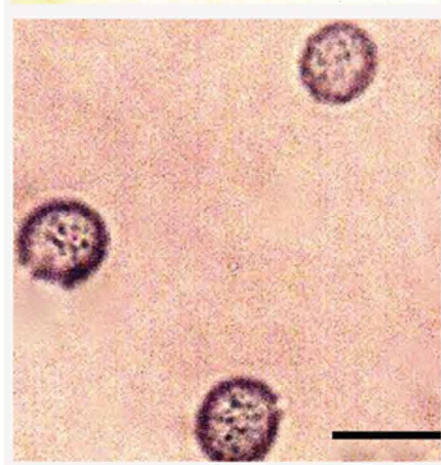
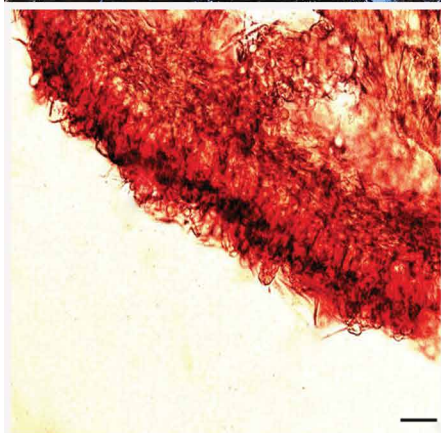


Lactifluus lactiglaucus



Fungal Planet 1159 – 19 December 2020

Lactifluus lactiglaucus P. Leonard & Dearnaley, *sp. nov.*

Etymology. *lactiglaucus* means green milk and refers to the colour of the latex.

Classification — *Russulaceae*, *Agaricales*, *Agaricomycetes*.

Pileus centrally depressed to infundibuliform, 60–100 mm diam; surface dry, slightly velutinate, sometimes rugulose, usually with dirt adhering, azonate, white with some buff colouration at centre; margins in-rolled at first. *Lamellae* subdecurrent, crowded, anastomosing, off-white, very narrow (< 2 mm), turning slowly greenish on bruising and finally dirty brownish after some hours, lamellulae absent. *Stipe* cylindrical, 40–60 × 12–18 mm, glabrous, stout, very solid, white, green blotched if injured. *Flesh* white, thick, exuding a thick latex. *Latex* white, quickly turning greyish green to pistachio green (29D4-5; Kerner & Wanscher 1978), turning orange or yellow with KOH. *Smell* of honey or baked bananas. *Spore print* white. *Spores* subglobose, a few broadly ellipsoid, 6.8–8.4 × 5.5–7.4 µm, av. 7.3 ± 0.4 × 6.4 ± 0.5 µm, Q = 1.04–1.3, Qav = 1.15 ± 0.06; ornamentation of low, slowly amyloid warts with fine lines joined to them like flagella, forming a partial reticulum; plage inamyloid, 2 µm (some spores remaining inamyloid at least in dried material). *Basidia* narrowly clavate, 45–50 × 6–8 µm, sterigmata 2–3 µm long, 2- and 4-spored basidia present. *Pleurocystidia* numerous,

thin-walled, narrowly clavate, 50–60 × 8–10 µm, extending 10–15 µm beyond basidia. *Cheilocystidia* numerous, similar to pleurocystidia, forming an almost sterile layer along the gill edge. *Pileipellis* an unusual type of ixocutis, resembling the hyphoepithelium illustrated (G on page 21) by Hielmann-Clausen et al. (1998), hyphae in suprapellis only 3–4 µm wide. No lactifers seen in suprapellis.

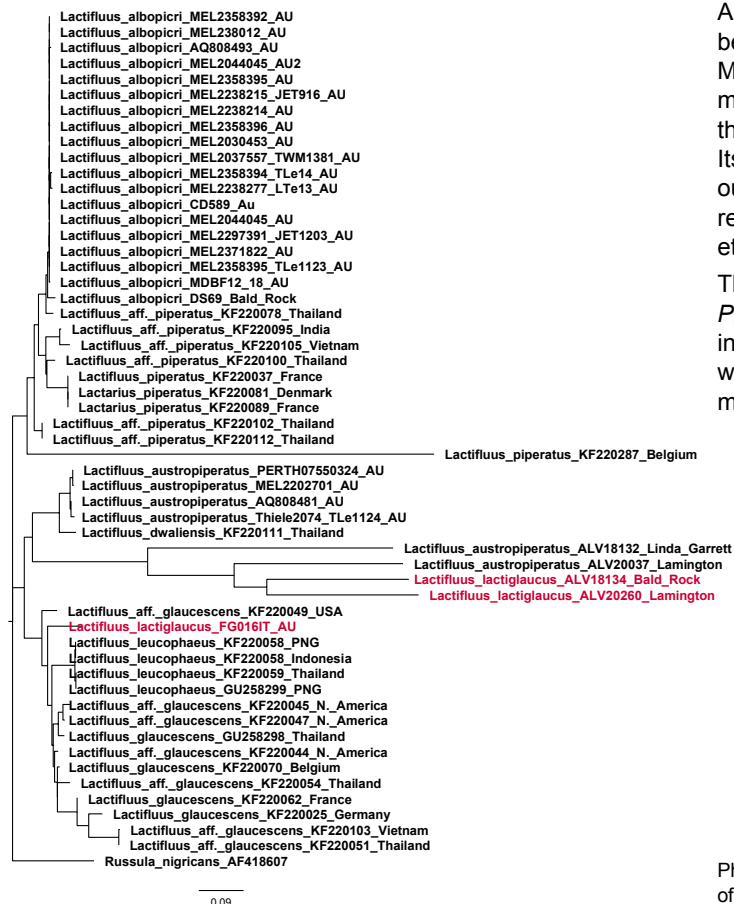
Habitat & Distribution — Gregarious in wet sclerophyll forest amongst leaf litter under *Eucalyptus* spp. So far only known from three sites in south east Queensland.

Typus. AUSTRALIA, Queensland, Lamington National Park, 30 Mar. 2019, P. Leonard, (holotype PL640319 in BRI, ITS sequence GenBank MW007669, MycoBank MB837537).

Additional materials examined. AUSTRALIA, Queensland, Bellthorpe, 21 Jan. 1985, T. Young, AQ646335 (BRI); New South Wales, Bald Rock National Park, 10 Apr. 2015, P. Leonard, PL630415 (BRI).

Notes — This robust white fungus with hot peppery milk that turns pistachio green should be readily recognised in the field, yet it is only known from three collections. The earliest collection was identified as *L. pergamenus*, a synonym for the European species *L. glaucescens*. The European species is found in deciduous forests on calcareous soils and is said to be rather rare despite being reported from Northern Europe, North America and Japan. The Queensland collections are distinct, being found with *Eucalyptus* s.lat. in wet sclerophyll forests. Morphologically they are distinguished by more abundant milk that is almost immediately green and microscopically by the spores that are more globose than the European species. Its separation from the European collections is supported by our molecular analysis that places it in the same clade as the recently published *L. austropiperatus* and *L. albopictus* (Crous et al. 2020a).

There appear to be at least four *Lactifluus* species in section *Piperates* in Australia. They all have predominantly white fruiting bodies, crowded gills, hot to acrid tasting latex, and spores with low (< 0.5 µm) ornamentation. *Lactifluus lactiglaucus* is the most readily recognised on account of its green latex.



Phylogenetic tree: Maximum likelihood tree of the ITS-nrDNA for a selection of *Lactifluus* species, aligned using MUSCLE and constructed using MEGA X.

Colour illustrations. Wet sclerophyll forest in south-east Queensland. Lower right sporocarp (holotype); lower centre right abundant green latex; lower centre left subglobose spores with low ornamentation; lower left pileipellis. Scale bars = 10 µm. All photos © Patrick Leonard.