuk I., 1665, 1701; Likiep: Likiep I., on log of Cocos, VIII.28.46, 1475, type (in herb. D. P. R., BISH, SUI, FH); Wotje: Ormed I., IX.4.46, 1385, Riri I., 1500; Namu: Leuen I., 1403, 1431; Jaluit, 1617; Ebon, IX.9.46, 1393.

A continuous, usually thick gelatinous layer, composed (under the microscope) of branched paraphyses, gloeocystidia, and cruciate-septate basidia whose fertile distal part is separated from the stalk-like basal part by the intersecting vertical walls, which turn out to meet the outer wall of the hypothecium. The apparent color varies considerably, according to the thickness, the color of the substratum which shows through the clear or opalescent basidiocarp, and probably other factors. The collection from Kupehau when fresh was pinkish—Pallid Mouse Gray to Pale Vinaceous-Fawn, whereas the one from Ekehanui, not far away, was in part Pale Olive-Gray and in part colorless and merely pruinose; others were noted in the field as being yellowish-opalescent, bluish-opalescent, blue-white, lavender-gray, light neutral gray, and deep blue-gray. In texture and presence of gloeocystidia and paraphyses S. petiolata is related to S. Galzinii and S. umbrina, from both of which it differs in the manner of branching of the paraphyses, in clavate basidia, and in spores. The presence of the stout stalk separated by the vertical septa from the fertile portion is the clearest recognition-character. The new species may be accommodated in Martin’s, McGuire’s, or Rogers’s keys (earlier cited under Sebacinia farinacea) by the addition of a third choice to the dichotomy separating S. umbrina and S. Galzinii (or S. Pululahuana):

"Gloeocystidia similar to those of S. Galzinii (Pululahuana); spores oblong, ellipsoid-oblong, or ellipsoid-subglobose, 7–11 × 6–8 μ; basidia subclavate, the stalk separated by the vertical walls from the fertile summit ................................S. petiolata"
collections made on Jaluit, however, show in varying degrees a more luxuriant growth; the separate lenticular or tuberculiform basidiocarps are confluent to form not merely a reticulate aggregation, or the thin film which seems to be the most homogeneous fructification developed in temperate lands, but a tough, separable membrane, held together by a dense subicular layer, almost cartilaginous in consistency, of conglutinate hyphae. In some of the specimens this layer on drying has remained intact, forming a hyaline, translucent pellicle, glistening (under the binocular) from light reflected from the sides of the minute polygonal areoles which represent the originally separate basidiocarps, and from their very short narrowed stipe-like bases, which remain separate even in the older parts of the fructification, and which can be made out through the continuous surface. The spores and basidia of the Jaluit material also average somewhat larger than those of most other specimens. There is, however, considerable overlapping in these as in other respects; the best developed of the Jaluit specimens is well matched by one from Hawaii, while the more delicate specimens or areas are not distinguishable from some of the Hawaiian and North American ones. It is certain that conditions of temperature and humidity on Jaluit at the time of collection were extremely favorable for the development of tremellaceous fungi, and to the weather may be ascribed the extreme forms here noted.


On bare wood, or growing out through fissures in the bark, of Pandanus sp. Utirik, 1554; Ailuk: Marme I., 1750; Mejit, 1440, 1453, 1508.

Guepinia Spathularia as here treated includes all those fungi with fructifications cartilaginous-gelatinous in consistency, orange or brownish-orange in color, flabelliform or incised-flabelliform, tomentose on the compressed stipe and one surface of the expanded summit, with forked basidia and one-septate spores. All of the Marshallsean collections have the basidiocarps less obtuse at the distal margin, more translucent, brighter (and redder) in color, and less tomentose on the sterile surface, than any material at hand from temperate regions, and than any shown in the illustrations cited. Microscopically, although the spores may be slightly more slender, no significant differences appear to exist. A considerable number of species have been described from the tropics, most of them differing little from G. Spathularia. Several recent authors have indicated doubt of the autonomy of certain or all of these species; and it seems neither necessary nor prudent, in the absence of any considerable amount of tropical material for comparison, to attempt at present a decision on the distinctness of these segregates or of the Marshall Islands material.


Fructifications when fresh thin, flexible, leathery-gelatinous, the dorsal' surface uniformly pilose, cinereous-gray,-pink, or -buff, or in old specimensfuscous, glabrescent, the hymenial surface more or less pruinose, dull flesh-color, purplish-rosy, dull purplish, or in older specimens blackish; solitary or gregarious to densely imbricate-caespitose, eccentrically peltate or sessile by a narrowed posterior margin or produced into a short stipe-like sterile base, up to 5 (rarely—20) cm. in breadth, convex and even or slightly plicate above, cupulate and even or in larger specimens shallowly venulose below; when dry thin, flexible, quite fragile, trans-
lucent, pallid-cinereous to buffy-cinereous above or in old specimens sometimes dark and nearly glabrous, below purplish-black to slaty-black, contracted and usually considerably wrinkled; in section composed of a hymenial layer about 70 μ thick, a medullary layer about 700 μ thick, and a compact dorsal layer about 20 μ thick underlying the tomentum; hymenial layer consisting of densely compacted basidia, of paraphyses 1.5–2 μ in diameter with brownish branching indistinct tips exceeding the basidia and forming a dense continuous superficial layer, and of slender contorted subhymenial hyphae; medullary layer of rather loosely arranged hyphae with irregular often open clamps and confluent, highly gelatinized walls, apparently 2–3 μ in diameter but much thicker if the limits of the walls could be observed, mostly parallel to the surface in the middle and perpendicular in the upper and lower quarter; dorsal layer consisting of an inner colorless half of heavily stainable hyphae 1 μ in diameter, densely compacted, perpendicular to the surface, and with little gelatinized wall material between, and an outer pigmented layer abundantly penetrated by the bases of the surface hairs; hairs up to 225 X 4.5–7 μ, thick-walled and aggregated in conical tufts; basidia linear or slightly clavate, 40–50 X 4.5–5 μ, 3-septate; spores allantoid, 15.5–17 X 4.5–5.5 μ.

In the Marshalls usually on wood of Cocos nucifera, with one collection on Artocarpus incises. Wotje: Ormed 1., 1353, 1354, 1379, 1383; Namu: Namu 1., 1404, 1414, 1434; Ebon, 1338.

A thin, leathery, often ear-like basidiocarp, pilose and ashy to nearly glabrous and brownish-black above, and rosy to purplish-black below. The most abundant growth was encountered on Ormed, where large clusters had developed on standing dead trunks of coco palms, many of which had been topped by the blockaded Japanese garrison for their edible terminal buds, while others had been cut by artillery fire or bomb-blast. The Marshallese name, “lajiling kijilik” (rat’s ear), is applied without much discrimination to many bracket- or ear-like or even stipitate Basidiomycetes—polypores, Pleurotus, and others—but there was some suggestion that this species is the true rat’s ear, and on Ormed the name was given only to this Auricularia. Strangely enough, it is not eaten in the Marshalls, whereas in Hawaii the same species, under the name “pepeiaoakua” (ghost ear) is regarded, not mistakenly, as good food.

Persoon’s description (loc. cit.) reads as follows:


In insulis Mariannis inque Moluccis.

Pour la configuration et la couleur, cette espèce ressemble beaucoup à l’auricularia sambuci [i.e., A. auricularis (S. F. Gray) Martin, Amer. Midland Nat. 30: 81, 1943]; mais elle s’en distingue par sa partie fertile, qui n’est presque pas veineuse, et parce qu’elle pousse en-dessous une sorte de stipes ou appendice long de quelques lignes. A ces caractères, il faut ajouter l’habitat, qui pourtant ne doit pas avoir influé sur la forme et la dimension? P.

In this there is, first of all, an obvious error: the description has the basidiocarp inverted; it is not pubescent below, but above. (It may be noted that Fries and succeeding generations of mycologists made the same mistake for all species which, like this, were placed in the genus Hirneola. See Fries [lac. cit.], p. 144; and 1825: 93.) The presence of a stipe, furthermore, is here no more than fortuitous; it is not a discrete structure, but an indistinct prolongation of the basidiocarp, and probably no more than an occasional response to the position of the latter, or to such an external condition as development through a fissure in the bark. The same development occurs in northern specimens of A. auricularis. Neither is the configuration of the hymenium a constant character; among the numerous collections at hand there are some quite smooth, and others as venulose, and as ear-like in their convolutions, as any specimen of A. auricularis. The word “resupinata” need not be misleading if it be noted that Persoon (1822: 97) uses the same adjective in describing the familiar northern A. auricularis. What is left, then, of Persoon’s account is a description of a large species of Auricularia, yellowish-gray-pubescent above, blackish below, greatly resembling A. auricularis, and occurring from...
the Marianas to the Moluccas. The size of the Marshalls specimens is not remarkable, nor does the largest specimen at hand, a Hawaiian basidiocarp 20 × 12 cm., significantly exceed the maximum given by Martin (1944: 65) for A. auricularis—which, as it happens, is also described by Persoon as "sat magna"; but the typical development of the tropical fungus seems to be a larger one. The yellow-ashy dorsal surface and blackish hymenium are characteristic of mature specimens, grown in strong light, of the form under discussion, which is probably the one Auricularia of the Pacific islands resembling A. auricularis. Whether the two are distinct has been doubted; probably reports of A. auricula-judae from Oceania, such as Hennings's, cited earlier, and Patouillard's, refer to the fungus here called A. ampla. By its more strongly pilose basidiocarps, conspicuously rosy young hymenia, and somewhat larger spores it is at least readily distinguishable, and one inclined to question the distinctness of the Pacific form should note that the differences are much greater in living than in preserved material. Unsatisfactory as it is, Persoon's account gives as sound a basis for the identification of his fungus as those of later authors whose names have been more commonly adopted. Briefly, that basis is an abbreviated description which, allowance being made for obvious error, is quite applicable, as far as it goes, to the fungus at hand, and with that description a geographical limitation which seems to confine the application to the one species. Reference to the original valid descriptions of accepted species of Auricularia will show that they are no better founded. It is at least highly probable that the form under consideration is A. ampla, and that name should be superseded only if reason appears to doubt the correctness of its application, or if an earlier name, likewise probably applicable, exists.4

Dried mature specimens from the Marshalls mostly show on the dorsal surface a color that cannot be exactly matched in Ridgway—more tawny, and less greenish, than Olive-Buff or Deep Olive-Buff; the grayer specimens are Pale Olive-Gray to Mouse Gray; the hymenium is Light Quaker Drab to Blackish Plumbeous. A specimen soaked for spore-printing (and still alive) showed the hirsute surface Pallid Mouse Gray and Light Mouse Gray to a tawny color like that of the dried material, and the hymenium Light Heliotrope-Gray to Dark Purple-Drab, Dark Vinaceous-Gray, and Heliotrope-Slate; certainly young specimens were redder when first collected. Freshly collected Hawaiian specimens have the dorsal surface Tilleul Buff and Vinaceous-Buff to Sorghum Brown, Drab-Gray, and Drab, and the hymenium Russet-Vinaceous to Sorghum Brown. The colors of the very brightest young hymenia have not been recorded; according to my recollection they

4Through the great kindness of Dr. A. J. Lam and R. A. Maas Geesteranus of the Rijksherbarium, Leiden, I have recently (II.18.47) been permitted to study adequate fragments of the type of A. ampla and a photograph of the entire type collection. The two fructifications there present measure respectively 4.5 × 3.5 and 8 × 7 cm.; the dorsal surface is evenly pilose, and Cinnamon Brown to Prout's Brown (Mr. Maas Geesteranus writes that the smaller specimen is glabrescent); the ventral surface is nearly smooth (only a few low folds appearing in the photograph), not pruinose, and Plumbeous Black or Black. The layers shown in section are the same as those here described in the Marshalls material except that for about 75 μ above the basidia the medullary layer includes a continuous mass of colorless, amorphous, refractive material not seen in any Marshalls specimen sectioned. Persoon's type and the Hawaiian and Marshall Islands specimens agree very closely, and their identity may be considered to be established. The name A. ampla which heads this note cannot, however, be retained; it is antedated by Exidia cornea (Ehrenb.) ex Fries, Syst. Mycol. 2: 222, 1822 (Auricularia cornea Ehrenb., Hor. Phys. Berol. 91, pl. 19, fig. 9, 1820), a name applied to the same fungus collected on Oahu by Chamisso. The valid name is then Auricularia cornea (Ehrenb.) ex Fries, ex—. I have been unable to find that this binomial has been validly published; it seems unlikely that a still earlier name will be discovered. The type of A. ornata is now lacking at Leiden.
would be at least as red as Purplish Vina-
ceous.

28. Auricularia ornata Pers. in Gaudichaud, Bot. Freycinet Voyage autour
du Monde ... Uranie et ... Physicienne
177, pl. 2, fig. 4, 1827. A. adnata Lyon in

Fructification when fresh tough fleshy- to car-
tilaginous-gelatinous, adnate over much of its area
or centrally peltate-rooting, disciform, lobed-
disciform, or by confluence elongate, 0.5-7.5 cm.
in diameter, the margins at first closely appressed,
later often reduced to 0.5 cm., by confluence, the lower (hyme-
nial) surface pruinose, soft brown (Pale Brownish
Drab to Natal Brown), in young specimens
smooth to slightly rugose, in older with strong,
irregularly forking, vein-like thickenings more or
less radially arranged, the upper surface where
free coarsely pileose, zonate, the zones alternately
of long and of short hairs, mostly dark brown
(Snuff Brown to Bister), but interspersed with
light bands (about Pinkish Buff), in young speci-
mens with appressed margins the pilosity, shown
only as a narrow buffy margin; when dry hard, in
consistency like dried cartilage, the hymenium
strongly pruinose, plumbeous (Cinereous to Dark
Plumbeous), with younger portions lighter and
browner (Drab to Gray); in section composed of a
hymenial layer about 85 μ thick, a medullary layer
about 1000 μ thick, and an abhymenial layer about
30 μ thick; the hymenial layer consisting of a pig-
mented superficial portion about 15 μ thick com-
posed of the indistinct, branching ends of para-
physes 1-1.5 μ in diameter, and a basidial portion;
the medullary layer consisting of hyphae 3-9 μ in
diameter with irregular, often open clamp connec-
tions and greatly gelatinized walls, densely com-
pacted and perpendicular to the surface in the
lower and upper 100 μ, looser and more or less
parallel to the surface in the middle; the abhym-
enial layer brown, nearly opaque, compact and
(in the free parts of the basidiocarp) supporting a
pilose layer about 70-300 μ thick (according to the
surface zonation) of free brown hyphae;
basidial linear or often narrowly claviform or
basally ventricose, 3-septate, 52-70 × 5.5-7 (rarely
-8.5) μ; spores thick-allantoid, with stout truncate
apiculus, 12.5-15.5 (-17) × 5.5-6.5 μ.

On bark and decorticate wood of Messer-
schmidia argentea.

LINE ISLANDS (Pacific): Palmyra I.,
VIII.20.24, H. F. Bergman [A], [B], det.
by Lyon as A. adnata.

MARSHALL ISLANDS: Utirik, 1549; Ailuk:
Marab I., 1568, Ailuk I., 1518; Wotje:
Riri I., 1372; Namu: Leuen I., 1408.

A leathery growth, brown above and
below when moist and active, apparently
limited to the single substratum Messer-
schmidia (= Tournefortia) argentea, and to
hard, elevated, little decayed branches of
that species. The earliest of the Marshalls
collections was made in a soaking rain, and
the fungus was at first taken to be a some-
what thicker and softer relative of Stereum
hirsutum. The highly characteristic brown
color disappears from the hymenium on
drying, and is replaced by a pruinose slate
not too different from the appearance of
other species of Auricularia. Since A. ornata
is one of the far too numerous lost species,
the original description is here reproduced:

A [auricularia] pilo dimidiato reflexo tomen-
toso, zonis fuscis pallidisque variegato, inferne
venoso nigricante. Pers.

In insulis Mariannis.

Cette plante est l'une des plus jolies espèces du
genre. Elle a par sa partie supérieure quelque
similitude avec l'Auricularia mesenterica, Pers.
Mycol. Europ. 1, p. 97. Mais sa surface inférieure
est garnie de veines comme dans l'Auricularia sam-
buci (tremaella auricula, Linn.). P.

The illustration shows a dimidiate basidi-
carp with prominent zonation on the dorsal
surface, more like a sketch of Coriolus versi-
color than like any Auricularia, and certainly
not remotely like the almost resupinate fun-
gus on Messerschmidia. But having soaked
a dried specimen to secure a spore-print, I
happened to pick away a few marginal bits
of the bark to which it was attached, in order
to discover how much of the dorsal surface
was free from the substratum. The surface
revealed was zonate not merely because of
the varying lengths of the hairs which
covered it, but "variegated by fuscous and
pallid bands," exactly as described and illus-
trated by Persoon. It seems likely that the
material from which the description was
drawn up either had been removed from its
substratum by the collector or had been pried
away, as was mine, to discover the character
of the dorsal surface. The resemblance noted
to Auricularia mesenterica may possibly ac-
Fungi of the Marshall Islands — ROGERS

count for some of the reports of that species from Pacific lands. Fries (1838: 555) lists *A. ornata* as a possible synonym of *A. mesenterica*, with the note, "sec. Montagn. non differt" (Montagne having, it would appear, studied Persoon's specimens). Material at hand of *A. mesenterica* shows a much thicker and more deeply pilose basidiocarp, with the hyphae of the medullary layer much more highly gelatinized and more widely spaced, and with an ochraceous, rather than chiefly brown, dorsal surface. The two species are undoubtedly closely related; on the basis of available specimens, I should consider them amply distinct. There seem to be no zonate species described in the genus other than *A. mesenterica* and *A. ornata*; the latter is as well characterized as any member of *Auricularia*, and there can be little doubt that the collections here cited belong to Persoon's species.

The fungus is quite as certainly Lyon's *Auricularia adnata*. The type of that species, collected "on Tournefortia trees" on Palmyra Island, 1,100 miles south of Oahu, is not at hand; but Dr. H. L. Lyon has recently confirmed Bergman's identification of the two later Palmyra collections (from the same substratum), indicating that the specimen now marked "A" is the more typical. These are indistinguishable from the Marshall Islands material. Other adnate species have been described in *Auricularia*; of these only *A. peltata* Lloyd seems well enough characterized to be recognizable without special study. Material at hand of this species shows uniformly smaller and more strongly venulose basidiocarps attached over nearly all the dorsal surface by the uniformly pallid tomentum; it is quite a different fungus from *A. ornata*. It is at least odd, if not significant of relationship, that Lloyd’s type, as well as one of the specimens more adequately described by Ahmad (1945: 242) grew on *Cordia myxa*—like *Messerschmidia*, an arborescent member of the Boraginaceae.

29. *Septobasidium* sp. (Bogoriensi affin.); cf. Boedijn and Steinmann, Buitenzorg Jard. Bot. Jour. 3 ser. 11: 205, fig. 25, 26; pl. 18 (b), (c), 1931; Couch, Genus Septobasidium 213, pl. 61, fig. 3–10; 103, fig. 4–7; 104, fig. 10–12, 1938.

On living prop roots, and more rarely on bark of living trunks, of *Pandanus pulposus* and *Pandanus* spp. Namu: Namu I., 1421, Leuen I., 1417; Ailinglapalap, 1480; Jaluit, 1474, 1577, 1578; Ebon, IX.9.46, 1335, 1336, 1389.

This fungus formed conspicuous lichen-like encrusting patches, light gray or lilaceous-gray, on a considerable part of the *Pandanus* trees on the islands where it occurred; the quantity of material collected was limited only by the time that could be profitably spent cutting it off the trunks, and the space available for drying. Although superficially resembling the grayish lichens which occurred abundantly in the same places, the *Septobasidium* could readily be recognized as a member of that genus by the irregular discontinuous development of its margin, by the evident elevation of its surface on short brownish pillars (whereas the lichens clung closely to the bark), and by the brown centers of the older fructifications. It occurred on all the islands visited south of Kwajalein; whether it is found there also is not known, since the two islets of Kwajalein Atoll on which the party landed were almost completely denuded of native vegetation. Although a careful search for the *Septobasidium* was everywhere made, none was discovered north of Kwajalein. On the drier atolls, such as Ailuk and Wotje, where the lichen incrustation was also sparse or wanting, this lack was to be expected; but although on Mejit the vegetation and lichens indicated a climate fully as favorable for the growth of fungi as that of Namu, the *Septobasidium*, it seems safe to say, does not occur there. Some reported hosts of *S. bogoriense*, such as *Citrus* and *Hibiscus*, grow on islands where
Septobasidium was abundant on Pandanus, but the fungus was found on none but the latter plant. Parts of all collections have been sent to Dr. J. N. Couch, who will discuss the fungus in a future publication of his.


On wood, husks, and dead leaf-sheaths of Cocos nucifera, and on old polypore. Ailuk: Ailuk I., 1758; Mejit, 1447, 1510, 1520; Likiep: Likiep I., 1477; Wotje: Ormed I., 1370, 1543; Jaluit, 1615.

A delicate ochraceous tomentose growth, under the lens minutely tufted, under the microscope composed of stout, short-celled hyphae branching at right angles, of rough-walled subglobose spores, and of obpyriform basidia. The mature spores are thin-walled when abstricted; but in the Namu specimen, and to a slighter extent in others also, the wall soon becomes considerably thickened. I have seen one other similar tropical collection.

31. Pellicularia lembospora Rogers, Farlowia 1: 109, fig. 8, 1943.


A cream-colored, very slight and loose, hypochnoid growth; distinguishable under the microscope by its small navicular spores mostly 7–8 × 3 μ. The collection consists of a few minute pallid patches of this, the perfect stage, scattered among the much more robust, tawny; imperfect fructification of the same fungus. See under Oidium tomentosum, below. Previously reported from British Guiana and Cuba, and present also in Hawaii; a tropical relative of the more nearly ubiquitous P. vaga.

32. Pellicularia vaga (Berk. and Curt.) Rogers, Farlowia 1: 110, fig. 9, 1943. Corticum botryosum Bres.; Bourd. and Galz., Hym. Fr., 241 [1928].

On bark, wood, and husks of Cocos nucifera, and wood of Pandanus sp., Artocarpus incisus, and an undetermined dicot. Utirik, 1459, 1801; Ailuk: Ailuk I., 1703, 1746, 1757; Mejit, 1447, 1448, 1510, 1515, 1520; Likiep: Likiep I., 1477; Wotje: Ormed I., 1370, 1543; Jaluit, 1615.

A pallid or buff hypochnoid growth with the characteristic very wide mycelium of the genus and naviculiform spores (fusoid, depressed on one side) mostly 10–12 × 4.5 μ. The commonest member of the genus in the Marshalls, as on the northeastern and northwestern coasts of the American mainland and, apparently, in western Europe.

FUNGI IMPERFECTI


On husks of Cocos nucifera. Ebon, IX.10.46, 1805 (with 1338).

A grayish bloom, imperceptible except under considerable magnification, composed of hyaline linear conidia coiled like a watch-spring, and very short hyaline conidiophores. The fungus was discovered only when the specimen earlier cited of Sebacina farinacea was being examined under the binocular. It is less conspicuous macroscopically than the quite inconspicuous Iowa specimens, determined by Linder, with which it was compared, but agrees in all other respects.

34. Oidium tomentosum (Berk. and Curt.) Linder, Lloydia 5: 204, pl. 5, fig. E, 1942.

On bark of rotten log of Ochrosia parviflora and unidentified dicot wood. Likiep: Beibi I., 1672, 1674.
Pilose, loose, reddish-tawny; composed, as are all species of *Pellicularia*, of very thick, short-celled hyphae branching at right angles; fruiting by globose conidia borne on short peg-like lateral teeth. As in Hawaiian collections, this imperfect stage is much better developed than the perfect stage, *Pellicularia lempostora*. Reported from the Bahamas and Cuba.

REFERENCES

AHMAD, SULTAN. Higher fungi of the Panjab plains: IV. *Lloydia* 8: 238–244, fig. 1–3, 1945.

BOURDOT, HUBERT, and AMÉDÉE GALZIN. *Hy­menomycetes de France Heterobasidies-Homobasidies Gymnocarps*. iv + 761 p., 185 fig. Bry, Sceaux [1928].


MARTIN, G. W. New or noteworthy fungi from Panama and Colombia: III. *Myco­logia* 31: 239–249, 18 fig., 1939.


RIDGWAY, ROBERT. *Color standards and color no­menclature*. iv + 44 p., 53 pl. Published by the author, Washington, D. C., 1912.


SACCARDO, PIER ANDREA. *Sylloge fungorum om­nium hucusque cognitorum*. vol. 2. 815 + ii­lix + 77 p. Sumptibus auctoris, Patavii, 1883.

