

## BRIEF NOTES ON *HEBELOMA AMINOPHILUM* R.N. HILTON & O.K. MILLER ('GHOUL FUNGUS') FROM NORTHERN QUEENSLAND AND TASMANIA

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### Abstract

New Australian records and information are provided for *Hebeloma aminophilum*. The Australian distribution includes tropical eucalypt forests and woodlands near Koombooloomba Dam and the Herberton Range in northern Queensland as well as cool temperate heath in Tasmania. A colour image of the species is included. All collections are held in the Queensland Herbarium (BRI).

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### Introduction

The 'Ghoul Fungus', *Hebeloma aminophilum* R.N. Hilton & O.K. Miller, has been noted in various publications. Hilton (1978) described how large numbers of fruiting bodies of an unknown species of *Hebeloma* were found growing amongst the remains of a dead snake, while Miller & Hilton (1987) formally described the species from Western Australian material and noted how the taxon was invariably associated with 'decaying animal matter' (the holotype material was collected from amongst kangaroo bones). Griffiths (1985) reported *H. aminophilum* from the south-west of Western Australia where he also found it amongst kangaroo remains. Griffiths also provided a very good watercolour of the species. Syme (1992) noted that the species had been found at Two Peoples Bay on the southern coastline of Western Australia, while Bouger & Syme (1998) described the taxon's sarcophilous habit in Western Australia and provided another very good watercolour of the fruiting bodies. Brief notes on the sarcophilous habit of the 'ghoul fungus' and its relationships to north American members of the same genus were provided by Watling (1985).



**Figure 1.** A colony of *Hebeloma aminophilum* fruiting bodies amongst the remains of a small marsupial in the Herberton Range area, north Queensland. Photo. A.M. Young.

### Discussion

A quantity of *Hebeloma aminophilum* was gathered from amongst the bones of a small marsupial (wallaby?) in May 1999 while collecting on the Tasman Peninsula in Tasmania. This is thought to be the first published record of the taxon for that State. In addition, other information given to the author (B. Fuhrer, pers. comm.) indicates that *H. aminophilum* is quite widespread in Victoria and has been seen on sites enriched by a variety of animal remains (including deer, kangaroo, an echidna and a snake). Unusual occurrences include where a bush barbecue has been held and the fungus has been found on soil amongst the animal bones discarded from the meal.

All the above records are relevant to Victoria, Tasmania and south-western Western Australia. However, *Hebeloma aminophilum* has now been found in tropical Queensland at two widely separate locations. The first collection in the vicinity of the Herberton Range was made from amongst the bones of a small marsupial (most probably a wallaby) which had been killed by road traffic. The fruiting bodies grew in abundance directly on the enriched soil underneath where the corpse had decayed and emerged from amongst the animal bones. The second collection was made at Koombooloomba Dam area, at least 50 km distance from the first site where similar fruiting bodies had emerged from amongst the bones of either a cow or a bullock. The first collection was made from open woodland with 'heath-like' vegetation at the road-side; the second collection was made from open forest. Each of these locations was based on granite substrata. Both the Queensland collections (as well as the Tasmanian material) have been deposited in the Queensland Herbarium (BRI).

The north Queensland collections exhibited the usual macro-characters of the species with 'sticky', brownish convex pilei and pinkish brown, adnexed to sinuate lamellae. The spore print was recorded as pinkish brown. Preliminary microscopic examination has shown the presence of verrucose spores [(8-) 9–11 (–11.5) × 5.5–6.5 (–7.5) µm; holotype 8.2–10 × 4.5–6 µm] identical to those depicted in both Miller & Hilton (1987) and Bouger & Syme (1998). The lamellae margins also displayed the rostrate-ventricose, thin-walled, hyaline cheilocystidia [30–90 × 5–8 µm; holotype 40–52 × 6–9 µm, but also compare Bouger & Syme(1998) 32–80 × 3–10 µm]. The differences are not considered significant. The north Queensland collection has basidia measuring 22–31 × 6–8 µm while the holotype is recorded as having basidia 24–27 × 5!6.5 µm, but also compare Bouger & Syme(1998) 30–38 × 6–8 µm. Again, these differences are not considered significant. There are also pleurocystidia present in the Queensland material and these are identical to the cheilocystidia other than being a little shorter (usually under 50 µm). The Queensland collections conform quite well with the current concepts of the taxon.

The tropical Queensland collections indicate that *Hebeloma aminophilum* has a far wider distribution than formerly known. Previous collections suggested a southern distribution, however the Atherton Tableland collections suggest that the species is probably Australian wide and occurs wherever an animal corpse provides suitable conditions.

**Material:** Tas. Tasman Peninsula, 25 May 1999, A.M. Young (Y2255) BRI. Qld. Atherton-Herberton Rd, 19 Feb 2001, A.M. Young & P.I. Forster (PIF26822) BRI; Koombooloomba (SF 605), 1 Mar. 2002, A.M. Young & P.I. Forster (PIF28455) BRI.

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