NOTES ON THE GENUS *PORIA*.

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THE PORIAS AND PORIA-LIKE FUNGI WITH DEFINITELY COLOURED HYPHÆ.

The genus *Poria* is admittedly one of the most difficult groups amongst the Basidiomycetes to deal with from a systematic point of view. The position is to a great extent chaotic. Many of the descriptions are very meagre, and it is often impossible to refer plants correctly to known species without access to the actual type specimen. Many species seem variable, due often to the differences between a young plant only establishing itself and an old one which has had ample time to develop fully. Through the kindness of the late Dr. C. G. Lloyd, Miss E. M. Wakefield, Dr. James R. Weir, and Dr. G. H. Cunningham, we have had some of our Australian species identified or have received identified foreign species for comparison. The present paper is part of an attempt to hall-mark by specific names some of our Australian species. In spite of its representing years of laborious work, many complete recastings, and the condensation of pages of manuscript, we feel far from satisfied with the result, and present this part as a present "jumping-off ground" which may have to be re-erected later on a modified basis.

From an examination of many specimens of Australian Porias and Poria-like fungi, we think that they are best divided primarily by the colour of the hyphæ as seen under the microscope under two divisions, viz., those with the hyphæ not coloured or only slightly so and into those with the hyphæ quite distinctly coloured. With the latter we deal in this paper, dividing them again into those with hyphæ dull yellowish, with hyphæ yellowish-brown, and with hyphæ livid brown or more or less fuscous or purplish brown. The following key is an attempt to differentiate briefly the Australian species we have examined under these three sub-divisions.

The species dealt with are numbered consecutively to those dealt with by one of us in the last paper of this series. The Roman figures following the names of colours, e.g., Old Gold (XVI.), refer to the plates in Ridgway's *Colour Standards and Colour Nomenclature*, 1912.

In the compilation of this paper, there has been a partial division of labour, one of us (L.R.) being mainly responsible for the Tasmanian specimens, the other for the continental ones.

KEY TO THE AUSTRALIAN PORIAS AND PORIA-LIKE FUNGI WITH DEFINITELY COLOURED HYPHÆ.

I. Hyphæ dull yellowish. General colour of plants, old gold.

A. Setæ present.

Setæ 165 to 190 x 8 to 11.5 μ. Pores minute, 6 to 7 in 1 mm .. .. *Poria setuloso-crocea*

B. Setæ few or absent.

Pores 2 to 2½ in 1 mm. .. .. *Poria crocea*

II. Hyphæ yellowish-brown and hence the substance brown of various shades.

A. Setæ present and readily demonstrable.

Setæ usually under 50 μ. long.

Pores 3 to 4 in 1 mm.

Substance thin, tawny olive, Prout's brown, Brussels brown, tendency to pileation in narrow brackets or in ungulate frustules with pallid pores .. .. *Polyporus subcontigua*

Substance thin, wood brown to buffy brown, setæ acuminate, 45 x 9 μ. .. .. *Poria victoriæ*

Substance thin (in Australian plants), darker, snuff brown to bistre, edge velvety, setæ with broadened bases, 18 to 45 x 5 to 9 μ. *Poria contigua*

Pores 4 to 7 in 1 mm.

Ferruginous, then ferruginous brown, tawny, or cinnamon (Australian plant tawny olive), light (not heavy), pores 5 to 6 in 1 mm., setæ 27 to 50 x 7 μ. .. .. .. *Poria ferruginosa*

Darker, umber brown or dark tawny brown, subiculum almost none, thin or thick, pores 5 to 6 in 1 mm., setæ ventricose, 15 to 30 x 4 to 5.8 μ. .. .. *Poria lævigata*

Dresden brown to darker, cut surface wood-colour, not very dark, edge definite and more gilvous, pores 5 to 6 in 1 mm. .. *Poria sublævigata*

Snuff brown, subiculum more tawny, pore layer distinct, pores 5 to 7 in 1 mm., setæ 19 to 32 x 7 μ., sometimes not found .. .. *Fomes conchatus* (resupinate form)

Brussels brown, substance more gilvous, subiculum considerable, some setæ hooked .. .. *Poria uncinata*

Setæ over 50 μ. long.

Argus brown, context more gilvous, thick, relatively light in weight, pores 2½ in 1 mm., setæ 64 to 72 x 8 μ. .. .. *Poria subweirii*

B. Setæ absent or few and hard to find.

Spores hyaline, some occasionally tinted.

Thin or thick (1 to 7 mm.), Sudan brown becoming Brussels brown, pores 4 to 5 in 1 mm., spores hyaline, sometimes tinted, 6 to 7 x 5 to 5.5 μ., setæ none or rare .. .. *Poria friesiana*

Thin to 6 mm., "ferruginous" (ochraceous tawny to buckthorn brown), pores 5 in 1 mm., setæ not seen .. .. *Poria carteri*

Closely adherent, thin to 4 mm. thick, wood brown to cinnamon brown, darker when old, pore mouths glancing, 6 to 7 in 1 mm., spores 3.5 to 5 μ., setæ none or few, 6 x 3 μ., 26 x 7 μ. .. .. *Poria brunneo-adherens*

Thin, surface light-coloured (between chamois and warm buff) becoming tawny olive, ochraceous tawny on section, pores oblique, lacerated, 3 in 1 mm. .. .. .. *Poria luteo-fulvus*

Spores definitely brown.

Thin, Argus brown, light in weight, pores large, irregular, 2 to 3 in 1 mm., spores tawny brown, 5.5 to 7.5 x 3.7 μ. .. .. .. *Poria tasmanica*

III. Hyphæ livid brown (more or less fuscous).

Extensive, thick (up to 7 mm.), surface dingy pallid, becoming fuscous to drab and blackish-fuscous when old, substance purplish fuscous, spores 5 x 3.5 μ. . . . . *Fomes lividus* (usually resupinate)

(a) HYPHÆ DULL YELLOWISH. GENERAL COLOUR OF PLANTS, OLD GOLD.

483. *Poria setuloso-crocea*, n. sp.—Forming irregular closely adherent patches, up to 7 cm. x 1 cm., in the irregular interstices of bark and the surface of decaying wood, in colour paler than Old Gold (XVI.), near to but paler than Isabella Colour (XXX.). The very thin sterile mycelium before the pores form approximates to the same colour and is granular or villous looking. Thickness up to 1 to 1.5 cm., the tubes browner than the surface colour, context practically absent, resting on the mycelium-penetrated substratum. Pores very minute, a little irregular in size, about 6 to 7 in 1 mm., dissepiments rounded. Spores fairly numerous, elliptical, one end more pointed than the other, 5.5 to 6 x 3.7 μ. Hyphæ slightly but definitely tinted yellowish or brownish yellow. Long narrow acuminate deep brown setæ, 165 to 190 x 8 to 11.5 μ. Causing rotting of the stump of a Pepper-tree (*Schinus mollis*), Fullarton, near Adelaide, July, 1924.

484. *Poria crocea*, Pers. (as *Polyporus*).—Forming patches 4 or more cm. in diameter and up to 5 mm. thick, in colour near Old Gold (XVI.) or lighter or darker, zoned on the under surface, sterile margin free, byssoid, broad and obtuse. The tubes are 2 to 4 mm. long, the subiculum definite but thin. The orifices are irregular, vary in size, about .3 mm. in diameter, usually about 2 to 2½ in 1 mm., sometimes broken into Irpex-like teeth. Hyphæ definitely yellowish, usually about 4 μ. in diameter, a little irregular, setæ not seen. Tasm.—Cascades, Hobart, July. Dr. C. G. Lloyd, in identifying the specimens for us, adds "neither to "the eye nor under the microscope can I tell any difference "between this Tasmanian plant and our *Polyporus croceus*, "but our plant is always pileate, never with any resupinate "portions, as far as my specimens go, yet Mr. Rodway's "plant is all resupinate. If the same species, it is strange "it should take such different habits in the two countries. "... If it is our plant, it is a bright orange yellow while fresh "and dries reddish brown. The colour change is very

"marked. The pores of the Tasmanian plant are a cm. "deep. We have a similar species, *Poria mutans*, with the "same colour change in drying, but our *Poria* never has pores "more than a mm. or two deep, and therefore cannot be the "same." The above description we have drawn up from our specimens. It seems probable that it is a species distinct from *Polyporus croceus*, Pers., though we provisionally give this authorship to it as a *Poria*.

485. *Polyporus subcontigua*, n. sp.—Sometimes forming small ungulate Fomes-like brackets, occasionally when the attachment is narrowed almost stalked, 5 mm. in size, with a greyish-brown rather radiately rough convex upper surface and a convex or concave pallid under-surface on which the irregular pores appear (these colours may be due to weathering). These small brackets may be alone present or the plant may be almost entirely resupinate, with here and there small brackets or narrow shelves with the above features. The resupinate portion may extend over several centimetres (e.g., 6 x 2 cm.), is very thin (1-3 mm.), and is near Brussels Brown (III.) to Prout's Brown (XV.) or Tawny Olive (XXIX.) and darker, sometimes with a more gilvous subtomentose edge near Buckthorn Brown (XV.). The pores are irregular, 3 to 4 in 1 mm., often oblique, the dissepiments thin and rather lacerated in the resupinate part, thicker and more rounded in the pileate, the mouths glancing, appearing pallid in certain lights, brown in others. The substance is tough, dark brown in the pileate portion, with no very evident subiculum, the pores being probably stratose and Fomes-like. Spores (?) hyaline, 5 to 7 x 3.5 μ.; hyphæ yellow-brown, thick-walled, 2 to 4 μ.; setæ dark brown, subulate to acuminate with a broad base, 26 to 55 x 4 to 9 μ. at the base. S.A.—Onkaparinga R. near Clarendon on fallen trunk (identified by Dr. C. G. Lloyd, No. 753, as *Poria contigua* "but with pileate formation"); Flinders Range near Quorn, August, 1921 (identified by Lloyd, No. 771, as *P. contigua*); on fence post, Clare, August, 1922; Myponga, May, 1927, on fallen trunks, ungulate forms only 5 mm. in size; Williamstown, June, 1927. W.A.—A non-pileate plant from Pemberton, August, 1926, may be this species.

This plant is related to such species as *Polyporus gilvus* (Schw.), Fr., and *Poria contigua*, Pers., both of which have brown setæ. The size of the pores is near that of *P. contigua* and larger than that of *P. gilvus*. The definite tendency to

pileation and the occurrence of ungulate forms removes it from *Poria*, and it may be considered as a *Polyporus* approaching *Fomes*. The species can be recognised by the size of the pore-mouths (3 to 4 in 1 mm.), the presence of brown setæ, and the tendency to form narrow shelves or small ungulate brackets. The small size of the latter, when occurring without a resupinate extension, renders them difficult to detect, the upper surface resembling the dead wood of the substratum, but the pallid pore-bearing surface, seen in the brackets but not noticeable in the resupinate extension and probably partly due to fading, forms a contrast when the log is turned, which draws attention to the fungus.

486. *Poria victoriæ*, Berk.—Miss Wakefield has kindly identified for us one collection as this species and another as *P. victoriæ prox.* She says:—"The original specimen of this "species in Herb. Berk. (labelled 'Victoria, Dr. Muller, 1855' "but without specific name) is one of the forms with brown "flesh and brown setæ. It was quite misunderstood by "Cooke, and under the name he included a mixture of various "species, mostly old and in poor condition. It is very close "to certain European species such as *P. contigua* or *P. "lævigata*, and may possibly prove to be the same as one "of them."

The specimens identified with certainty by Miss Wakefield (No. 16) were growing as small irregular patches 1 to 2 cm. long in the hollows of the rough bark of apparently a box-like Eucalypt near Wangan, Pilliga Scrub, N.S.W., in October, 1918. The colour is near Wood-brown (XL.). The thickness is 1 to 2 mm. The pores are mostly oblique from the upright position, the orifices very minute, about 3 to 4 in 1 mm., a little irregular in size with the thin dissepiments rounded. The hyphæ are yellow-brown, rather thick-walled, 3.5 to 4 μ., slightly wavy. The brown setæ are acuminate with the apices rather blunt, about 45 x 9 μ., not very numerous. Spores were not detected.

The plant identified as *P. victoriæ prox.* by Miss Wakefield forms irregular encrusting patches covering the rugged surfaces of the thickened base of a small dead tree. The fungus has agglutinated a few small leaves and formed pore patches on these. The wood is light from permeation, pallid in the centre, but with a thick brownish layer on the outer aspect. The pore surface is near Buffy Brown (XL.), darker than Snuff Brown (XXIX.), the edge and context gilvous

near Buckthorn Brown (XV.), Pores are about 4 in 1 mm., dissepiments rounded. The hyphæ are yellow-brown, usually about 3.7 μ. (2 to 4 to occasionally 5 μ.), a little irregular in calibre, thick-walled with acute branches. Setæ dark brown, few, acuminate. Spores hyaline, 7 x 3.4 μ. Milson Island, Hawkesbury R., May, 1915.

A *Poria* from Burnberry, N.S.W., September, 1916, is darker, near Snuff Brown (XXIX.), darker from some angles, paler from others, and seems to link on to what we consider to be *P. contigua*. It forms an extensive thin patch, 10 x 3 cm., with the tubes very obliquely placed, pore mouths about 3 in 1 mm., with numerous brown acuminate setæ with swollen bases, 17 to 35 x 6.5 μ.

487. *Poria contigua*, Pers.—The plants we refer to this species form thin patches (in our specimens) up to 12 x 4 cm. but usually less and about 1.5 mm. thick, Snuff Brown to Bistre (XXIX.) in colour and have relatively large pores (about 3 in 1 mm.), hyphæ yellow-brown, 2.5 to 3.7 μ., and thorn-like acuminate brown setæ with broadened bases 18 to 45 x 5 to 9 μ. In growing plants the narrow edge is paler and velvety, and in old plants the colour may be darker than bistre. The two Tasmanian collections were identified as such by C. G. Lloyd. Tas.—Lindisfarne, September, 1920, January, 1921. N.S.W.—Milson Is. S.A.—Locality not stated, 1920. These plants do not quite agree with English (Rea) or French (Bourdot and Galzin) descriptions of this species where the colour appears to be more bright (tawny cinnamon, umber cinnamon), the subiculum thicker (0.5 to 1 mm.), and the plants themselves up to 12 mm. thick. Our species closely resembles a specimen identified by Dr. James R. Weir as *P. ferruginea-fusca*, Karst., on *Pinus contorta*, Idaho. These plants are similarly thin, pore mouths about the same in size, colour nearly the same and border velvety, but in the American plants acuminate setæ are few, about 50 x 4 μ. With Lloyd's determinations and the more abundant setæ, we place our Australian plants at present under *P. contigua*.

To this species we also refer a plant, very like our Milson Island one, from Mr. E. J. Semmens (No. 19) on dead timber, Creswick, V., colour Bistre (XXIX.) from some angles, much darker from others, pores 4 in 1 mm., a few acuminate brown setæ with broadened bases, 45 to 57 x 8 μ. Another plant, from Mt. Lofty (?) was referred to Dr. Weir (No. 184), who reported:—"If the spores I find (hyaline, globose)

" are the true ones, I would refer it to *Poria victoriæ*, Berk. " from Victoria (type), but not material ex Cooke from Clar- " ence River." The specimen does not resemble very closely the plant identified for us as *P. victoriæ* by Miss Wakefield, corresponding better with the specimens we place under *P. contigua*. The colour is Snuff Brown to Bistre (XXIX.), pores 3 to 4 in 1 mm., numerous brown acuminate setæ 31 to 47 x 8 μ. at the bases. In the wood is some gilvous-coloured tomentose mycelium.

488. *Poria ferruginosa*, Schrad. (*Fomes ferruginosus*), is described as being bright rusty, then rusty brown, the subiculum 1 mm., the trama light (not heavy), the tubes cinnamon, 2 to 6 mm. long, the pores rusty-brown 4 to 5 in 1 mm., spores 4.5 to 5 x 2.75 to 3.4, cystidia abundant, deep brown, 30 to 50 (to 150) x 6.8 μ. We refer to this species, a specimen forming a thin crust-like layer, darker than Tawny Olive (XXIX.), on old mycelium, with 5 to 5½ pore mouths in 1 mm. and with a few dark brown acuminate setæ with broadened bases, 27 x 7 μ., Bulli Pass, N.S.W., November, 1919. Another specimen, thick (up to 8 mm.), resembles closely an English specimen of *Fomes ferruginosus*, but is darker (surface a little paler than Raw Umber, III., cut surface near Brussels Brown, III.). It is light in weight, pores 5 to 6 in 1 mm., hyphæ yellow brown, 2.5 μ., setæ narrow, thorn-like with flattened bases, brown, 22.5 to 30 x 6.5 μ. Locality not stated, N.S.W. probably. This plant seems also best referred to *P. ferruginosa*.

489. *Poria lævigata*, Fr.—The following collected by the late Mr. A. Zietz, probably in S. Australia, seems best referred to this species. It resembles closely a specimen identified for Dr. Cunningham of Wellington, N.Z., as *P. punctata*, Fr. Bourdot and Galzin consider *P. punctata* as a synonym of *P. friesiana*, in which setæ are rare. As in Dr. Cunningham's specimen setæ are readily found, perhaps his plant should be considered rather as *P. lævigata*.

Forming a circumscribed raised growth 12 x 5.5 cm., Drabs (XLVI.), Wood Brown (XL.) in certain lights, the rather broad sloping nearly smooth to subtomentose sterile edge between Wood Brown and Buffy Brown (XL.), the context near Brussels Brown (III.). It is intimately attached to the subjacent bark, in the centre being about 5 mm. thick or 7 to 8 mm. if the infiltrated outer-bark be included. The pores are oblique, minute, about 5 to 6 in 1 mm., dissepiments

rounded, spores hyaline, oval, 6.5 x 4.8 μ. Hyphæ brown, about 3.5 μ. A few brown acuminate setæ, 19 to 30 x 7.5 μ.

490. *Poria sublævigata*, n. sp.—Forming patches up to 12 x 2 cm., with outlying small pore-bearing islands 2 or 3 mm. in diameter, up to 4 mm. thick in the centre, shelving to the edge which is fairly sharply defined and in the growing part outlined by a narrow paler more gilvous zone near Buckthorn Brown (XV.). Pore surface glancing with the angle of light, paler than Dresden Brown (XV.) to much darker when old. Occasional sterile patches sometimes as a peripheral rim, subtomentose (microscopically finely strigose). Subiculum practically none. Cut surface wood-colour, not so dark as in *P. lævigata*. Orifices about 5 to 6 in 1 mm., dissepiments thin, microscopically strigose. Spores hyaline, subspherical, oblique, with a large gutta, 6.8 x 5.2 μ. Hyphæ yellow brown, 4 μ. Setæ dark brown, varying much, slightly curved or straight, acuminate, with ventricose bases, 19 to 35 x 5 to 7.5 μ. On small branches. N.S.W.—Locality not stated.

A species evidently closely related to *P. lævigata*, which the name suggests.

491. *Fomes conchatus* (Pers.), Fr., may sometimes be found entirely resupinate, forming a thin partly concave shell-like layer, 1 to 2 or more mm. thick, the pore surface Snuff Brown (XXIX.), the tubes forming a distinct layer, the subiculum more tawny (near Antique Brown, III.), as is the underlying penetrating mycelium, pores minute, 5 to 7 in 1 mm., spores hyaline, 5 μ., 4 x 3.4 μ. (Rea gives them as ferruginous, Lloyd as hyaline), setæ dark brown, acuminate, with bases sometimes broadened, 19 to 32 x 7 μ., sometimes not found. N.S.W.—Tuggerah, October, 1914.

492. *Poria uncinata*, Weir, n. sp.—Forming raised masses 9 x 5 cm. or more in size and 1.5 cm. thick, the edges raised and subdeterminate, in colour a little darker than Brussels Brown (III.), on section more gilvous in parts and near Antique Brown (III.), covering the charred surface of an old stump. The fungus is moderately heavy, not extremely light. Sterile portions are subvillose. Tubes mostly short (about 2 mm.) and the subiculum considerable passing into the interpenetrating mycelium. Orifices minute, about 4 to 5 in 1 mm., a little angular, dissepiments rather rounded. Spores hyaline, subspherical, 5.5 x 3.7, 3.5 μ. Hyphæ yellow-brown, thick-walled, calibre a little irregular, usually about

2.5 μ., sometimes 3 μ. Setæ dark brown, thorn-like, with broad, sometimes flattened bases and acute or blunt ends, sometimes definitely hooked, thick-walled, 17 to 30 x 5 to 7.5 μ. at the bases. N.S.W.—Milson Island, Hawkesbury R., March, 1915.

Dr. James R. Weir referred a portion sent to him to *Fomes rubiginosus*, Berk., adding a note as follows:—"*F. "rubiginosus*, Berk., not Wallr., and *F. robinsoniæ*, Murr., "belong to a group which are characterised by hooked setæ. "In this group are found specimens that are usually referred "to *F. korthalsii*, Lev., *F. senex*, Nees et Mont., and *F. tor-"ulosus*, Pers. If the above is a constant character and the "specimens cannot all be referred to *F. rubiginosus*, Berk., "they should be separated under some such name as *F. "uncinatus*." We believe our plant is not *F. rubiginosus*, which moreover has not yet been found within some hundreds of miles from this locality, and so accept the name Dr. Weir has suggested as applied to a *Poria*.

493. *Poria subweirii*, n. sp.—Forming extensive patches, 10 cm. or more in extent, up to 20 mm. thick in the centre, thinning to 1 or 2 mm. at the edge, subdeterminate, the tubes, usually forming most of the thickness, near Argus Brown (III.), the context gilvous near Buckthorn Brown (XV.). Orifices of the tubes about 2½ in 1 mm., irregular, the thin dissepiments often defective so that one orifice is continuous with a neighbour. In the substratum and also in the tubes, whitish hyphal strands (perhaps adventitious) are interspersed in the gilvous matrix. Setæ brown, long, pointed, 64 to 72 x 8 μ. at the base. Spores not seen. S.A.—On dead *Casuarina stricta*, Ait., Mt. Dutton, E.P., May, 1923. Identified by the late Dr. C. G. Lloyd as "*Poria* near *P. "weirii* but unnamed." The plants are relatively light, but not so much so as the American *P. weirii*.

494. *Poria friesiana*, Bres., is described by Bourdot and Galzin (Bull. Trim. de la Soc. Mycolog. de France, 1925, XLI., p. 243) as widely extended, 5 to 20 cm., in a plaque or pad, 0.5 to 2.5 cm., the subiculum thin or almost none, bright cinnamon to umber cinnamon, the border almost none or pubescent fawny cinnamon, the tubes stratified up to 7 mm. long, the pores fine, 4 to 5 in 1 mm., rusty cinnamon, umber or tobacco-coloured with a greyish pruinosity, hazel, mycelium pale fawn or sulphur, spinules usually absent, spores hyaline, then pale cream, subglobular, 6.5 to 8 x 5 to 6.8 μ. The spores when long in the tubes may become brownish.

We refer the following Tasmanian specimens, of which we have some half-dozen collections, to this species. The plants are variable, sometimes thin, sometimes thick (even in the same collection), and without obvious setæ. The spores were easily found in the Tasmanian plants and some were always tinted. A variable species forming usually thin patches, 1 to 3 mm. thick and up to 12 x 2.5 cm. in size, sometimes thicker plaques up to 7 mm. thick with the tubes stratose, the border often fairly defined and slightly raised, sometimes with outlying islands, the sterile edge almost absent or narrow and pubescent, the pores often oblique, when horizontal minute, 4½ to 5 in 1 mm., in colour near Sudan Brown (III.) or more gilvous, the older pores becoming darker near Brussels Brown (III.), sometimes very dark, the hyphæ yellow brown, sometimes varicose, 2 to 4.2 μ. thick, spores subspherical or subspherical triangular with a small gutta, 6 to 7 x 5 to 5.5 μ., 5.5 to 6.5 μ., usually hyaline but often slightly, sometimes decidedly, brown, two doubtful setæ seen. Tasm. (L.R.)—Cascades, June, July, August, 1919. We also refer here a specimen from Staughton Vale, Brisbane Ra., V., November, 1923. We place provisionally under *P. friesiana* a brighter coloured plant from Macquarie Pass, N.S.W., August, 1917—near Sayal Brown (XXIX.), darker and more ferruginous in certain lights, one short-brown seta seen, 19 x 7.6 μ., occasional subspherical hyaline or yellow-brown spores 4.5 to 5 μ.

495. *Poria carteri*, Berk. (Grev., 1886, XV., p. 25), is described as "ferruginous, effused, very thin, light, with the "margin scarcely strigose, the tubes short, pores punctiform, "round, equal, very minute, the dissepiments thick. Bombay. "The pores much smaller than any other of the ferruginous "species." Dr. Weir has identified for us a specimen as this species. It forms a thickish hard adherent patch, about 6 x 5 cm. and 6 mm. thick in the centre, Ochraceous Tawny to Buckthorn Brown (XV.), the tubes oblique, the pores very fine about 5 in 1 mm., the subiculum less than half the thickness, hyphæ yellow-brown, usually about 3 μ., setæ not seen. N.S.W.—Katoomba, December, 1916.

Forming large thick patches, 10 cm. or more long and up to 1.5 cm. thick, Fomes-like, consisting mostly of the pores, the context relatively narrow, the tubes near Argus Brown (III.) not so yellow as in Weir's specimen, the orifices Warm Sepia to Bistre (XXIX.) and darker, also not so yellow as in Weir's plant. The tubes are 7 to 13 mm. deep, the

orifices nearly sealed up and very minute, about 6 in 1 mm., regular, the dissepiments rather rounded. The plant shelves towards the determinate edge with a broad sterile almost crusted surface of the same colour as the pore orifices and up to 2 cm. wide. Hyphæ yellow-brown, thick-walled, 2 5 to 3 μ. in diameter. Setæ not seen. Spores white, subspherical, 5 to 6 μ. Bunya Mts., Q., October, 1919.

For lack of means of adequate differentiation, we refer also to this species a specimen from Katoomba, N.S W., December, 1916. This is also a thick brown *Poria*, apparently without setæ. It is not so heavy as the Bunya Mts. specimen, is Ochraceous Tawny to Buckthorn Brown (XV.), is up to .8 mm. thick, the tubes forming about half of the thickness, the orifices are also very minute, about 5 in 1 mm., and the yellow-brown hyphæ are usually about 3 μ. thick.

496. *Poria brunneo-adherens*, n. sp.—Forming extensive (10 to 20 cm.) brown determinate patches intimately adherent to the underlying wood and very difficult to detach, thin at the periphery but in old plants up to 4 mm. thick in the centre. The colour varies as viewed from different angles and reflected by the glancing mouths of the tubes from near Wood Brown (XL.) or lighter than Cinnamon Brown (XV.) to darker than Prout's Brown (XV.), when old becoming a very dark brown, on section near Cinnamon Brown. Pores exceedingly minute, about 6 to 7 in 1 mm., often oblique, shallow near the edge, the dissepiments thin and not setulose. Subiculum very thin, most of the substance being composed of the old filled tubes. Hyphæ yellowish-brown, 2.5 to 4 μ. Occasional short, acuminate, dark brown setæ found (6 x 3, 11 x 4, 30 x 7 μ., etc.). Spores hyaline, subspherical, 5 x 3.7 μ. Forming extensive patches on the undersides of old logs. S.A.—Inman Valley, January; National Park, July, August (spores 3.5 to 5 μ.).

The chief characteristics of the species consist in the extensive intimately adherent dull brown patches becoming very dark when old, in the minute size of the pores and their glancing mouths and the difficulty in finding the short dark brown setæ. The specific name refers to the colour and to the intimate adherence of the plant to the underlying matrix.

Poria luteo-fulvus, n. sp.—Forming patches up to 12 x 2 cm., up to 2 mm. thick, the surface between Chamois (XXX.) and Warm Buff (XV.), becoming Tawny Olive, on section

Ochraceous Tawny (XV.), the pores very oblique, lacerated, about 3 in 1 mm. The substance turns brown when bruised. Hyphæ yellow brown, thick-walled, rather irregular in calibre, 4 to 6.5 μ. Part of our collection was submitted to Dr. James R. Weir, who reported:—"Poria sp. probably not named, "spores elongate ellipsoid hyaline, setæ large strikingly *un-* "*cinate*, may be seen with a hand lens; in group with *Poria* "*cryptacantha*, Mont. (*P. cerea*, Berk.)." We have not been able to detect these setæ, which must be few in number.

Poria tasmanica, n. sp.—Forming a thin patch, about 3 x 2 cm. in size, up to 5 mm. thick in the centre, the edges somewhat raised in places and velutinate, very light in weight and soft to the touch, near Argus Brown (III.), the tubes about 2.5 mm. deep, the subiculum about the same, the pores large and varying in size, 2 to sometimes 3 in 1 mm., the dissepiments thin and fibrillose, hyphæ brown and up to 5.5 μ. thick, spores tawny brown, oblique, flatter on one side, 5.5 to 7.5 x 3.7 μ., setæ not seen. Tasm.—On fragments of (apparently) charcoal, Lindisfarne, January, 1921.

Fomes lividus, Kalchb.—Forming extensive patches up to 20 x 9 cm., with the edge usually sharply defined. Pores minute, about .16 mm. wide, about 6 in 1 mm., pore layer 3 to 7 mm. deep. Hymenial surface when young near Putty Colour (Dauthenay, Pl. 311) or greyer, or darker and greyer than Flesh Colour (Dauth., Pl. 67); when older, becoming near Fuscous (Ridgway, XLVII.), passing into Drab (XLVI.) and thence to the paler edge; when very old, sometimes blackish fuscous on which fresh patches of the greyish putty-coloured younger growth may appear. Tubes near Drab or darker or more fuscous than Natal Brown (XL.), sometimes showing grey tints. Context purplish fuscous, very thin, 1 to 1.5 mm., firm-floccose like compressed cotton-wool, sometimes appearing beyond the hymenial area as a dark livid brown scorched-looking sloping edge. Hyphæ microscopically of a rather livid fuscous brown, a little irregular, 2 to 5.5, usually about 3.5 μ., thick. Spores white, subspherical to irregularly oval or rather quadrilateral, 5 x 3.5 μ. Q.—Imbil State Forest, near Gympie, August, identified by Miss Wakefield, No. 14; on dead *Acacia*, Bribie Island, Moreton Bay, September. N.S.W.—Milson Island, Hawkesbury R., on fallen logs and dead branches, January, February, March (Miss Wakefield, No. 29), November; Kew, March, October; Terrigal, June; Lismore, August (Miss Wakefield, No. 30); Taree, January.