

A PARASITIC MEMBER OF THE BOLBITIACEAE, *Agrocybe parasitica* sp. nov.

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A large parasitic toadstool commonly seen on endemic trees of the family Malvaceae, namely *Plagianthus betulinus* and species of the genus *Hoheria*, causes a heartrot slowly destroying the host which bears a more or less annual crop of sporocarps. Less commonly it occurs also on the following dicotylous species: *Carpodetus serratus*, *Beilschmiedia tawa*, *Laurelia novaezelandiae*, *Alectryon excelsum*, *Melicytus ramiflorus*, *Corynocarpus laevigatus*, *Dysoxylum spectabile*. The writer has one report only of its occurrence on *Nothofagus*. On *P. betulinus*, *Hoheria* spp., and *C. serratus* the toadstools may arise in tunnels of puriri moth larvae and grow out from flight holes. Occasionally a sporocarp arises singly from a crack or wound in the bole of the host but commonly a clump of 3-6 together is found. The fungus does not persist for any length of time on the dead wood.

One *P. betulinus* tree on the campus of Victoria University in Kelburn Parade, Wellington, has been seen to be infected for over 30 years. Formerly it was a spreading tree about 12 m tall but gradually many branches have died and been cut out till the remaining tree is now less than half its former size and is visibly ailing. Sporocarps used to grow out high on the trunk but in the last 6-8 years have sprouted from a cleft between roots at the base.

As this parasite is fairly common on *B. tawa*, a commercial timber tree, its presence should be noted. By the time any toadstool is seen on a tree a heartrot is likely to be well advanced and it may be advisable to remove the whole tree. Where it is common on malvaceous trees associated with regeneration of podocarps it could serve a useful purpose in suppressing old nurse trees. It has never been seen on any podocarp and as many other fungi which grow readily on hardwoods do not attack podocarps, one would not expect to find it attacking the main crop.

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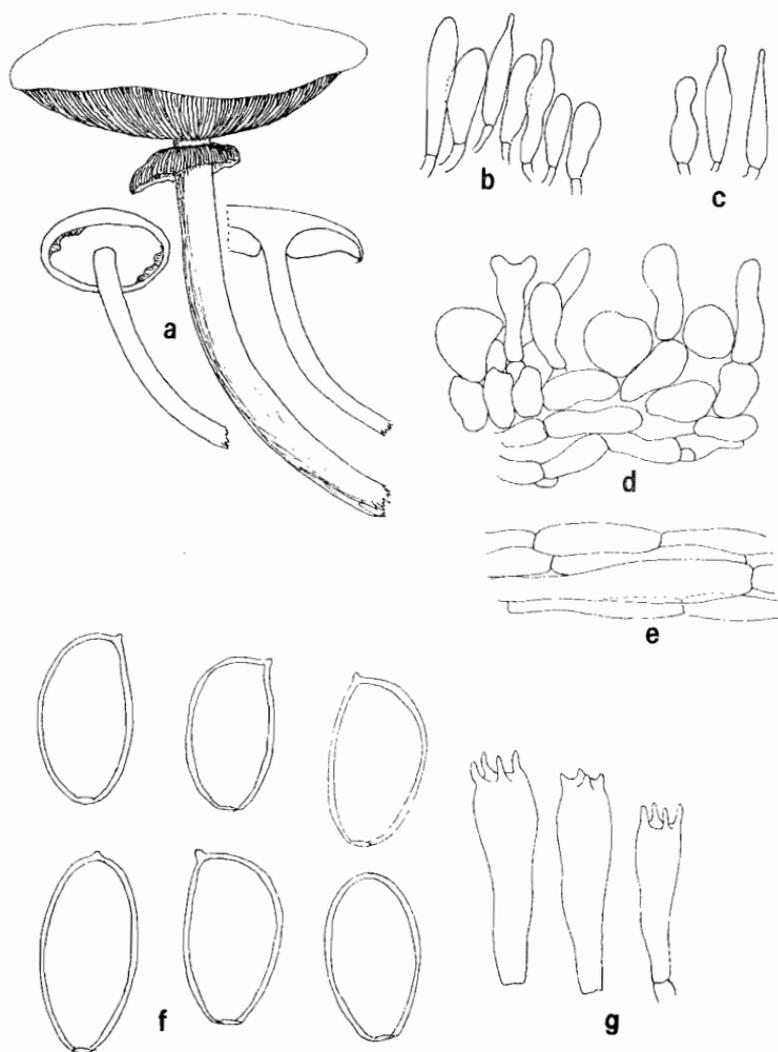


FIG. 1: *Agrocybe parasitica* sp. nov.

- a: sporocarp $\times \frac{1}{4}$. b: cheilocystidia $\times 500$. c: pleurocystidia $\times 500$.
 d: cuticle $\times 500$. e: gill trama $\times 500$. f: spores $\times 2000$.
 g: basidia $\times 1000$.

Agrocybe parasitica Stevenson sp. nov.

(Fig. 1) Typus: Stevenson 82/3

Pileus 5-25 cm diam. pallide bubalinus, medio intensius coloratus, argillaceo-bubalinus vel spadiceo-brunneus, plano convexus, sicco-velutinus demum laevigato-coriaceus, interdum centro fatiscens, nonnumquam velo annulari membranaceo fugaci appendiculatus, caro alba, firma. *Lamellae* adnexae vel adnatae, argillaceo-bubalinae, marginibus albis conspicuis, multae breves subconfertae. *Stipes* 8-20 × 1-2 cm pallide bubalinus supra annulum, argillaceo-bubalinus infra vel fuscior, velutinus, grosse striatus, vel squamis appressis, plus minusve aequalibus, tenacibus, solidis, supra carneo-albis, infra pallide brunneis vestitus. *Velum* in lamellas evolventes premens dum pileus bene expanus est in forma annuli validi superioris plicati cadens atrobunneis sporarum depositis striatum. *Sporae* 9-12.1 × 6-7 μm parietibus crassis, poro conspicuo, in cumulo umbrinae. *Cheilocystidia* congesta, parietibus tenuibus, hyalina; *pleurocystidia* similaria, dispersa. *Odor* gravis, putidus.

Pileus 5-25 cm diam. pale buff darker at centre to clay buff date brown at centre, plano-convex, dry velvety becoming smooth leathery, some with adhering velar remnants on the margins, flesh white firm. *Gills* adnexed to adnate, clay buff with conspicuous white margins, moderately crowded with many short members. *Stipe* 8-20 × 1-2 cm pale buff above ring clay buff or darker below, velvety, coarsely striate or with appressed scales, more or less equal, tough, flesh white above light brown below. *Veil* pressing against developing gills till the pileus is well expanded, falling free as a substantial superior pleated ring striated with a dark brown spore print. *Spores* 9-12.1 × 6-7 μm thick-walled with conspicuous germ pore, print umber. *Smell* strong sour.

Habitat: parasitic on certain hardwood trees in New Zealand — e.g., on standing dead *B. tawa*, Lake Papaitonga, Levin, 18.6.49, G.S.; on living *B. tawa*, Levin, 30.1.51, E. C. Parsons; on living *P. betulinus*, Ohau River, 26.1.52; on living *M. ramiflorus*, Totaranui, 12.4.55, both G.S.; on living *Hoheria* sp., Wairoa Gorge, 28.4.56, D. Read; on living *B. tawa*, Hutt Valley, 8.5.74; on standing moribund *P. betulinus*, Hutt Valley, 3.2.75; on *Hoheria* sp., and on *P. betulinus*, Kelburn Parade, Wellington, 7.3.75; on living *Hoheria* sp. growing from moth flight holes, Apiti, 24.4.78, all G.S.; on living *A. excelsum*, Lake Pounui,

13.5.78; on living *Nothofagus solandri*, Wainui-o-mata, 13.3.80; on *C. laevigatus*, Wairarapa, 25.4.80, all J. Grehan; on living *L. novaezealandiae*, Hutt Valley, 6.12.80, I. Lewington; on living *D. spectabile*, Pukerua Bay, 21.6.81, G.S.; on recently felled *P. betulinus*, Riccarton Bush, 10.3.82, type, G.S.

Colours given are taken from the Colour Chart of the Flora of British Fungi. I am grateful to Dr Elizabeth Edgar who wrote the Latin description. Copies of S.E.M. photographs taken by Mrs K. Card show spores x 10 000 to have a smooth outer wall, with the germ pore showing as a dimple; copies are filed with the type.