

DISTRIBUTION.— Common in temperate regions.

TYPES.— UNITED STATES. New Jersey: Newfield, on fallen apple wood, 6 Dec 1874 (NY, lectotype of *P. vulpina*, designated in Samuels, 1976a). GERMANY. Mark Brandenburg: Triglitz in der Prignitz, on *Alnus glutinosa*, 6 Oct 1908, Jaap, Höhnel 5519 (FH-Höhnel), lectotype of *Nectria incrustans*, designated in Samuels, 1976a); same location, on *Betula*, 1 Oct 1909, Jaap, Höhnel 5519 (FH, paratype of *N. incrustans*). Culture: CBS 565.76.

ILLUSTRATIONS.— Samuels (1976a, Figs. 9f, 15; 1976b, Figs. 6, 29, both as *N. vulpina*).

MYCOARACHIS Malloch & Cain, *Canad. J. Bot.* 48: 1820. 1970.

Type: *M. inversa* Malloch & Cain.

Ascomata subglobose to globose, dark olive-green to black, non-ostiolate. Asci subglobose to globose, irregularly disposed, 8-spored. Ascospores one-septate, hyaline, smooth-walled. Conidia borne in clusters at the tips of simple phialides, one-celled, hyaline, smooth. Anamorph *Acremonium*. Isolated from herbivore dung.

NOTES.— The unispecific genus *Mycoarachis* was described in the cleistothecial family *Pseudeurotiaceae* and distinguished by dark olive-green to black ascomata, hyaline, one-septate ascospores, and an *Acremonium* anamorph. Later Benny & Kimbrough (1980) suggested that the fungus belonged in the *Hypocreales* because of the two-celled ascospores and *Acremonium*-like anamorph. Rehner & Samuels (1994, 1995) included the type culture in their molecular study and confirmed that *M. inversa* is a cleistothecial member of the *Hypocreales* related to *Bionectria*. Ogawa *et al.* (1997) reported the affinity of another cleistothecial genus, *Emericellopsis*, with *Mycoarachis* in a subclade of the *Bionectriaceae*.

Mycoarachis inversa Malloch & Cain, *Canad. J. Bot.* 48: 1822. 1970.

Anamorph: *Acremonium* sp.

Mycelium hyaline, hyphae septate, branched, 1–3 μm wide, occasionally developing very thick walls near the septa and swelling up to 7 μm wide. Ascomatal initials at first simple coils with filaments about 1–3 μm wide, later becoming compact and contorted as a result of abundant proliferation. Ascomata subglobose to globose, 50–200 μm diam, metallic in reflected light when dry, dark green to black, non-ostiolate; ascomatal wall 11–30 μm thick, consisting of a pale outer region and a darker inner region; outer region of hyaline to pale brown cells, 3–22 μm diam; inner region of dark brown, flattened, cells, 4–20 \times 2–10.5 μm . Asci subglobose to globose, 5.5–11 μm diam, evanescent, 8-

spored. Ascospores cylindrical to broadly ellipsoid, 5–5.5 \times 3–3.5 μm , with a constricted, single median septum dividing the spore into two equal globose cells, hyaline, smooth.

ANAMORPH.— Conidiophores arising from submerged mycelium, simple or sparingly branched, septate, tapering from the base to the apex, ending in a phialide, 14–35 \times 2–3.5 μm . Conidia ellipsoid, fusoid, ovoid, cylindrical or allantoid, 3–10 \times 1.5–3.5 μm , non-septate, hyaline, smooth-walled, borne in moist clusters at the tip of the conidiophores. Description modified from Malloch & Cain (1970).

HABITAT.— Isolated from cow-, elephant- and unidentified herbivore dung.

DISTRIBUTION.— Tanzania, Uganda, and United States (Nebraska), as reported by Malloch & Cain (1970).

HOLOTYPE.— UGANDA. Mweya Lodge: Queen Elizabeth National Park, isolated from elephant dung, 27 July 1966, Cain, Griffin & Krug (TRTC 66.2166f, not examined). Culture CBS 517.70.

ILLUSTRATIONS.— Malloch & Cain (1970, Figs. 20–25).

MYCOCITRUS A. Möller, *Bot. Mitt. Tropen* 9: 297. 1901.

Type: *M. aurantium* A. Möller.

= *Shiraiella* Hara, *Bot. Mag. (Tokyo)* 28: 274. 1914. — Type: *S. phyllostachydis* (Syd. & P. Syd.) Hara (= *Ustilago noidea phyllostachydis* Syd. & P. Syd.), recognized as *Mycocitrus phyllostachydis* (Syd. & P. Syd.) Doi.

Stroma well-developed, buff to rufous, clasping and surrounding the substratum. Ascomata immersed, with apices barely visible, densely gregarious, forming a single layer. Asci cylindrical, ascal apex simple. Ascospores ellipsoid, 1-septate, hyaline, spinulose. Anamorph *Acremonium*. On living stems of bamboo.

NOTES.— *Mycocitrus* is characterized by ascomata partially to fully immersed in the upper region of large, fleshy stromata that clasp and surround bamboo stems. Möller (1901) illustrated an *Acremonium*-like anamorph. Although the type specimen of *M. aurantium* probably no longer exists, an excellent illustration serves to characterize this species. The unispecific genus *Shiraiella* was established for *Ustilago noidea phyllostachydis*. Doi (1967a) was unable to locate the type specimen of *U. phyllostachydis* at B suggesting that it was destroyed. He designated a non-type specimen examined by Hara (TNS 209286) as the neotype and transferred *U. phyllostachydis* to *Mycocitrus*. *Mycocitrus* is recognized with these two species.