

BOTANICAL NOTES.

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In submitting the following for publication in the Papers and Proceedings, it is desired to add to the formal work an expression of thanks to the Director of the Royal Herbarium at Kew for determination of many of the fungi and the two lichens. It is entirely due to his help at a strenuous time that the descriptions have been available for this year's volume.

Pterostylis praeox, Lindb., is rather common in Tasmania. Hitherto *P. concinna*, R. Br., has only been recorded from near Richmond, near Bellerive, and on a hill at Wedge Bay. In the last two places it was growing with *P. praeox* and in each instance, intermixed with typical forms of the two, were intermediate specimens, apparently hybrids. Prof. A. J. Ewart considers this intermediate may be treated as a distinct species, and in a recent publication of the Royal Society of Victoria, from material gathered in that State, named it *Pterostylis toveana* in honour of Mr. Tovey, of the National Herbarium of Victoria, who has done excellent work in Australian botany.

Amongst mosses:—

Pottia (Eupottia) subphyscomitrioides, Broth. In Proc. Linn. Soc., N.S.W., vol. 61, p. 582.—Very similar to *Pottia tasmanica*, Broth., only the nerve excurrent in a short stiff point and the margin less recurved.

Port Esperance on ground. Also in Victoria.

Probably not rare but overlooked from its small size and resemblance to *Weissia*.

In the same paper Dr. Brotherus describes a robust *Fissidens* gathered at Moss Vale as *Fissidens rigidiusculus*, Broth. n.s., and he reduces our *F. leptocladus*, C.M., to a variety of it. It is possible all students will not follow in this.

To our Hepatics may be added:—

Plagiochila wattsi, St.—Shoots simple or with few irregular branches, decumbent, about 1-2 cm. long, apex rather circinate. Leaves imbricate, dorsally secund, deltoid, the dorsal margin strict, the ventral strongly ampliate, apex of most leaves bifid, lobes acute, margin otherwise plain, base not at all decurrent, 1 mm. Cells 21 μ ., trigones rather large, convex. Sterile.

On *Fagus* log, Pioneer track, Blue Tier (Weymouth). Determined by Stephani.

Very distinct from any other Tasmanian *Plagiochila*.

Fossombronia dentata, St., f. *robusta*.—Robust, superficial, mostly dark red to almost black, 2-4 cm. long. Leaves crowded, imbricate broadly oblong, armed with few distant subulate marginal teeth, 5 mm. long; cells 60-90 x 40 μ , but very irregular in size, trigones concave. Sterile.

Very much larger than the typical *F. dentata*, but agreeing otherwise in all details.

On wet Heaths, Cradle Mt

We are slowly adding to our list of Fungi, and many hundreds of forms, mostly minute species, have yet to be described. The following may be of unusual interest to students:—

Marasmius equicrinis, Muell.—The stipe and mycelial strands are black, shining like horsehair and often many feet in length. Pileus pale, minute.

Found occasionally in wet scrub.

Strobilomyces pallescens, C. et M.—Pileus pale tawny, mostly 10 cm. diameter, coarsely warted. Hymenial tubes yellow, long. Turning deep blue when broken.

East Coast from Freycinet Peninsula to Wedge Bay.

Polysaccum microcarpum, C. et M.—Peridium globose continuous with a broad stem, usually about 6 cm. long, yellowish brown. Peridiola dark brown, small, angular, about 2 mm. diameter. Spores spherical, minutely warted, 6-7 μ diameter.

Found occasionally in sandy soil.

Hysterium gahnianum, n.s.—Black, linear erumpent, seldom exceeding 1 mm. in length, opening by a narrow slit. Asci clavate 8-spored. Spores fusiform to linear 36 x 4-5 μ , 6-9 septate, smooth, dark brown at maturity.

On dead leaves of *Gahnia psittacorum*. Hobart.

Aulographum proteacium, n.s.—Black, oblong, erumpent, on a discoloured patch about 0.5 mm. long, opening by a narrow slit. Asci broadly obovate, 8-spored. Spores hyaline, uniseptate, oblong to obovate, the upper section usually the larger, smooth, 14 x 6 μ .

On leaves of *Cenarrhene nitida*. Trowatta.

Aulographum eucalypti, C. et M.—Narrow linear, often branched, gregarious on discoloured spots, black 0.5-1 mm. long. Asci clavate 8-spored. Spores oblong, 1-3 septate, hyaline, smooth 14 x 6 μ .

Common on fading leaves of *Eucalyptus obliqua* and allies. Also recorded from Victoria.

Tryblidiella biconica, n.s.—Black, fleshy, densely caespitose, the cups distorted from mutual pressure, each 1-2 mm. diameter. Asci clavate, 8-spored. Spores hyaline, smooth, uniseptate, ends subacute $17 \times 7 \mu$. long.

On bark of *Phyllocladus rhomboidalis*. Mt. Wellington.

Nemacylus gilvus, n.s.—Ascophore minute, 0.2-0.5 mm. immersed, bursting through the cuticle, waxy, pale yellow, oblong almost 2-lipped, margin rudimentary. Asci clavate, spores long slender, pale, arranged in a fascicle, breaking down on maturity into numerous globose articles. Near *Propolis* and *Stictis*.

On *Lepidosperma laterale*. Cape Frederick Henry.

Calloria tasmanica, n.s.—Ascophore gelatinous, orange, concave when young, convex when mature, paler externally, sessile, smooth, 1-3 mm. diameter. Asci clavate 8-spored. Spores hyaline, slender, curved smooth $6-10 \times 1-1.5 \mu$, uniseptate.

On trunk of *Dicksonia*, Trowatta.

Phialea berggrenii, C. et P.—Very small, usually under 1 mm., on a slender stalk, mouth rather constricted, pallid. Spores elliptic $10-13 \times 3-5 \mu$.

On dead leaves, Wedge Bay.

Erinella apala, Mass.—A minute *Peziza* resembling a *Dasycephala*, only the spores are filiform multiseptate, and breaking in a fascicle in the ascus. Disc pale, about 0.1 mm. diameter, shortly stalked, externally pilose.

On dead rushes.

Described in Masee's Fungus Flora.

Phragmidium potentillae, Pers.—It is very common in Tasmania on the leaves of both species of *Acacia*.

Phragmidium subcorticium, Schr., is common on Sweet Briar.

Hendersonia eucalypti, C. et H.—A sphaerioid parasite common on Eucalypt leaves. It is responsible for the discoloration of immature leaves of *Euc. globulus* and *Euc. viminalis*.

Leptosphaeria coniothyrium (Fel.), Sacc.—A sphaeriaceous parasite doing much harm to our roses and raspberries.

Endogone neglecta, n.s.—Small, mostly 3-6 mm. diameter, subglobose, pale growing on the surface rarely submerged, fleshy or almost waxy-floccose, peridium thick, the interior packed with spherical asci $30-50 \mu$. diameter, pale green or hyaline, smooth.

On deadwood slopes of Mt. Wellington.

Endogone is now placed in the *Protomycetaceæ*. The spherical asci do not develop spores till after a period of rest, possibly after liberation due to rotting.

Endogone australis is larger, denser, and the asci are much larger and apparently chitinous, giving the appearance of egg masses. The spores have not been seen. It also appears to be always subterranean. Found occasionally in gullies.

Elaphomyces citrinus, Vitt.—Globose, subterranean, about 2 cm. diameter, covered with a yellow or greenish mycelium incorporating soil. Cortex dark surface, thick white. Gleba fleshy. Asci globose, 8-spored. Spores globose, greenish-black, surface minutely reticulated, 14.5 μ . diameter.

Close to but distinct from *E. leveillei*, Tul.

Wedge Bay, in sandy heaths.

Balsamea platyspora, Berk.—Subterranean, irregularly globose, 1-1.5 mm. diameter. Cuticle brown, closely tubercular. Substance fleshy, brown, marbled. Asci subglobose, 8-spored. Spores elliptical, hyaline, very obtuse, 23 x 14 μ ., smooth.

Under *Abutilon* in garden.

Polyporus sclerotinus, n.s.—Sclerotium oblong or subglobose, 2-3 cm. diameter, pure white, densely pithy or corky, formed of closely interwoven hyphæ. Sporophore erect dimidiate about 2 cm. high, formed of few or many very irregular branches or pilei borne on a short stalk. Upper surface black smooth or longitudinally striate. Under surface white, pores very irregular, about 0.2 mm., diameter dissepiments rather obtuse.

Differs from *P. myllite*, C. et M., in small size, black sporophore and very different sclerotium structure. Found occasionally in gravelly earth at a considerable altitude on Mt. Field.

Cyphella globosa, n.s.—Spherical, rather convoluted, erect or pendulous, 4-10 mm. diameter, on a slender stalk 2-4 mm. long; mouth small, very constricted. White, thin, externally delicately tomentose with very short bullate hairs. Spores hyaline, broadly oblong, 6 x 4 μ .

On soft bark of *Olearia argophylla*.

Slopes of Mt. Wellington.

Phyllachora callistemoni, n.s.—Stroma black, shining, mostly orbicular and about 1 mm. diameter, usually many on discoloured spots, on both surfaces. Perithecia numerous completely immersed. Asci cylindrical 8-spored. Spores oblong, obtuse smooth, hyaline 18-20 x 7 μ .

In the spring, associated with the stroma and often forming minute pustules which burst irregularly through the epidermis, a sphaeropsidial form makes its appearance. The spores are narrow spindle-shaped, $33 \times 5-6 \mu$, slightly curved, 3-4 septate, the central cells pale greenish, the terminal cells hyaline; at each end are two diverging bristles, though in old material only one is usually to be made out. This is probably identical with *Hyaloceras dilophospora*, Cooke, recorded as occurring on leaves of *Leptospermum scoparium*.

Chinney-pot Hill, Hobart; Gordon.

Hymenogaster fulvus, n.s.—Irregularly globose from 1-4 cm. diameter, black. Peridium very thin; sterile base small to obsolete. Gleba yellow, fleshy. Canals numerous contorted. Spores oblong, very obtuse, brown, smooth $6-8 \times 3 \mu$.

Differing from *H. albellus* in the small spores and from *H. levisporus* in the spores oblong instead of subglobose.

Near Strahan.

Hysterangium pumilum, n.s.—Numerous, caespitose, globose, pale, 2-3 mm. diameter. Peridium thin horny. Gleba gelatinous pale, transparent. Canals relatively large, not crowded, little convoluted. Spores smooth, hyaline, fusiform $12 \times 4 \mu$.

Differing from *H. affine*, var. *teuuispora*, by small size, caespitose habit, pale gleba and broader canals.

Wedge Bay. In sandy heath.

Hysterangium burburianum, n.s.—Globose about 1-2 cm. diameter. Peridium rather thick fleshy, horny when dry. Gleba brownish green gelatinous. Canals very numerous, convoluted, walls thin. Spores smooth oblong, obtuse. $5 \times 3 \mu$.

Differs from *H. affine* by paler gleba, more numerous canals with thinner walls and smaller more obtuse spores. Gathered at Launceston by Mr. F. E. Burbury. The spores are very similar to those of *Hymenogaster fulvus*, but are paler and the gelatinous gleba is very distinct.

Hysterangium inflatum, n.s.—Globose, reddish-brown, about 1 cm. diameter. Peridium fleshy, becoming horny when dry, not thick. Gleba blue-black, very gelatinous. Canals not crowded nor much convoluted. Spores narrow oblong, $12 \times 4 \mu$, but enclosed in an inflated coat, which is attenuated at the base, exceeding the spore above, but depressed in a pit at the apex.

With a darker gleba than in *H. affine* it has very different spores.

Mt. Wellington.

Gymnomyces flavus, n.s.—Subglobose but very irregular in shape and size, mostly about 5-10 mm. diameter, dull canary yellow when fresh, ochraceous when dry. No peridium, the surface floccose and pitted with sterile continuations of the hymenial canals. Canals numerous, broad, contorted, trama fleshy, yellow, walls thin. Spores spherical, hyaline covered with short broad spines, 10-11 μ . diameter.

Wedge Bay.

Those interested in the underground fungi in this may refer to my paper on *Hymenogastraceae* in the Papers and Proceedings, 1911.

PULVINARIA, N.G.

Stroma globose, crumpled mostly 3-5 convoluted, woody. Perithecia completely immersed dehiscing by a minute pore. Spores linear, hyaline, smooth.

The genus "differs from *Cytospora* in habit, from *Dothiorella* in spores, and from both in the nature of the stroma."—E. M. Wakefield, Kew.

Pulvinaria typica, n.s.—Gregarious, black, stroma 1-2 mm. diameter. Spores $5 \pm 0.3 \mu$.

Common on capsules and opercula of *Eucalyptus globulus*.

Mesembryanthemum equilaterale is very commonly attached by a *Cytospora*. The oospores have not yet been found, but it is referred to in a note from Kew:—"Very near *C. austro-africanus*, Syd., but with larger conidia."

The two following Lichens have been determined by the Kew authority:—

Calicium trachelinum, Arch.—Thin, white, granulose. Apothecia minute, black, on a slender stalk about 1 mm. high. Spores sooty black, ellipsoid, 1 septate, constricted obtuse, sometimes continuous, $6.6 \pm 3.3 \mu$

On stem of dead *Richea pandanifolia*.

Mt. Styx.

Lichina alpina, n.s.—Brownish-black, densely caespitose, terete and copiously branched, gelatinous when fresh, brittle when dry. Apothecia terminal, globose, little broader than the stem about 0.3 mm. diameter; spores elliptic, smooth, 7-8 μ long. Alga apparently an *Anabaena*.

In running water and on rocks at Cradle Mountain, 3,500 feet, approximately.