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[Running title: “DECADES OF FUNGI”.]



## DECADES OF FUNGI.

*Decade XX.*; by the Rev. M. J. BERKELEY, M.A.,  
F.L.S.

(*With Two Plates.* TAB. XX. and XXI. XXII.)

*Tasmanian Fungi.*

191. *Agaricus* (*Amanita*) *ananæceps*; n. s.; pileo amplo convexo glabro nitido, centro areolato; areolis verruca conica obsessis; margine lævi sed volva appendiculato; stipite elongato marginato-bulboso versus lamellas in stipitem porrectas incrassato; velo mox obliterato. Gunn, No. 1777, 1805.

HAB. Penguite; on the ground. March.

Pileus three and a half to four inches across, convex, quite smooth and shining, areolate in the centre, each area producing an angular conical wart; sometimes however, the divisions are not distinctly marked, but there is simply a smooth space between the warts; margin even, in half-grown individuals appendiculate. Stem three inches or more high, half an inch thick in the centre, strongly bulbous below, incrassated above, at first furfuraceous, but at length smooth. Veil soon vanishing.

Gills moderately broad, attenuated behind, and forming raised lines for a short distance on the stem.

Very nearly allied to *A. nitidus*, Fries, but differing in its longer stem, and in well developed individuals in its distinctly areolate surface, giving it the resemblance of a pine-apple, from whence its name is derived.

192. *A.* (*Pleurotus*) *phosphorus*, n. s.; pileis infundibuliformibus glabris pallidis dense cæspitosis; stipitibus ut plurimum [*sic*] centralibus deorsum attenuatis subsericeis, supra e lamellis latiusculis integris descendentibus lineatis. Gunn, No. 1361.

HAB. On roots of trees. Oct., 1845, and abundant in the succeeding January and February.

Forming dense masses, or occasionally growing singly. Pilei three to five inches across, infundibuliform pale, yellowish brown, smooth or very rarely minutely cracked or virgate; fleshy in the

centre, thin at the margin, which is slightly lobed. Stem one to two inches high, attenuated below, solid, slightly silky, lineated above; or in solitary individuals, short and obtuse. Gills rather broad above, attenuated and decurrent behind, and forming lines on the stems; interstices even. Spores broadly ovate, white, or when seen in a dense mass, tan-coloured.\*

The solitary individuals present quite a distinct aspect, having a short obtuse and less silky stem, and the gills, though much attenuated at the base, ending abruptly. Occasionally a pileus of a similar form occurs in the midst of a tuft. So phosphorescent, that Mr. Gunn was able to read by its light, and it remained luminous for six days or more after being gathered. It is certainly distinct from the two phosphorescent Australian species, *A. nidiformis*, and *A. lampas*, described in my first Century.

A curious specimen, supposed to be of this species, or possibly *A. salignus*, was found growing on *Acacia dealbata*, from the cavity in which the caterpillar of a Cossus had been nursed, and entirely filling up the shell of the Pupa with its mycelium, so as at first sight to appear parasitic on the insect.

193. *A. (Pleurotus) affixuis*, n. s.; latissime gregarius; pileo demum latere affixo cyphellæformi plicato-striato; stipite brevi tenui reflexo; lamellis adscendentibus arcuatis aduatis. Gunn, No. 1788.

HAB. On bark of a young tree of *Eucalyptus amygdalina*. Penguite, Jan. 6, 1846.

Covering the bark in broad patches.

Pileus one line and a half broad, reflexed and attached by the side, cup-shaped, plicato-striate, smooth, membranaceous. Stems short, smooth, recurved, adnate, with the gills rather distant and thick, ascending, arched, attached to the apex of the stem only. The matrix is here and there clothed with a thin, white, downy mycelium. The colour of the species when fresh is probably white, with a yellowish or rufous tinge on the gills, which, in the dry

\* This perhaps arises from their being impregnated with the colouring matter of the Pileus. Sec Tul., in Ann. des Sc. Nat. 3 Ser. v. 5. p. 361.

plant, have a smooth shining hymenium. I do not see any gelatinous stratum.

194. A. (*Crepidotus*) *hepatochrous*, n. s.; gregarius; pileo horizontali subcarnoso sinuato glabro hepatico; stipite brevissimo albo, primum basi disciformi affixo; lamellis luteo-cinnamomeis albo-marginatis. Gunn, No. 1787.

HAB. On bark. May, 1845.

Gregarious, but scarcely crowded.

Pileus at first globose, with a short central stem, but soon extended on one side, and at length extremely eccentric, smooth, rather undulated, one inch or more broad, slightly fleshy, not gelatinous, of a deep liver-brown. Stem always extremely short, white, attached by a round disc, the margin of which is byssoid. Gills moderately distant, rather ventricose, rounded behind, of a pale cinnamon, edged with white, not echinulate. Spores oval, ferruginous.

Allied to *A. mollis*, from which, however, it differs in many respects. Its spores are far smaller than in that species.

195. A. (*Crepidotus*) *insidiosus*, n. s.; pileo demum resupinato adfixo membranaceo margine tomentoso, stipite tenui brevissimo; lamellis latiusculis postice attenuatis adnexis aquose luteo-umbrinis,

HAB. Penguinite, on bark. With No. 1787. May, 1845.

Gregarious.

Pileus three quarters of an inch to one inch broad, at length quite resupinate and fixed to the matrix, membranaceous; edge pubescent. Stem very short and slender. Gills watery yellow-brown, attenuated behind; adnexed. Spores yellow-brown, ovate.

Much resembling the last, with which it agrees in the colour and size of the spores. The pileus, however, is resupinate and membranaceous, the stem very slender; the gills not evidently white-margined. The whole plant, when dry, is of a watery yellow-brown.

196. *Boletus fruticicola*, n. sp.; pileo amplo convexo glabrato rubido; stipite æquali glabriusculo lævi e mycelio glebam fruticolam formante oriente; tubis liberis compositis ore aurantio-flavo. Gunn, No. 1775.

HAB. Penguinite, attached to roots of *Pleurandra riparia*.

Solitary or slightly cæspitose.

Pileus fleshy, convex, at length occasionally cracked towards the margin, smooth red, five inches across. Stem nearly smooth, not reticulate, equal or slightly attenuated below, springing from a mass of earth traversed by mycelium, and surrounding the roots or base of the stems of *Pleurandra riparia*. Pores perfectly free, leaving a deep pit round the stem, compound irregular pale orange-yellow. Spores obovate, pointed below, of nearly the same size and shape as in *B. chrysenteron*.

Allied to the above-mentioned species, but differing in several particulars, and very remarkable from its peculiar habit, in which, perhaps, *B. sulfureus*, Krombholz, alone agrees with it. In the larger solitary specimens, the character of the free tubes is not so strongly marked.

197. *Polyporus pelliculosus*, n. s.; versiformis, demum fibroso-suberosus; pileo badio-fusco strigoso; margine albo; poris inæqualibus parvis, dissepimentis tenuibus lacerato-denticulatis.

HAB. On dead logs and roots of trees. Penguinite. May, July.

Extremely variable in form and size, 1–6 inches across, orbicular with the rudiments of a stem, dimidiate or spatulate. Pileus, when dry, hard, composed of radiating fibres, some of which go towards the pores, others to the surface, which is clothed with rough, hispid, fasciculate hairs of a deep brown, with the interstices paler, sometimes distinctly zoned; margin obtuse or acute, white when fresh; substance white towards the pores, brownish towards the surface. Hymenium white; pores small  $\frac{1}{50}$  of an inch across, irregular, unequal; dissepiments thin; edge toothed and lacerated.

This is evidently very closely allied to *P. Weinmannii*, Fr., but the pileus has no rufous tinge, and it is very hard when dry. The pores, as in that species, probably become brown when touched, as such an appearance is indicated in the specimens. The colour is nearly that of dry specimens of *P. resinosus*. I have about twenty specimens before me which exhibit great variety of form, but agree in their principal characters.

198. *Geaster tenuipes*, n. s.; peridio exteriore simplici multifido reflexo; interiore longe pedicellate ovato subtus leviter plicato; ore prominente conico plicato sulcato. Gunn. No. 1778.

HAB. On the ground.

Outer peridium thin, reflected, split to the middle into about eight lobes, marked with a circular pale disc, traces of which are visible even after the inner coat has entirely vanished; inner peridium half an inch in diameter, obovate, slightly plicate at the base, immarginate; peduncle two lines long, incrassated above, slender in the middle; aperture conical, prominent, with a slight depression round the base.

Nearly allied to the small form of *Geaster striatus*, but differing in its far longer peduncle, and slightly plicate base. The folds proceed from a circular disc formed by the apex of the stem.

199. *Cyttaria Gunnii*, Berk.; receptaculo globoso-pyriformi demum cavo; basi attenuatâ nec stipitiformi nec scabrâ; cupulis parvis. (TAB. XX. XXI.) Berk. in Hook. *Antarct. Fl.* vol. 2, p. 453. Gunn, no. 1375.

HAB. On living branches of *Fagus Cunninghamii*. Oct.

Growing gregariously on knobs of greater or less size in proportion to the branches on which they occur, at first pyriform, simply attenuated below without any distinct stem or scabrous coat; at length more or less globose and hollow, 1–2 inches in diameter more or less soft and flaccid when dry; cups numerous, with broad, irregular orifices. Asci rather short, cylindrical; sporidia, eight in each ascus, broadly elliptical. Hymenium soon obliterated.

This species was characterized in the Antarctic Flora; and I have nothing to add to the analysis there given, except the perfect sporidia. I am glad, however, of the opportunity of figuring so interesting a species from a very complete series of specimens.

TAB. XX. XXI. Fig. 1. Twig of *Fagus Cunninghamii* with small knobs covered with *Cyttaria Gunnii*, *nat. size*.

2. Large knob with *Cyttaria* in various stages of growth,

*nat. size.* 3. Vertical section, do. Fig. 4. Ascus with sporidia highly *magnified*.

200. *Sphaeria* (*Cordyceps*) *Gunnii*, n. s. Entomogena; carnosae, capitulo cylindrico flavo sursum nigrescente; stipite elongato albo. Gunn, No. 1800. (TAB. XXII.)

On caterpillars of some *Cossus* or *Hepialus*, Franklin Village, near Lancaster. April 29, 1846.

Growing from the neck of a caterpillar buried deeply in sandy ground. Stem with caterpillar five to eighteen inches long, rarely branched, flexuous, rugged below, cylindrical, white, solid, collecting particles of sand by means of a few downy threads.

Head 2–3 inches long,  $\frac{1}{8}$ – $\frac{1}{4}$  of an inch thick, perfectly cylindrical or lanceolate, obtuse or subacute, sometimes compressed, yellow below with the top of the stem, becoming black above. Perithecia elongated, ostiola scarcely projecting beyond the surface. Asci fusiform, flexuous; inner membrane terminated by a bipartite globe, which sometimes gives off a third membrane in addition to the two which are always present. Sporidia short, truncate, cylindrical, forming long threads at length detached. The globe at the apex of the inner membrane is probably merely a modification of the process, obtuse above, and then contracted, which so often occurs in the same situation. Mr. Broome has observed the tip of the second membrane of the ascus to be occasionally quite distinct from the globular process, but pressed closely against it, exactly as is the case sometimes with pollen tubes which do not penetrate the embryo-sac.

This fine species is in reality nearer to *S. ophioglossoides* than *S. Bobertsii*, though agreeing with the latter so closely in habit. The sporidia are like those of the former species, and by no means of the latter. Were there any uniformity in the fructification, we might adopt the genus *Hypocrea*; but as the sporidia vary so extremely, being in *S. citrina* like those of *S. ophioglossoides*, while in *S. rufa*, they form a row of sixteen, it seems impossible to separate it simply on account of a slight difference in consistence.

The following account of the species is copied from Mr. Gunn's notes.

“Of this I send you numerous specimens preserved both in spirit and brine, by which you will better judge their natural size and appearance. It was found in great abundance in some sandy land which had never been cultivated about three miles from Penguite, by the boys attending Mr. W. H. Hawkes’ school.

The caterpillar burrows in the ground to various depths, from four inches to a foot; and the fungus seemed to fill up the hole made by the caterpillar, which in all cases was erect. The caterpillar and stipes varied from five to eighteen inches in length, and were white, except about two or three (to four) inches, which projected above the surface of the ground, and were shaded off from the white colour below the ground to yellow at the surface, and thence to a deep olivaceous black at the extremity.

[“I got one specimen of this *Sphæria* about 1832, when the seasons were more rainy than they have been since until 1846, but had not seen it since, until Mr. Hawkes very kindly brought me some specimens, and drew my attention to it.”

Mr. J. E. Gray informs me that the chrysalis sent as belonging to the caterpillar is evidently that of *Cossus* or *Hepialus* or probably of a new genus between the two of which *Hepialus virescens* (which produces *Sphæria Forbesii*) may be regarded as the type. “We have,” says Mr. Gray, “a second species rather larger (better agreeing with the size of the Chrysalis case) from New Zealand, which differs from *H. virescens* in having reddish under-wings.”

TAB. XXII. Fig. 1. *Sphæria Gunnii*, *nat. size*, in different states. 2. Ascus with its bipartite appendage. 3. Tip of ascus with necklaces of sporidia. In this instance there are three membranes. 4. Apex of case of sporidia separated from the appendage, as sketched by Mr. Broome. 5. Sporidia from Fig. 3, and a portion of a string of spores from a specimen in which the asci themselves were quite absorbed. 6. String of spores when young. All except the first very highly magnified.