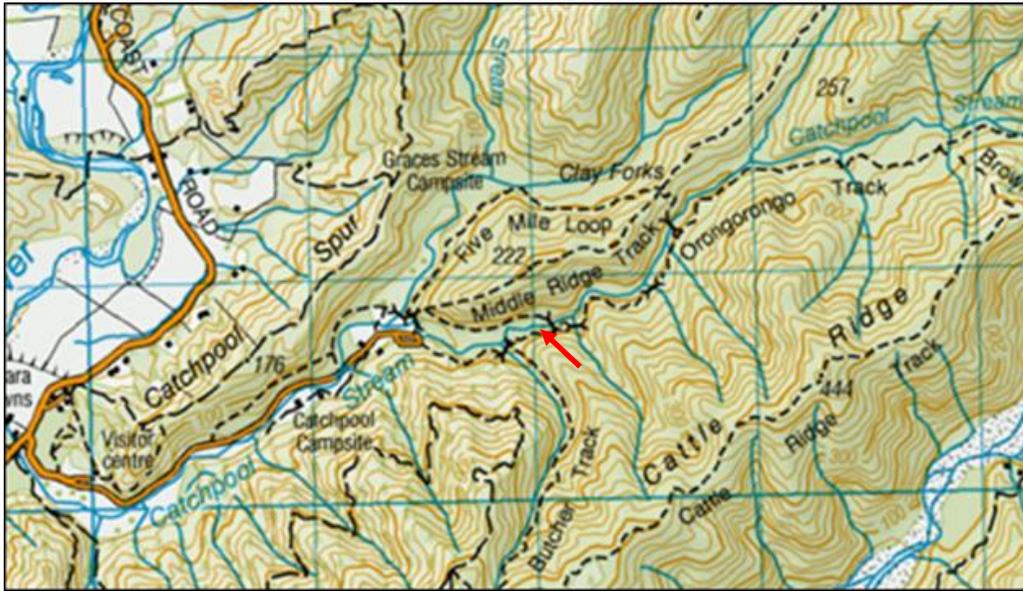


***Rosellinia stenasca* Rick & its *Geniculosporium* anamorph plus *Cylindrotrichum ellisii* Morgan-Jones**

**AEB 1328 (= PDD 117264)**

**Collection site:** Remutaka Forest Park, Orongorongo Track (See red arrow on map insert)



**Substrate:** On older, firm, fallen, unidentified dead wood

**Collection date:** 18 September 2019

**Collector & Identifier:** Dan Mahoney

**Voucher materials:** Dried herbarium specimen AEB 1328 (= PDD 117264) accompanied by a single slide of the *Rosellinia* containing both Shear's mounting fluid (SMF) and Melzer's reagent mounts; Dan's in-situ Zeiss dissecting scope photos of fruiting bodies from the *Rosellinia*, *Geniculosporium* & *Cylindrotrichum* [Kodak Professional Portra 160 color neg. film, (best ones digitally scanned)] and Olympus BX51 compound scope (with DP25 camera) digital photos of microscopic details from each; Dan's comments. Measurements and other details are provided with the photos and photo legends.

**References consulted & commented upon in the following pages:**

**Rosellinia and Geniculosporium:** 1) Petrini L.E. 2003. *Rosellinia* and related genera in New Zealand. *New Zealand Journal of Botany* 41: 71–138. 2) Petrini, L. E. & Petrini, O. 2005. Morphological studies in *Rosellinia* (Xylariaceae): the first step towards a polyphasic taxonomy. *Mycol. Res.* 109: 569–580.

**Cylindrotrichum (and Kylindria):** 1) Ellis, M. B. 1976. *More Dematiaceous Hyphomycetes*. Kew - Commonwealth Mycological Institute. 507 pp. (see p. 470). 2) Morgan-Jones G. 1977. Notes on Hyphomycetes. XVIII. *Chaetoblastophorum ingramii* gen. et sp. nov. & *Cylindrotrichum oblongisporum* sp. nov. *Mycotaxon* 5(2): 484–490 (see pp. 489 & 490). 3) DeCosmo F., Berch S. & Kendrick B. 1983. *Cylindrotrichum*, *Chaetopsis*, and two new genera of Hyphomycetes, *Kylindria* and *Xenokylindria*. 1983. *Mycologia* 75(6): 949–973 (see pp. 970 & 971). 4) Réblova M., Gams W. & Seifert K.A. 2011. *Studies in Mycology* 68: 163–191 (see pp. 180–187). 5) Seifert K., Morgan-Jones G., Gams W. & Kendrick B. 2011. *The Genera of Hyphomycetes*. CBS Biodiversity Series no. 9: 1–997. CBS-KNAW Fungal Biodiversity Centre, Utrecht, Netherlands. (see pp. 168, 267 & 268). 6) Online websites for Index Fungorum, Mycobank & Westerdijk Fungal Biodiversity Institute. 7) Two collections by Jerry Cooper are recorded on the PDD Landcare website – PDD 80144 & PDD 86832 (as *Kylindria ellisii*).

**Reference comments continued on the next page:**

**Comments concerning *Rosellinia stenasca* Rick:** Collection AEB 1328 (= PDD 117264) nicely fits the descriptions, illustrations and comments by the Petrini's (2003 & 2005) — the major exception being the presence of a *Geniculosporium* anamorph. Ascospore sizes, shapes, germ slit lengths and stromata features match. This collection is the only collection of *R. stenasca*, of which I'm aware, that exhibits an anamorph associated with the teleomorph. It wasn't observed during initial observations but developed in the ostiolar area of many stromata after several day's storage in the moisture of the original collection container. It appeared typical of *Geniculosporium* anamorphs in other *Rosellinia* species. To my knowledge, this is the first record of an anamorph for this species although, unfortunately, I haven't seen the 2013 World Monograph of this genus (Petrini L.E. 2013. *Rosellinia* – a world monograph. Bibliotheca Mycologica 205. 410 p.).

**Comments concerning *Cylindrotrichum ellisii* Morgan-Jones (see full-references on the previous page):** Initially, I turned to 'Ellis, M.B. 1976. *More Dematiaceous Hyphomycetes*.' p. 470, where his *Cylindrotrichum triseptatum* M.B. Ellis sp. nov. fit collection AEB 1328 (= PDD 117264) rather well. Further searching, however, revealed that Ellis's *C. triseptatum* was actually not that species but instead a smaller-spored *Cylindrotrichum* that Morgan-Jones (1977, pp. 489, 490) then published as the nom. nov. *C. ellisii* Morgan-Jones: (see below from p. 490)

***Cylindrotrichum ellisii* Morgan-Jones nom. nov.**

≡ *Cylindrotrichum triseptatum* M.B. Ellis, *More Dematiaceous Hyphomycetes*, 470, 1976.

**Non *Cylindrotrichum triseptatum* Matsushima, *Icones Microfungorum a Matsushima Lectorum*, 48, 1975.**

That remains the currently accepted name on the Index Fungorum, Mycobank & Westerdijk Fungal Biodiversity Institute websites. Although, in the interim between 1977 and 2019, DeCosmo et al. 1983. p. 970, erected the new genus *Kylindria* to which they transferred *C. ellisii*: (see below from p. 970)

***Kylindria ellisii* (Morgan-Jones) DiCosmo, Berch et Kendrick, comb. nov.**

≡ *Cylindrotrichum ellisii* Morgan-Jones, *Mycotaxon* 5: 490. 1977.

≡ *Cylindrotrichum triseptatum* M. B. Ellis, *More Dematiaceous Hyphomycetes*, p. 470. 1976; non *Cylindrotrichum triseptatum* Matsushima, *Icones Microfungorum a Matsushima Lectorum*, p. 48, figs. 22-25. 1975.

Furthermore, in her continuing work with *Chaetosphaeria*, its relatives and their various anamorphs, Réblova has dealt with both *Cylindrotrichum* and *Kylindria* species (see the reference Réblova et al. 2011). Using sequencing evidence and changes resulting from recent One Fungus-One Name rules, new segregate orders, families and genera are emerging that affect the placement and understanding of species in these 2 anamorph genera (and relatives). The resulting current conundrum is partially dealt with by Seifert et al. 2011 in their 'Magnum Opus' *The Genera of Hyphomycetes*. Their comments on *Cylindrotrichum* and *Kylindria* are reproduced on the next two pages.

**Seifert K., Morgan-Jones G., Gams W. & Kendrick B. 2011. The Genera of Hyphomycetes. CBS Biodiversity Series no. 9: 1–997. CBS-KNAW Fungal Biodiversity Centre, Utrecht, Netherlands. Page 168 below.**

**CYLINDROTRICHUM** Bonord. 1851 — *Handbuch allg. Mykol.*, p. 88 (no illus.) / *C. oligospermum* (Corda) Bonord. 1851, lectotype *fide* Hughes 1958 = *Cylindrotrichum* anamorph of *Reticulascus tulasneorum* (Réblová & W. Gams) Réblová, W. Gams & Seifert 2010

= *Chaetopsis* Grev. 1825, *fide* DiCosmo *et al.* 1983, but considered distinct by Réblová & Gams 1999, Réblová *et al.* 2011

CDM: none. SET: none or next to cph, brown. CPH: unbranched or sparingly branched, brown. CGC: polyphialides or sympodial, (sympodial inside collarete of phialide), terminal and intercalary in cph, brown. CDA: amero or didymo, hyaline, slimy or dry, schizo.

**Pl. 161A.** On wood and litter: Asia, Caribbean, Europe, North America. Two, five, or eleven species (see notes). Teleomorph: *Reticulascus*, *fide* Barr & Crane 1979, Réblová & Gams 1999 (as *Chaetosphaeria*), Réblová *et al.* 2011. Synanamorph (hypho): cladosporium-like, *fide* Matsushima 1983. ITS barcode: AF178547 (CBS 101319).

**Notes:** Compare with *Chaetopsis*, *Chloridium*, *Kylindria*, *Xenokylindria*. The teleomorph of *C. oligospermum* may be related to the *Microascales* *fide* Réblová & Winka (2000). Most species classified in *Cylindrotrichum* are unrelated to that species and might eventually be classified in *Kylindria*. For differing points of view on generic concepts in *Cylindrotrichum sensu lato*, the reader is referred to DiCosmo *et al.* (1983), Rambelli & Onofri (1986), Arambarri & Cabello (1989), Holubová-Jechová (1990) and Réblová *et al.* (2010). Entries relevant for species accepted in *Chaetopsis*, *Kylindria* and *Xenokylindria* by some authors are repeated under those genera. Clements & Shear (1931) selected *C. album* as lectotype, a fungus of doubtful identity *fide* Hughes (1958), and we have followed the lectotypification by Hughes to retain usage of this name.

**Seifert K., Morgan-Jones G., Gams W. & Kendrick B. 2011. The Genera of Hyphomycetes. CBS Biodiversity Series no. 9: 1–997. CBS-KNAW Fungal Biodiversity Centre, Utrecht, Netherlands.**

**Below left, from page 267**

**Below right, from page 268**

**KYLINDRIA** DiCosmo, S.M. Berch & W.B. Kendr. 1983 — *Mycologia* 75: 970 (949–973, Fig. 26) / *K. tri-septata* (Matsush.) DiCosmo, S.M. Berch & W.B. Kendr. 1983 ≡ *Cylindrotrichum triseptatum* Matsush. 1975

= *Xenokylindria* DiCosmo, S.M. Berch & W.B. Kendr. 1983, *fide* Réblová & Gams 1999, but *cf.* Réblová *et al.* 2010

CDM: none (or synnemata, dark). SET: none or unbranched, brown, next to cph. CPH: unbranched, brown. CGC: phialides, sometimes sympodial inside collarete, brown. CDA: amero or didymo or phragmo, hyaline, slimy, schizo.

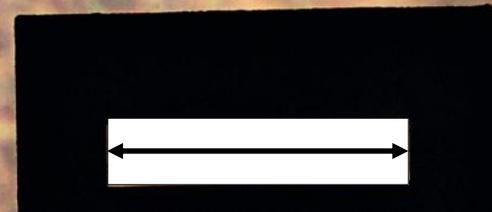
**Pl. 201D.** On leaf litter (*Erianthus*, *Quercus*) and wood (*Roystonea*, *Sapium*): Cosmopolitan. About 15 species. Teleomorph: *Chaetosphaeria*, *fide* Réblová & Gams 1999, Réblová 2000. ITS barcode (not type sp.): EF029190 (ICMP 14610).

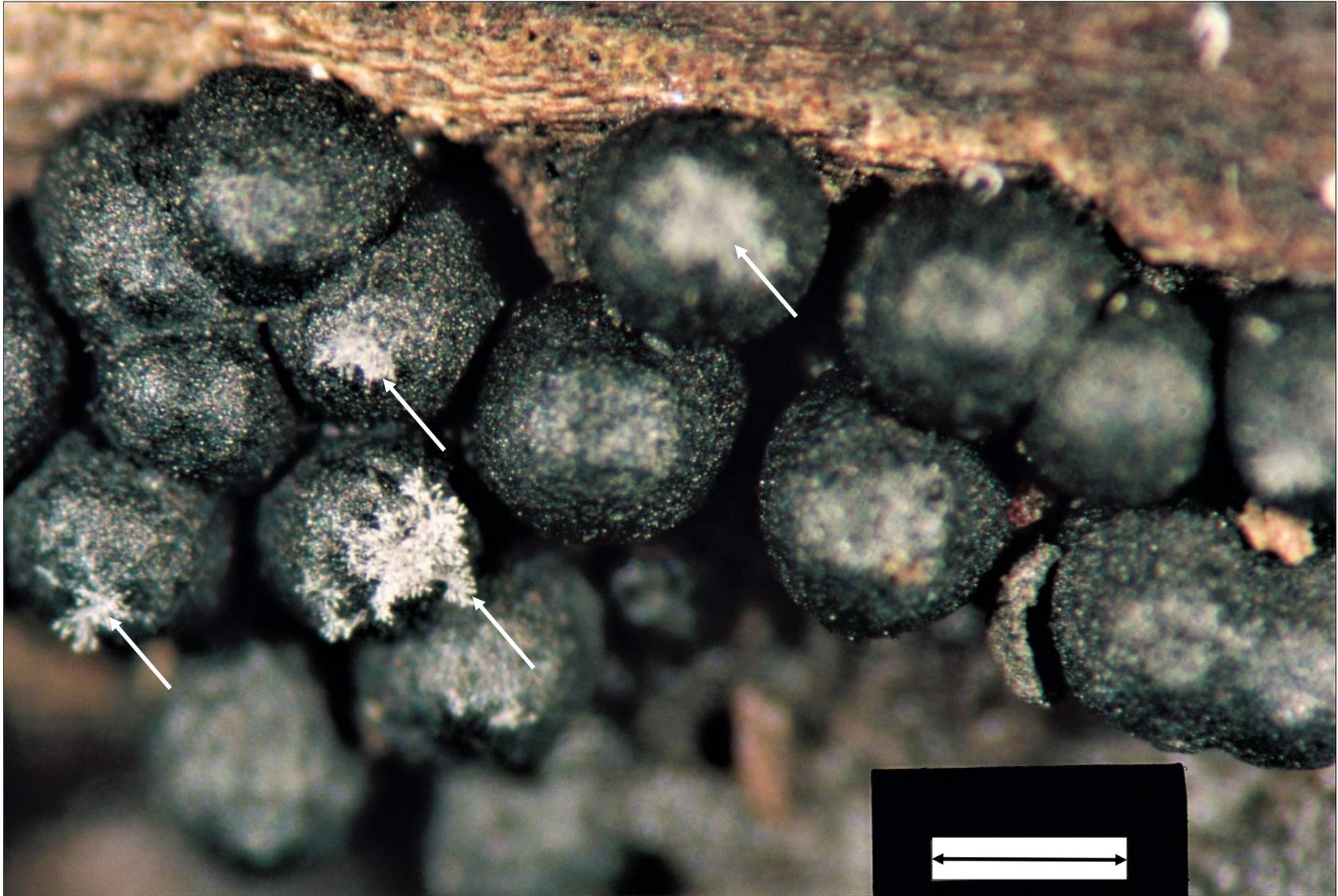
**Notes:** Anamorphic *Ascomycota* (*Chaetosphaeriaceae*, *Chaetosphaeriales*), although the phylogenetic affinities of the type species are questioned by Réblová *et al.* (2010). Originally a segregate from *Cylindrotrichum* for species with indistinct, long percurrent exten-

sions, *Kylindria* was then used as the name for one of four monophyletic anamorphic ‘groups’ associated with *Chaetosphaeria* accepted by Réblová (2000), and including several species often attributed to *Cylindrotrichum*; if *Kylindria* is indeed related to the *Reticulascaceae*, then *Xenokylindria* could become the anamorphic name for this clade. Compare with *Chaetopsis*, *Chloridium*, *Cylindrotrichum*, *Monilochaetes*. Generic concepts and the generic placement of species in this complex are controversial. For differing points of view, the reader is referred to DiCosmo *et al.* (1983), Rambelli & Onofri (1986), Arambarri & Cabello (1989), Holubová-Jechová (1990), Réblová (2000) and Réblová *et al.* (2010). Entries relevant for species accepted in *Chaetopsis* and *Cylindrotrichum* by some authors are repeated there.

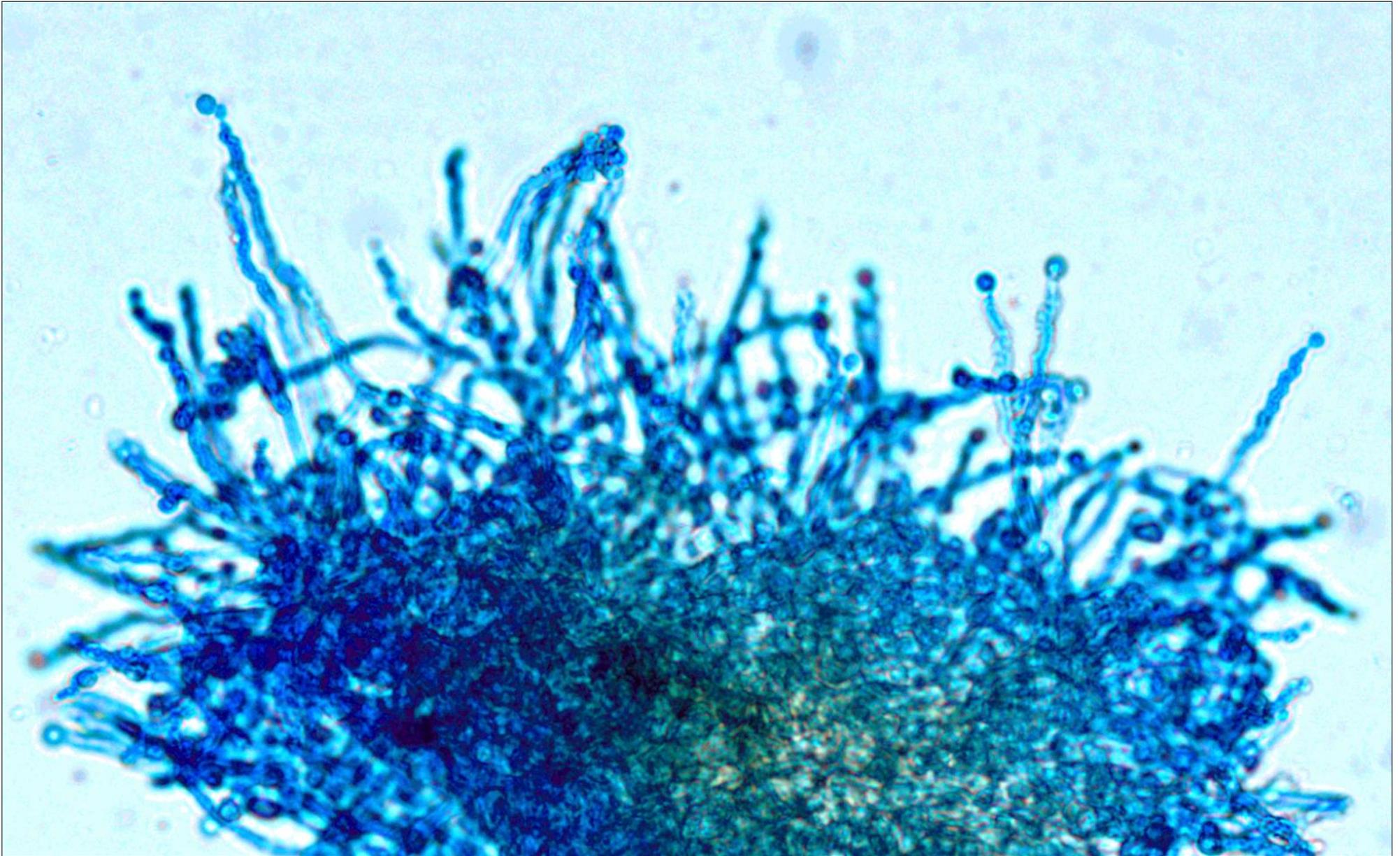


Fresh in-situ *Rosellinia stenasca* with its *Geniculosporium* anamorph (the latter arrowed). Note the conical uniperitheciate stromata in side view. Bar white inner length 625  $\mu\text{m}$ .





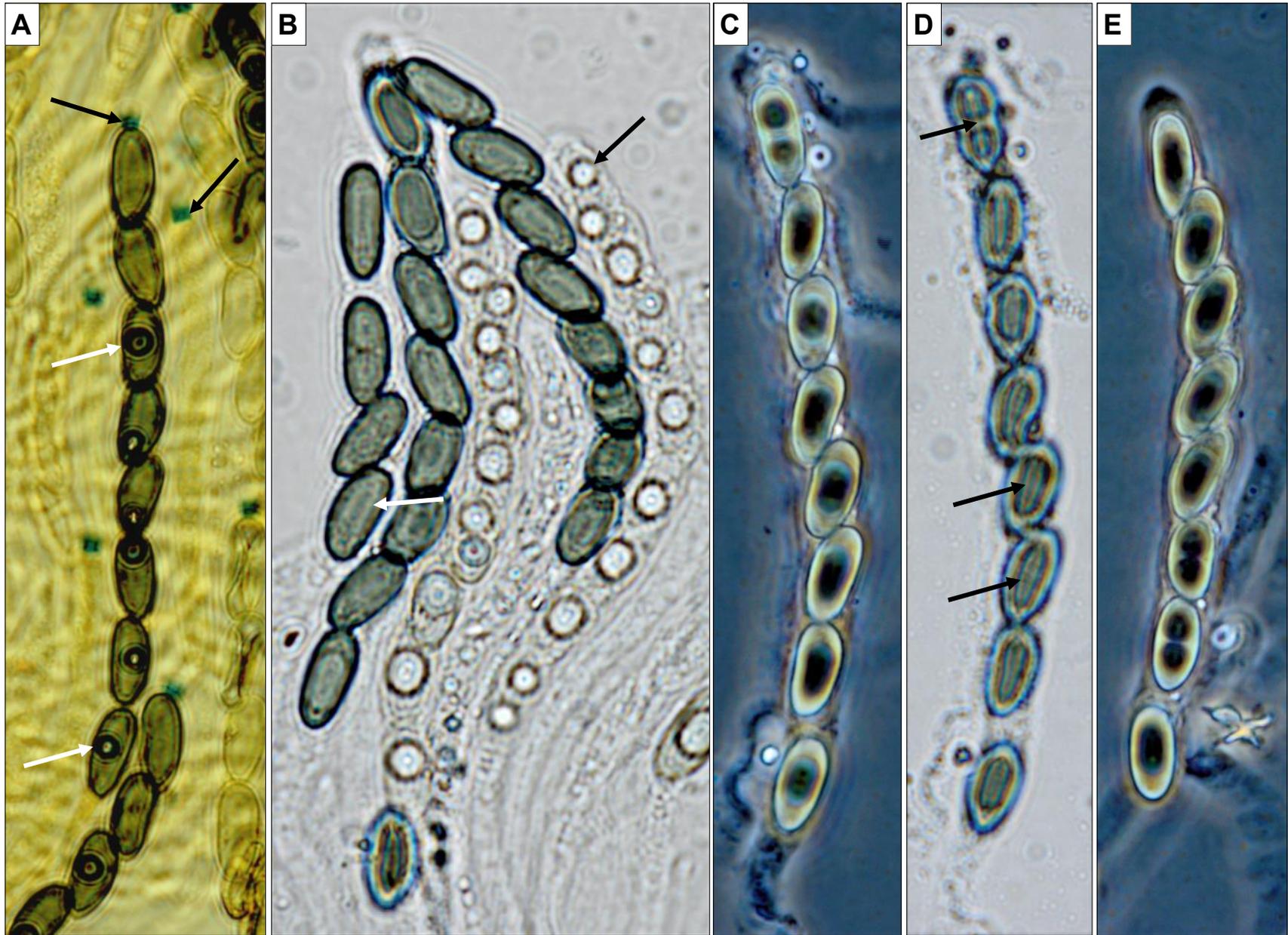
Fresh in-situ *Rosellinia stenasca* with its *Geniculosporium* anamorph (the latter arrowed). Note the crowded uniperitheciate stromata in overhead view. Bar white inner length 500  $\mu\text{m}$ .



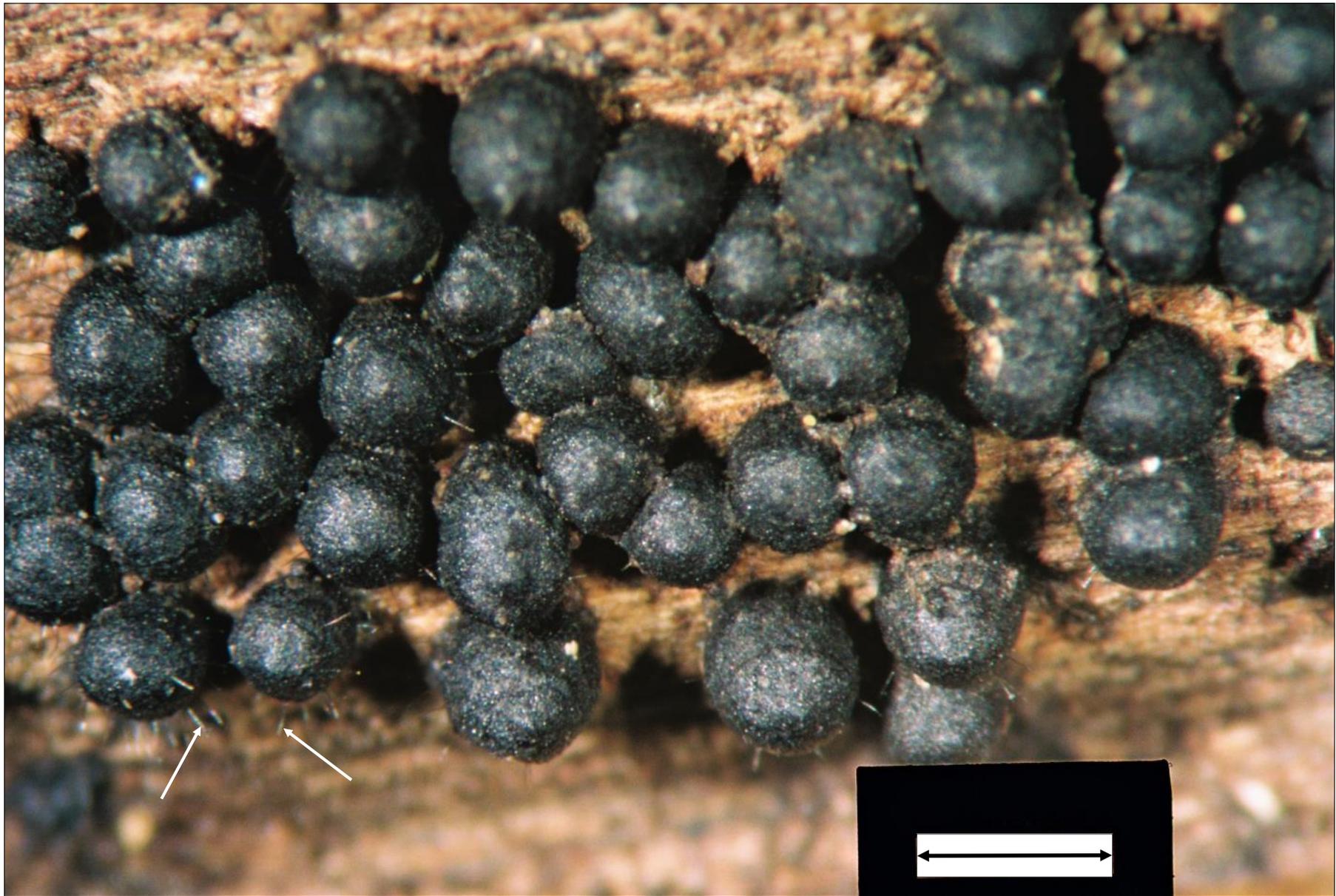
***Geniculosporium* anamorph mounted in aniline blue lactic acid, X40 objective, brightfield microscopy. The mount was prepared by removing the *Geniculosporium* growth from the uppermost portion of a uniperitheciate stroma. For in-situ locations see arrowed portions on the previous two pages.**



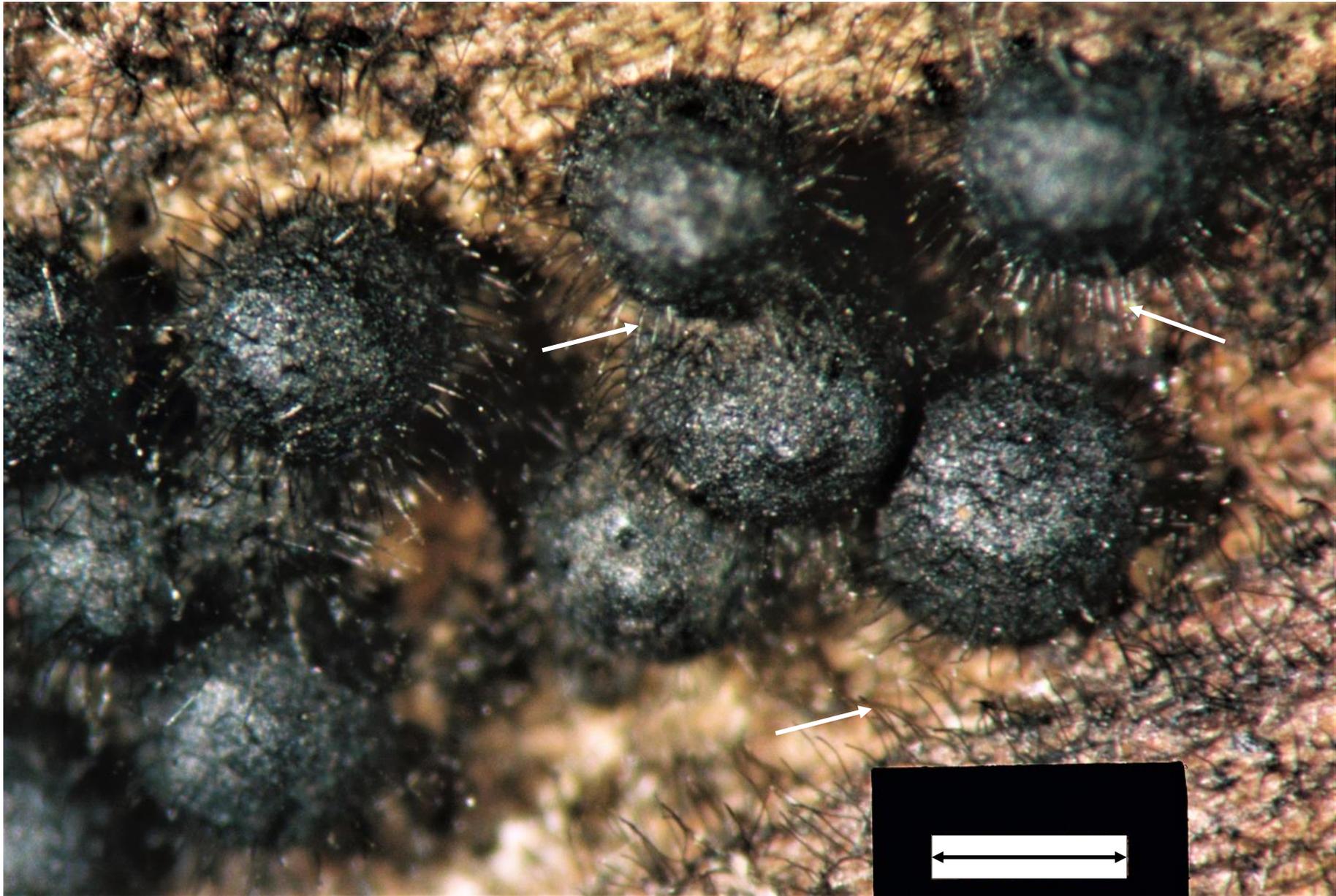
**Hymenial squash. Water mount showing asci and paraphyses, X20 objective, phase microscopy. Slight photo enlargement reveals that ascospores in water have 2 polar globules. These are replaced by a single deBary bubble in Shear's mounting medium, Melzer's reagent and even in some rehydrated water mounts.**



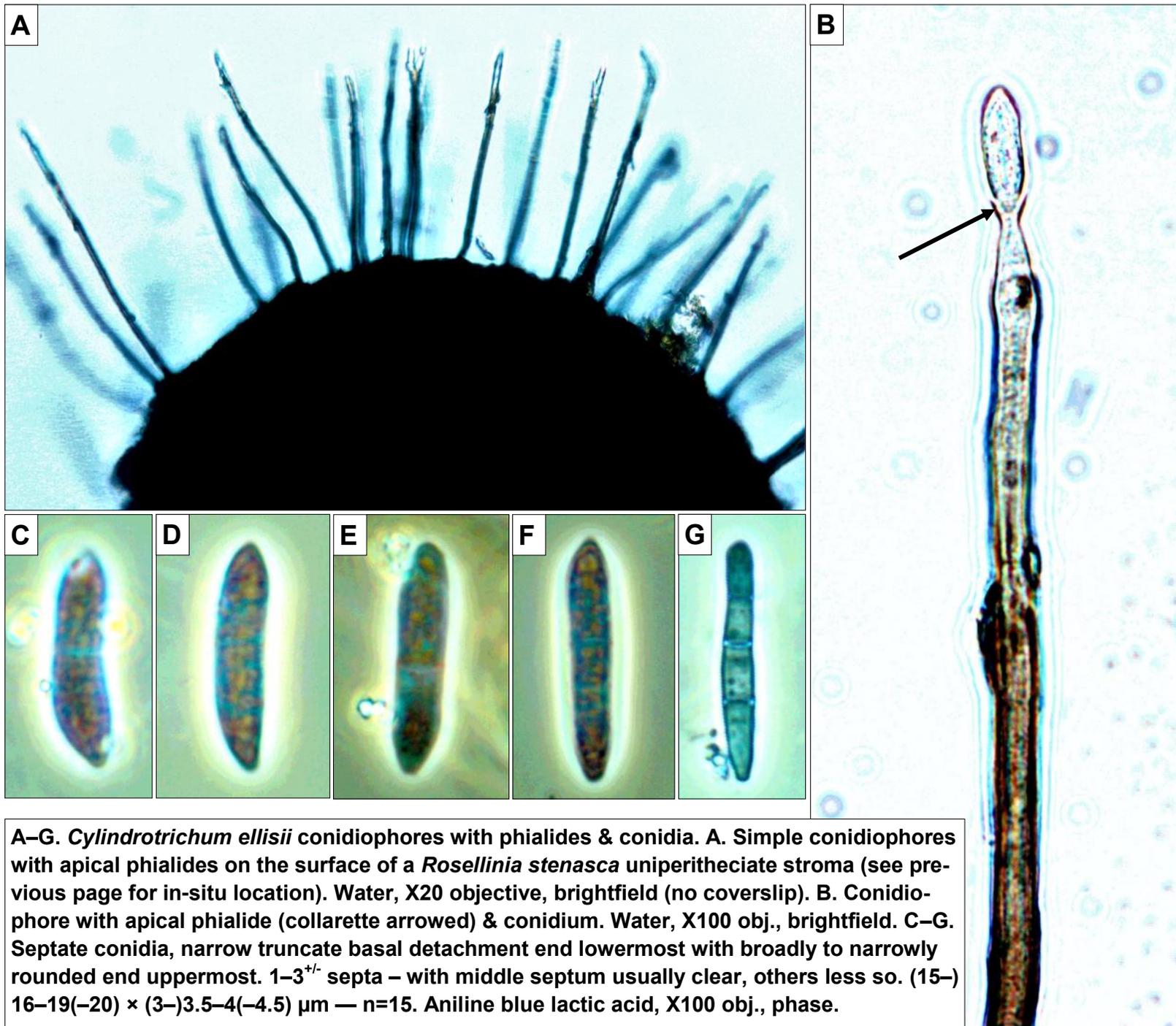
**A–E. Asci & ascospores, all X100 objective. A. Melzer's reagent, brightfield. Note bluing of ascus apex (black arrows), deBary bubbles (white arrows) & ascospore shapes. B. Rehydrated water mount, brightfield. Polar globules (black arrow) still visible in immature spores. Germ slits very faint (white arrow). C,D. Same ascus, rehydrated water mount, phase & brightfield resp. Germ slit views (arrowed) require careful focusing & overexposures. E. Ascus. Rehydrated water mount, phase microscopy.**



Fresh in-situ *Rosellinia stenasca*. Note crowded uniperitheciate stromata in overhead view and scattered simple conidiophores of *Cylindrotrichum ellisii* (the latter arrowed). Bar white inner length 800  $\mu\text{m}$ .



Fresh in-situ *Rosellinia stenasca*. Note crowded uniperitheciate stromata in overhead view and numerous simple conidiophores of *Cyldrotrichum ellisii* (the latter arrowed – on stromata and the wood surface). Bar white inner length 450  $\mu\text{m}$ .



**A–G.** *Cylindrotrichum ellisii* conidiophores with phialides & conidia. **A.** Simple conidiophores with apical phialides on the surface of a *Rosellinia stenasca* uniperitheciate stroma (see previous page for in-situ location). Water, X20 objective, brightfield (no coverslip). **B.** Conidiophore with apical phialide (collarette arrowed) & conidium. Water, X100 obj., brightfield. **C–G.** Septate conidia, narrow truncate basal detachment end lowermost with broadly to narrowly rounded end uppermost. 1–3<sup>+/-</sup> septa – with middle septum usually clear, others less so. (15–) 16–19(–20) × (3–)3.5–4(–4.5) μm — n=15. Aniline blue lactic acid, X100 obj., phase.