

## 22. *Nectria australiensis* Seifert, *sp. nov.* — Figs 2 h, 32, 33.

Stromata conspicua, rubrobrunnea, ad 5 mm diam. Perithecia solitaria vel –100 in stromate caespitosa, globosa vel modice pomiformia, rubrobrunnea, circum ostiolum concoloria, in KOH rubescentia, 200–400  $\mu\text{m}$  diam. Paries e superficie visus e cellulis globosis vel ellipsoideis (5–)10–20(–30  $\mu\text{m}$  diam, tunicatis 2–4  $\mu\text{m}$  crassis compositus, 60–100  $\mu\text{m}$  crassis, e duobus stratis constans: externum 60–90  $\mu\text{m}$  crassum, crassitudine irregulare, in KOH discolorans, e cellulis globosis vel angularibus 5–25  $\mu\text{m}$  diam crassitunicatis compositum, internum circa 10  $\mu\text{m}$  crassum, in KOH haud discolorans, e cellulis compressis tenuitunicatis compositum. Papilla 40–80  $\mu\text{m}$  lata, ex hyphis verticalibus composita in cellulas modice clavatas 4–6  $\mu\text{m}$  latas tunicatas 1–2  $\mu\text{m}$  crassis terminantes; canalis ostiolaris 70–80  $\mu\text{m}$  longus, periphysibus 2–3  $\mu\text{m}$  latis coopertus. Asci cylindrici vel modice clavati, apicibus simplicibus, 70–100  $\times$  7–11  $\mu\text{m}$ , octospori, uniseriati vel partim biseriati, parte basilari 10–25  $\mu\text{m}$  longa vacua. Ascosporae ellipsoideae, uniseptatae, haud constrictae, inconspicue echinulatae, 13–15  $\times$  5–6.5  $\mu\text{m}$ .

Anamorphosis *Tubercularia australiensis* Seifert.

Holotypus ut *Sphaerostilbe aurantiaca*, ad corticem, prope Brisbane in Australia, leg. Baily No. 157 in K.

Anamorph: *Tubercularia australiensis* Seifert, *stat. nov.*

Synnemata cylindrico-capitata vel subulato-capitata, stipites simplices, leves, omnino rubrobrunnei, in KOH rubescentes, 1–2 mm alti, 100–250  $\mu\text{m}$  lati; hyphae stipitis 5–8  $\mu\text{m}$  latae; hyphae marginales clavatae, 5–14  $\mu\text{m}$  latae, tunicatae 2–5  $\mu\text{m}$  crassis, praecipue prope basim stipitis, sed etiam in parte superiore sparsae. Conidiophora bis vel ter monochasialia vel duobis tabulatis monochasialia; metulae 12–18.5  $\times$  1.5–2  $\mu\text{m}$ ; phialides cylindricae vel modice subulatae, laterales et terminales vel terminales ternae verticillatae, 20–29  $\mu\text{m}$  longae, 1.5–2  $\mu\text{m}$  latae, hyphis sterilibus 60–130  $\mu\text{m}$  longis, 1–1.5  $\mu\text{m}$  latis, simplicibus vel semel dichotomis intermixtae. Conidiorum massa crenea vel dilute rosea, globosa, 300–400  $\mu\text{m}$  diam. Conidia ellipsoidea vel ovata, 7–10  $\times$  3.5–4.5  $\mu\text{m}$ .

Holotypus ut *Sphaerostilbe aurantiaca*, Baily No. 157 in herb. K.

*Perithecia* solitary to 100 caespitose, on an erumpent stroma, globose to slightly pomiform, undergoing cupulate collapse when dry, red-brown, turning blood-red in KOH, concolorous at ostiole, 200–400  $\mu\text{m}$  diam. *Stroma* conspicuous, round to linear, red-brown, to 4 mm wide, with 1–2 layers of KOH+ cells at the surface, and KOH– cells below, mostly of textura angularis, of cells 5–20  $\mu\text{m}$  diam with cell walls about 1  $\mu\text{m}$  thick, beneath bark textura intricata of hyphae 3–5  $\mu\text{m}$  thick. *Perithecial wall* in surface view composed of globose to ellipsoidal cells (5–)10–20(–30)  $\mu\text{m}$  diam with cell walls 2–4  $\mu\text{m}$  thick; in section 60–100  $\mu\text{m}$  thick, divided into two zones; outermost zone KOH+, 60–90  $\mu\text{m}$  thick, irregular in thickness, composed of globose to angular cells 5–25  $\mu\text{m}$  diam with cell walls 2–4  $\mu\text{m}$  thick, cells more compressed, thinner walled and less KOH+ towards locule; inner zone KOH–, about 10  $\mu\text{m}$  thick, composed of compressed thin-walled cells; papilla palisade-like, 40–80  $\mu\text{m}$  wide, composed of vertically oriented parallel hyphae with slightly clavate terminal cells, 4–6  $\mu\text{m}$  wide with cell walls 1–2  $\mu\text{m}$  thick; ostiolar canal 70–80  $\mu\text{m}$  long, lined with periphyses 2–3  $\mu\text{m}$  wide. *Asci* cylindrical to slightly clavate with a simple apex,

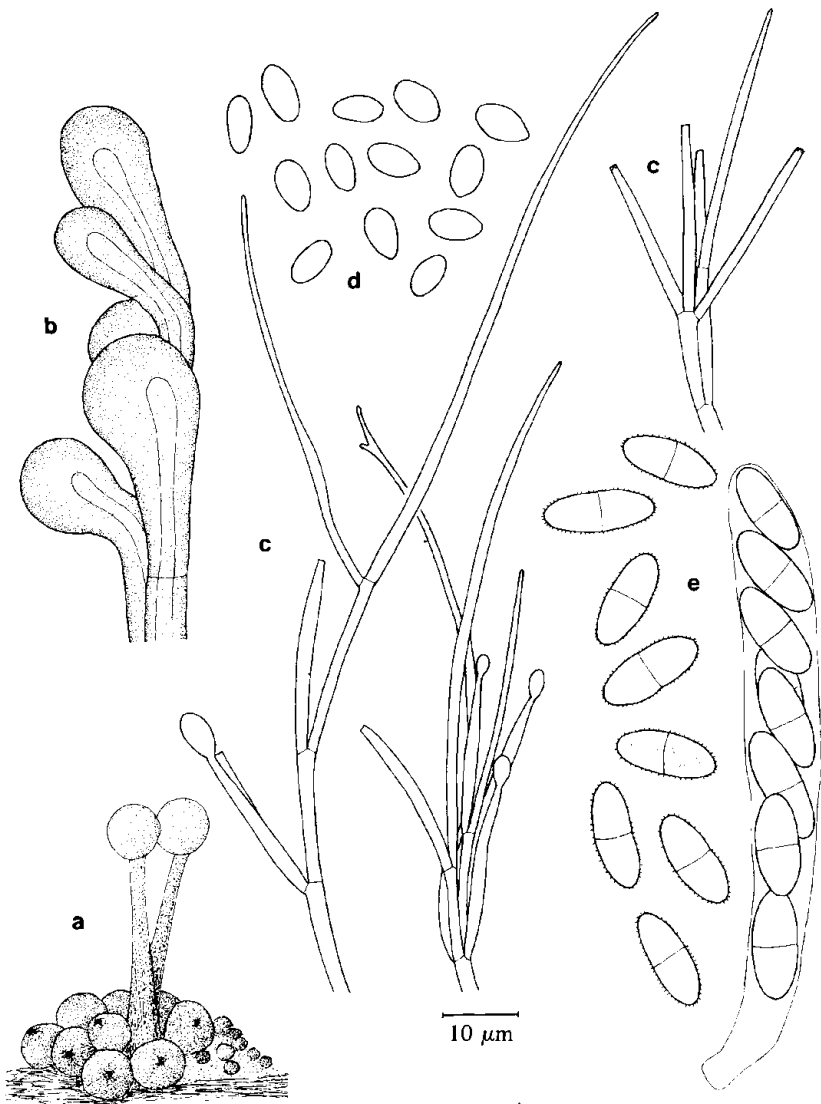


Fig. 33. *Nectria australiensis*, holotype. a. Synnemata with perithecia at base,  $\times 17$ ; b. marginal hyphae; c. conidiophores; d. conidia; e. asci and discharged ascospores.

70–100  $\times$  7–11, 8-spored, uniseriate or partly biseriate, the basal 10–25  $\mu\text{m}$  empty. *Ascospores* ellipsoidal, 1-septate, not constricted, inconspicuously echinulate, 13–15  $\times$  5–6.5  $\mu\text{m}$ .

*Synnemata* scattered, or 2–3 gregarious, emerging from perithecial cluster or independently, cylindrical-capitate, subulate-capitate, medium stature, unbranched, smooth, uniformly red-brown, turning blood-red in KOH, 1–2 mm tall, 100–250  $\mu\text{m}$  wide. *Hyphae of stipe* 5–8  $\mu\text{m}$  wide, with irregularly thickened

cell walls; marginal hyphae clavate, concentrated at base of stipe but scattered over upper part as well, 5–14  $\mu\text{m}$  wide, cell walls 2–5  $\mu\text{m}$  thick, lumina reduced. *Conidiophore* branching two to three times monochasial, or 2-level monochasial, metulae 12–18.5  $\times$  1.5–2  $\mu\text{m}$ . *Phialides* cylindrical or slightly subulate, lateral and terminal or in terminal whorls of 3, 20–29  $\mu\text{m}$  long, 1.5–2  $\mu\text{m}$  wide, small flared collarettes sometimes visible, periclinal thickening visible; sterile hyphae intermixed with phialides 60–130  $\mu\text{m}$  long, 1–1.5  $\mu\text{m}$  wide, tapering evenly to a gently rounded apex, unbranched or once dichotomously branched. *Conidial mass* cream-coloured to slightly pink, globose, 300–400  $\mu\text{m}$  diam. *Conidia* ellipsoidal to ovoid, 7–10  $\times$  3.5–4.5  $\mu\text{m}$ .

HABITAT: Bark.

DISTRIBUTION: Australia (Queensland).

#### MATERIAL EXAMINED

Herbarium specimens:

*Nectria australiensis* and *Tubercularia australiensis*, holotype, as *Sphaerostilbe aurantiaca*, on bark, leg. Baily no. 157, Australia, Queensland, Brisbane, herb. F. Currey in herb. C. E. Broome (K).

#### DISCUSSION

*Tubercularia australiensis* is recognized by its clavate marginal hyphae, the sterile hyphae intermixed with the phialides, and the conidia which are intermediate in size between those of *T. aurantiaca* and those of the other members of the genus. *Nectria australiensis* is almost certainly the teleomorph, although no cultures of the fungus have been available. The perithecial anatomy corresponds with that of other members of the *Nectria cinnabarina* group. It is most similar to *N. cinnabarina*, from which it differs by having slightly smaller ascospores which have a different shape and wall ornamentation.

### 23. *Nectria canadensis* Ellis & Everhart — Figs 34, 35.

*Nectria canadensis* Ellis & Everhart — Bull. Torrey bot. Club. **11**: 74. 1884 = *Calonectria canadensis* (Ellis & Everhart) Berlese & Voglino — Addendum to Syll. Fung. **4**: 212. 1886 = *Scoleconectria canadensis* (Ellis & Everhart) Seaver — Mycologia **1**: 199. 1909.

Anamorph: *Tubercularia grayana* (Sacc. & Ellis) Seifert, *comb. nov.*

*Ciliciopodium grayanum* Sacc. & Ellis — Michelia **2**: 581. 1882 (basionym).

*Dendrostilbella ulmi* Dearness — Mycologia **16**: 175. 1924.

*Perithecia* solitary to 10–100 caespitose, developing on stipe of anamorph or around base, giving stipe verrucose appearance, eventually covering conidial stroma completely resulting in a convex mass of perithecia, red-brown, turning blood-red in KOH, blackened around ostiole, 300–400  $\mu\text{m}$  diam when mature,