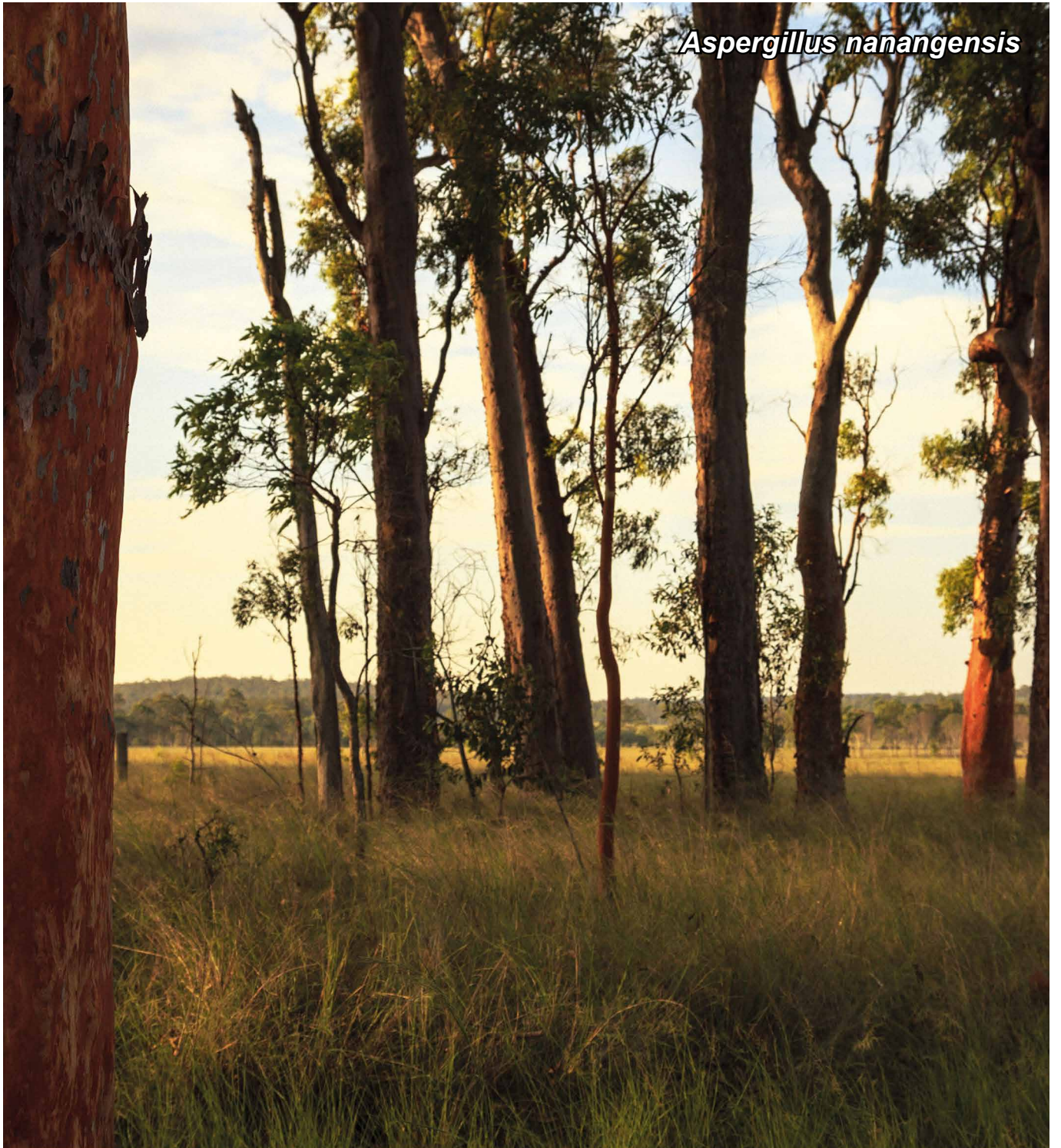


*Aspergillus nanangensis*





Fungal Planet 1066 – 29 June 2020

***Aspergillus nanangensis* Pitt, sp. nov.**

*Etymology.* Named for the town of Nanango, South Burnett District, Queensland, Australia, near which this species was collected.

*Classification* — *Aspergillaceae*, *Eurotiales*, *Eurotiomycetes*.

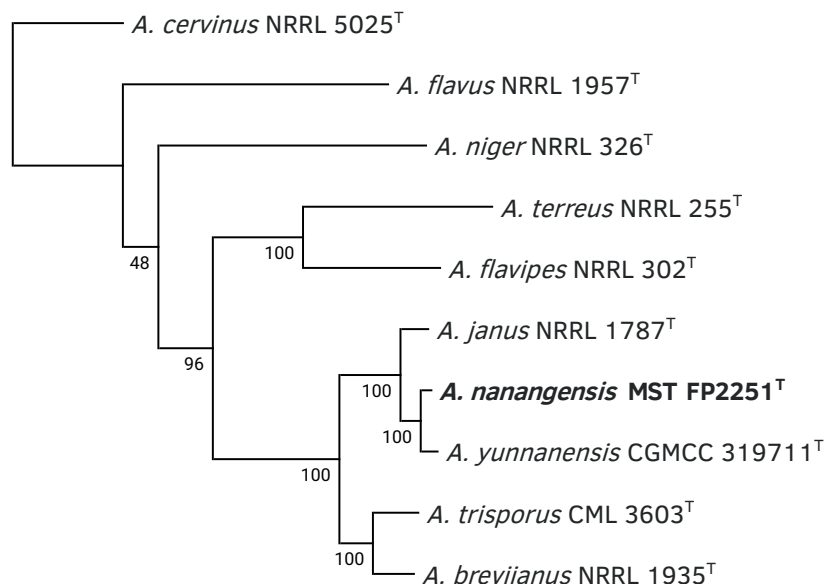
*Conidiophores* borne from surface hyphae, 200–400 × 7–9 µm, with thick, smooth, pale yellow walls, bearing very small vesicles. *Vesicles* 9–12 µm diam, ellipsoidal to somewhat irregular, bearing metulae and phialides over almost all of the vesicle surface, but sometimes bent to form only a hemispherical head; metulae 7–8 × 2.2–2.5 µm; phialides ampulliform 7–8 × 2.2–2.5 µm. *Conidia* spherical, 2.8–3.5 µm diam, with walls varying from almost smooth to conspicuously spiny, borne in compact spherical heads, even at age.

*Culture characteristics* — Czapek yeast extract agar (CYA), 25 °C, 7 d: Colonies growing slowly, 13–17 mm diam, rather sparse, lightly floccose; margins narrow and entire; mycelium white to off white; conidial production light, pale greenish grey (M. 25–26C3); exudate and soluble pigment absent; reverse greyish orange (M. 5B3–4). Malt extract agar (MEA), 25 °C, 7 d: Colonies growing slowly, 10–14 mm diam, low, dense and velutinous; margins narrow, entire; mycelium white; conidial production heavy, dark green near Bottle Green (M. 26F3–4); exudate and soluble pigment absent; reverse brownish orange (M. 5C3). 25 % Glycerol nitrate agar (G25N), 25 °C, 7 d: Colonies 3–5 mm diam, of white mycelium only. 37 °C, CYA, 7 d: No growth.

*Media formulations* are from Pitt & Hocking (2009); (M.) colours are from Kornerup & Wanscher (1978).

*Typus.* AUSTRALIA, Queensland, Nanango, from undisturbed forest soil, 2004, J.I. Pitt (holotype DAR 84903, cultures ex-type CBS 146238 = FRR 6048 = MST FP2251; ITS, *BenA*, *CaM* and *RPB2* sequences GenBank MK979278, MT184783, MT184789 and MT184795, MycoBank MB836001).

*Notes* — *Aspergillus nanangensis* clusters in *Aspergillus* clade *Jani*, a small clade within *Aspergillus* subg. *Circumdati*, but is molecularly distinct. It is close to *Aspergillus janus* and *Aspergillus brevijanensis*, but differs from both by lack of the larger white conidial heads that characterise these species. Culturally, growth rates of *A. nanangensis* on standard media are much slower. Microscopically, *A. nanangensis* produces smaller vesicles, fertile over a reduced area. When grown on agar, liquid media or grain, *A. nanangensis* displays a unique chemotaxonomic profile comprising isonanangenine B and D, nanangelenin, nanangenic acid, nanangenines A–H and nanoxepin not present in the closely related species *A. janus* and *A. brevijanensis* (Lacey et al. 2019). *Aspergillus nanangensis* also produces known metabolites asperphenamate, benzomalvin B and C, cytochalasin E and WIN 66306, compounds previously reported from other *Aspergillus* species.



A maximum likelihood tree inferred from the combined ITS, *BenA*, *CaM* and *RPB2* sequences of taxa within *Aspergillus* sect. *Jani*. The combined sequence alignment was partitioned by marker; substitution models for each partition were chosen according to the Bayesian Information Criteria using ModelTest-NG v. 0.1.6 (Darriba et al. 2020). The TPM2uf+G4 model was used for ITS sequences, K80+I+G4 for *BenA*, TrNef+G4 for *CaM* and *RPB2*. The tree was constructed using RAXML-NG v. 0.9.0 (Kozlov et al. 2019). Bootstrap support values are derived from 1 000 bootstrap replicates. Alignment available in TreeBASE (study S25916).

*Colour illustrations.* Woodland near Nanango, Queensland, dominated by *Eucalyptus* species showing undisturbed soil from which *A. nanangensis* was collected. Colonies grown on CYA (left) and MEA (right) for 7 d at 25 °C; fruiting structures and conidia. Scale bars = 10 µm (fruiting structures) and 5 µm (conidia).

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