Fungal Planet 1624 MycoBank MB 851804

Cortinarius magentiguttatus Syme & T. Lebel, *sp. nov.*

Etymology: Named in reference to the fine magenta-coloured particles and shards scattered across the pileus and lower stipe of the pale sporocarps, *magenteus* (L. for the colour magenta or red-purple), "*guttatus*" (L. for spotted or speckled).

Classification: *Cortinariaceae*, *Agaricales*, *Agaricomycetes.*

Basidiomata tricholomatoid habit, gregarious, sometimes caespitose, often in large groups, never solitary. *Pileus* 35–75 mm diam, broadly convex, becoming planoconvex then reflexed, margin finely inrolled, becoming plane, with a fine line of cortina (partial veil) strands forming a visible line around the edge as the pileus expands, or sometimes cortina remnants appendiculate, hanging down from pileus margin; pale tan to cream with scattered purple, mauve-lilac and faint orange patches or tinges, sometimes appearing almost white when remaining under leaf litter, becoming patchy pale apricot to pale yellowish brown in age and exposure; slightly viscid but drying with a fine, sandpapery feel, due to minute radiating lines of violet to rose magenta (11B4, 11D4, 12B4, 12C5, Kornerup & Wanscher 1967) particles or shards becoming dark and dull brown toward the margin, which appear more visible on exposure to sunlight. *Context* up to 12 mm thick, white, unchanging, firm, solid. *Lamellae* adnexed or adnate, narrow, very close, up to 10–13 mm long × 3–8 mm deep with one tier of lamellules, margin and face smooth, white to cream initially, remaining pale as pileus expands, then slowly becoming light rust (5C6). *Stipe* 25–58 mm long × 5–16 mm diam, stout, central, terete, tapering neatly at base or very slightly bulbous at base; surface dry to slightly viscid, longitudinally fibrillose, white above the cortina remnants, purple, magenta-lilac and orange-yellow at base and partially up length of stipe, at times forming jagged bands in the same colours (mauve lilac and orange-yellow), appearing glandular dotted below cortina from minute loose, violet to rose magenta (11B4, 11D4, 12B4, 12C5) particles or shards similar to pileus (most obvious in young buttons); context firm, solid, white and unchanging. *Basal mycelium* white. *Cortina* white, fine fragile, apparent in young sporocarps, breaking as the pileus expands to form a fine annulus approximately 2/3 up the stipe; universal veil white, leaving a basal ring of fine remnants as the pileus expands. *Odour* none or faintly floral. *Spore print* yellowish brown (5D6-7). *Spores* 7.5–10(–10.5) × 5–6.5(–7) µm, (mean 9.11 × 5.92, Q_m = 1.45), amygdaliform, rusty brown in 3 % KOH, very finely verrucose, ornamentation less than 0.5 µm high. *Basidia* 23–33 × 8–10 µm, clavate, hyaline, tetrasporic. *Pleuromacrocystidia*, *pleuropseudocystidia* and *cheilomacrocystidia* absent. *Hymenophoral trama* composed of parallel hyaline hyphae 4–7 µm diam. *Subhymenium* consisting of irregular cells, sub-gelatinised, 4–9 µm diam. *Pileipellis* duplex. A patchy outer gelatinised layer 15–25 µm wide, of loosely interwoven, hyaline, partially gelatinised, thin-walled narrow hyphae, 2–4 µm diam, overlying a 200–300 µm wide *epicutis*, of loosely interwoven hyaline hyphae 2–4 µm diam and rare sinuous encrusted hyphae, 4–6 µm diam, with hyphal tips occasionally upright; *hypocutis* 50–90 µm wide, of densely packed, magenta (H_2O) to golden brown (3 % KOH) pigmented, non-gelatinised, interwoven irregularly shaped hyphae, 4–8 µm diam. Scattered shards or aggregations 50–140 × 50–100 µm, of magenta (H_2O) to dark brown (3 % KOH) pigmented, thick-walled, septate hyphae, 6–12 µm diam, in shortish lengths 11–32 µm long or small irregular sheets 11–45 × 10–32 µm, occurring in outer gelatinised layer and into epicutis and also in stipitipellis; *context* 400–1100 µm wide, of parallel to somewhat interwoven, hyaline, non-gelatinised, hyphae 4–7 µm diam, intermixed with abundant irregularly shaped, hyaline inflated elements 8–30 × 5–20 µm. *Partial veil* of subparallel to somewhat interwoven, thin-walled, hyaline hyphae 2–5 µm broad. *Clamps* are medallion or keyhole type, occurring in all tissues.

Habit, habitat and distribution: Gregarious in large groupings of medium sized sporocarps, sporulating in deep leaf litter. Currently known from long undisturbed eucalypt forest and woodlands in southern Western Australia and South Australia.

Typus: **Australia**, Walpole, Walpole-Nornalup National Park, Bibbulmun Track east of Gulley Road towards Douglas Hill, 8 May 2018, *K. Syme, D. Edmonds & J. Wall*, KS2968 (**holotype** PERTH 9624236, **isotype** AD 293967; ITS and LSU sequences GenBank PP151603 and PP151609).

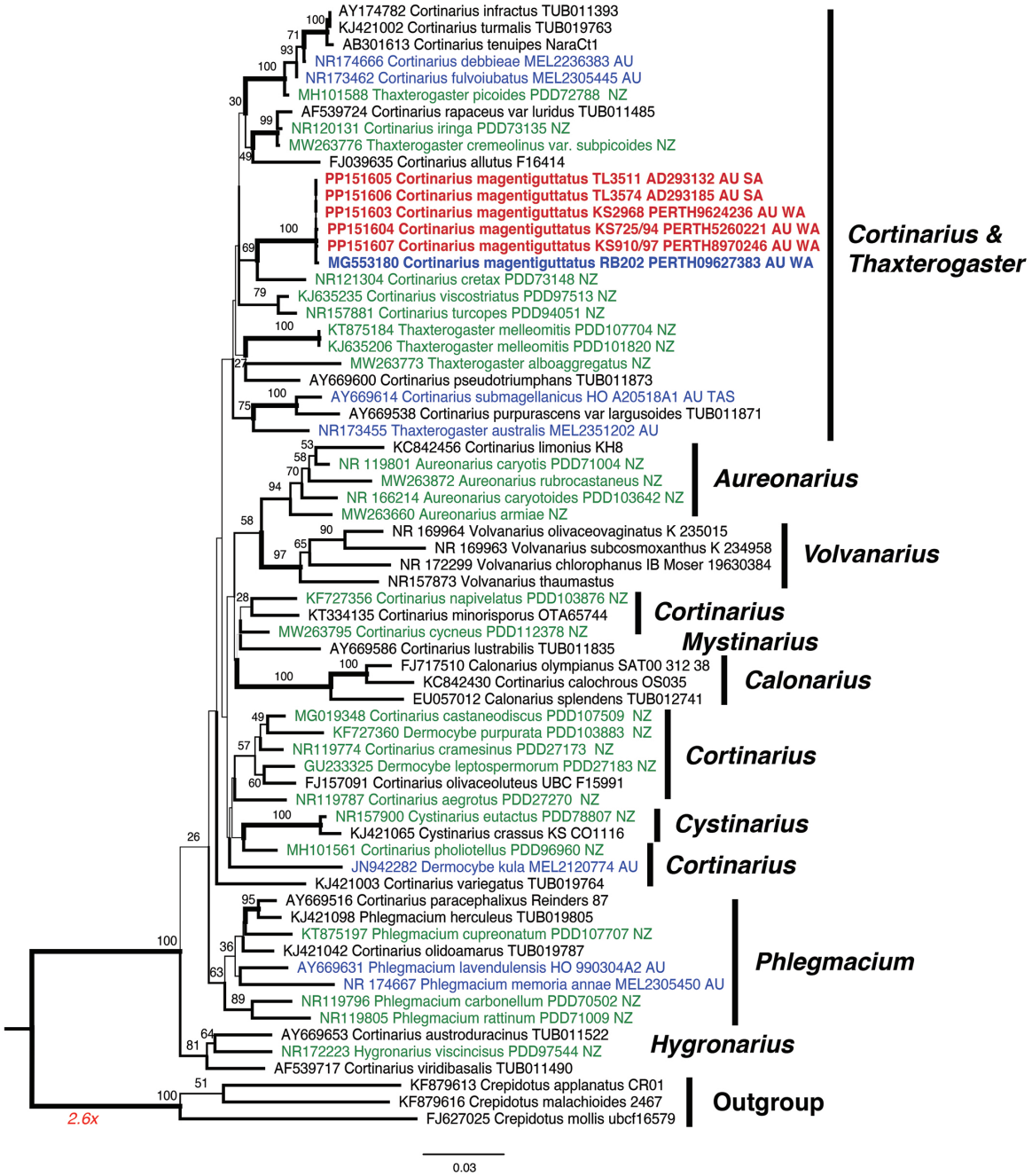
Additional materials examined: **Australia**, Western Australia, Denmark, William Bay National Park near the Ranger's residence, 7 Jun. 1994, *K. Syme & M. Hart*, KS725/94 (PERTH 5260221; ITS and LSU sequences GenBank PP151604 and PP151610; Denmark, west of Sunny Glen Road, 31 May 1997, *K. Syme, S. Ellis, & the Pedro family*, KS910/97 (PERTH 8970246; ITS and LSU sequences GenBank PP151607 and PP151612); Mountain Road, Walpole Fire Mosaic Study Grid 16, 6 Jun. 2011, *R. Robinson, K. Syme & P. Anderson*, RB202 WFM555 (PERTH 09627383; ITS sequence GenBank MG553180); South Australia, Springmount Conservation Park, main walking track, approximately 600 m from car park, 17 Jun. 2022, *T. Lebel*, TL3511 (AD 293132; ITS and LSU sequences GenBank PP151605 and PP151608); Adelaide Hills, Mylor Conservation Park, upper Heysen track off Whitehead Rd, along edge of track in leaf litter, 4 Jun. 2023, *T. Lebel*, TL3574 (AD 293185; ITS and LSU sequences GenBank PP151606 and PP151611.

Notes: *Cortinarius magentiguttatus* differs from other pale coloured cortinarioid species in having scattered purple, mauve-lilac and faint orange patches or tinges scattered over the pileus and bands of the same colour on the stipe from below the cortina to the base. In addition, the minute particles and shards of violet-rose magenta in radiating lines over the pileus and the stipe below the cortina appear to be unique. These shards of pigment survive drying and are most obvious on the margin of the pileus and the stipe base in younger basidiomata. The pigment does not dissolve in 3 % KOH.

Colour illustrations: Long unburnt *Eucalyptus* forest dominated by *E. jacksonii* and *E. diversicolor*, Walpole-Nornalup National Park, Walpole, Western Australia, Australia, holotype site. Basidiomata; violet-magenta rose pigmented shards on pileus; microscopic elements: ornamented basidiospores; pellis cross-section showing loosely interwoven epicutis and magenta pigmented hypocutis, with scattered aggregations of magenta shards; inset- close up of pigmented shards. Scale bars: basidiomata = 20 mm; pileus = 5 mm; spores = 10 µm; pileipellis = 100 µm; inset = 20 µm.

The gregarious mass sporulation (15–20 sporocarps in a cluster) of medium-sized colourful sporocarps is unusual enough that we would expect there to be more observations and herbarium collections. The sometimes pale pileus (when not exposed) and initially pale lamellae, may cause some confusion with *C. austroalbidus*. However, that species has a curry smell, remains whitish even in age, and may have a lilac apex to the stipe that *C. magentiguttatus* lacks.

Cortinarius magentiguttatus is a distinctive species (BS support 100 %) that has no apparent close relatives based on barcode ITS-LSU DNA data. While there is no support for any phylogenetic relationship, a well-supported clade including *Thaxterogaster picoides* from New Zealand, *Cortinarius debbiae* and *C. fulvoiubatus* from Australia (New South Wales and Tasmania respectively), and *T. turmalis* from Europe often appears as the next closest clade in any analyses we have conducted. Recent phylogenetic and phylogenomic investigations have changed our understanding of relationships within this morphologically diverse genus and resulted in the distinction of 10 genera (Soop *et al*. 2019, Liimatainen *et al.* 2022). For the moment we retain the species under the genus name *Cortinarius*, rather than placing in *Thaxterogaster*, until further genes can be obtained and analysed.



Bayesian (Mr Bayes v. 3.2.6) 50 % majority-rule consensus tree obtained from the ITS-LSU-nrDNA for a selection of cortinarioid species. Bold lines indicate PP support >0.95. Bold red text indicates sequences generated for this study, *C. magentiguttatus sp. nov.*

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