= *Sphaerostilbe caespitosa* Fuckel, Jahrb. Nassauischen Vereins Naturk. 27–28: 33. 1873.
≡ *Neonectria caespitosa* (Fuckel) Wollenw., Angew. Bot. 8: 192. 1926.

Anamorph: *Cylindrocarpon candidum* (Link) Wollenw., Fus. Autogr. Del., ed. 2, no. 655. 1926.

≡ *Fusidium candidum* Link, Observationes I, Mag. Ges. Naturf. Freunde Berlin 3: 6. 1809.

= *Fusidium fractum* Sacc. & Cav., N. Giorn. Bot. ital. 7: 308. 1900.
≡ *Cylindrocarpon fractum* (Sacc. & Cav.) Wollenw., Fus. Autogr. Del., ed. 1, no. 655. 1924.

Booth (1966) stated that *Neonectria caespitosa* is a synonym of *Nectria coccinea*, based on an examination of type material (K, isotype, Fuckel, Fungi rhenani 2533). Seifert (1985) examined the holotype of *S. caespitosa* at G and isotypes at BR and K and confirmed Booth's evaluation. *Nectria coccinea* was lectotypified by Booth (1959) with a Persoon specimen.

Specimen illustrated.— UNITED STATES. Maine: Washington Co., near Princeton, on *Fagus*, Dec 1934, E. Brower, V. Mentzer (BPI 551493).

Neonectria galligena (Bres.) Rossman & Samuels, *comb. nov.*

≡ *Nectria galligena* Bres., *in* Strasser, Verh. K.K. Zool.-Bot. Ges. Wien 51: 413. 1901.

Anamorph: *Cylindrocarpon heteronema* (Berk. & Broome) Wollenw., Z. Parasitenk. (Berlin) 1: 149. 1928.

≡ *Fusarium heteronema* Berk. & Broome, Ann. Mag. Nat. Hist. Ser. 3, 15: 1051. 1865.
= *Fusarium mali* Allesch., Ber. Bot. Ver. Landshut 12: 130. 1892.
≡ *Cylindrocarpon mali* (Allesch.) Wollenw., Z. Parasitenk. (Berlin) 1: 150. 1928.

This species was described and illustrated by Booth (1959) and Booth (1966), in which *Cylindrocarpon heteronema* is cited as the correct name for the anamorph.

Specimens illustrated:
'*Nectria*' *jungneri* in *N. mammoidea*-group. FRENCH GUIANA. Saül, Saut Mais, 17 km E from Saül, on bark of newly fallen log, 2 Nov 1986, A.Y. Rossman 2957, C. Feuillet & L. Skog (BPI 1107212). PUERTO RICO. Luquillo Mountains, Bisley Watershed, on branch of *Manilkara* sp., 8 May 1995, S.M. Huhndorf 1397, D.J. Lodge PR 2280, & G.J. Samuels (BPI 745420): Plate 33, e, g.

OPHIONECTRIA Sacc., Michelia 1: 323. 1878.

Lectotype, designated by Seaver (1909a): *O. trichospora* (Berk. & Broome) Sacc. (≡ *Nectria trichospora* Berk. & Broome).

Ascomata solitary to aggregated in small groups, hyphal stroma sometimes present, superficial, short ovoid to elongate–ovoid, red-orange to scarlet, KOH+ bay, not collapsing when dry, surface warted; warts of loose, globose, thick-walled, pigmented cells. Asci clavate, apex simple. Ascospores long-fusiform, multiseptate, hyaline, with faint longitudinal striations or smooth. Anamorph, where known, *Antipodium*. On decaying woody substrata.
Notes.— Saccardo proposed the genus *Ophionectria* with three species of *Nectria*-like fungi having very long, septate ascospores. Rossman (1977) circumscribed the genus based on the ascomatal wall structure, the long fusiform ascospores, and the unusual anamorph and retained only the type species. One other species has been added to the genus since then, namely *O. magniverrucosa* Rossman (1983).

Ophionectria trichospora (Berk. & Broome) Sacc., Michelia 1: 323. 1878. — Plate 22, j, k (page 96); Plate 34, a–c.

≡ *Nectria trichospora* Berk. & Broome, J. Linn. Soc., Bot. 14: 115. 1873.
≡ *Tubeufia trichospora* (Berk. & Broome) Petch, Ann. Roy. Bot. Gard. Peradeniya 5: 285. 1912.
= *Calonectria cinnabarina* Henn., Hedwigia 36: 220. 1897.
≡ *Ophionectria cinnabarina* (Henn.) Henn., Hedwigia 41: 7. 1902.
= *Calonectria ornata* A.L. Smith, J. Linn. Soc. Bot. 35: 18. 1901.
= *Calonectria theobromae* Pat., in Duss, Énum. Champ. Guadeloupe p. 81. 1903.
= *Ophionectria portoricensis* Chardón, Mycologia 13: 285. 1921.
[= *Ophionectria anomala* Petch, Trans. Brit. Mycol. Soc. 27: 143. 1944, non Racib. 1907].

Anamorph: *Antipodium spectabile* Piroz., Canad. J. Bot. 52: 1144. 1974.

Ascomata gregarious to scattered, superficial, sometimes seated on a white to bright-yellow subiculum of thick-walled, minutely warted, septate, 5–7.5 µm wide hyphae, each cell swollen at one end. Ascomata ovoid to cylindrical, often truncate at the apex, 400–600 µm high × 250–350 diam, red-orange to scarlet, KOH+ dark red, sometimes collapsing laterally when dried; covered with conspicuous, concolorous warts, 25–100 µm high, of loosely compacted, irregularly globose cells, 10–25 µm diam, with thickened, pigmented walls; ascomata often naked toward the apex; ostiole, 45–50 µm diam. Ascomatal wall of two regions: outer region 15–90 µm thick, of large, irregularly globose cells 10–25 µm diam, with thickened, pigmented walls forming a *textura globulosa*; inner region

7–10 µm thick, of hyaline, thin-walled, elongate cells. Asci clavate, 180–260 × 25–30 µm, apex simple, 8-spored, ascospores parallel, often twisted around each other. Ascospores long-fusiform, often somewhat bent, vermiform, 180–250 × 6–10 µm, 13–24-septate, the proximal end slightly inflated and bluntly rounded, the distal end tapering and narrowly rounded; walls thickened, hyaline, with faint longitudinal striations.

Anamorph: Mycelium sparse, superficial or submerged, with aerial conidiophores, white to yellow-orange, hyphae 5-7.5 µm wide, with small warts, becoming pigmented and thickened with age, often swollen at the septa. Conidia fusiform with beaked apex, 120–140 × 26–28 µm, 3–5-septate, beak 3–11 µm long, basal cell truncate, hyaline, smooth-walled.

Habitat.— On bark, dead wood and other plant debris, often among mosses and saprobic fungi.

Distribution.— Pantropical.

Illustrations.— Doi (1977, Fig. 5-6); Rossman (1977, Figs. 1–5; 1983, Fig. 19, Pls. 6F, 7 A–E); Pirozynski (1974, Fig. 1, anamorph only); Samuels *et al.* (1990, Fig. 32A); Subramanian & Bhat (1978a, Figs. 1–59).

Specimens illustrated.— COSTA RICA. Above El Silencio, near Tileran, on bark of newly killed log, 14 Sep 1964, G. Carroll 664 (BPI 1107322). GUYANA. Mazaruni region, no. VII, Mazaruni subregion, No. VII-2, foothills immediately S of Mt. Ayanganna, *ca* 1 km W of Pong Creek, elev. 550-600 m, 05°28′ N, 60°04′ W, swamp and montane forest dominated by *Inga*, *Dicymbe* and *Swartzia*, on recently dead tree, 26 Feb 1987, G.J. Samuels, G.J.S. 4829a, J.J. Pipoly, G. Gharbarran (NY). JAMAICA. Hanover Parish, Dolphin Head near Askenish, on decorticated wood, 22 Jan 1971, R.P. Korf *et al.*, culture derived from single ascospores produced anamorph, ex type culture ATCC 28509 (DAOM 139482 – holotype of *Antipodium spectabile*).

Notes.— Subramanian & Bhat (1978a) studied ascal development and conidial ontogeny of *O. trichospora* and presented detailed descriptions and illustrations.

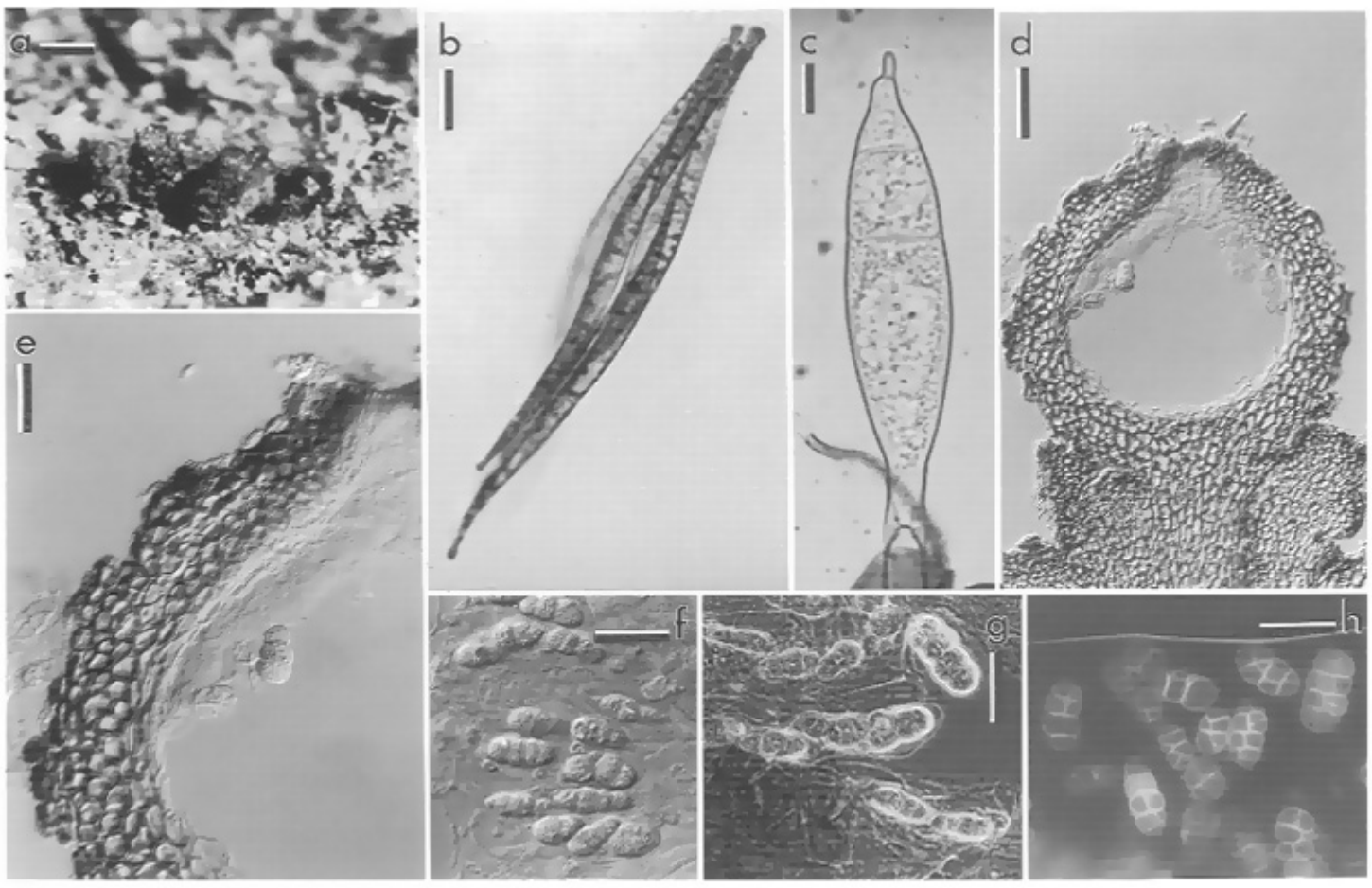

Plate 34. a–c. *Ophionectria trichospora* and its anamorph, *Antipodium spectabile*. a. Ascomata on natural substratum. b. Asci with ascospores. c. Conidium developing on conidiogenous cell. **d–h.** *Pleogibberella calami*. d. Median section of ascoma. e. Close-up of median section of ascomatal wall. f. Asci with ascospores and remnants of apical paraphyses. g. Asci with ascospores and remnants of apical paraphyses in phase contrast. h. Ascospores in fluorescence microscopy. a. BPI 1107322. b. Holotype – IMI. c. Holotype of *Antipodium spectabile*. d–h. Holotype – NY. Scale bars: a = 250 µm; b = 20 µm; c = 10 µm; d = 100 µm; e = 50 µm; f–h = 25 µm.

KEY TO THE SPECIES OF *OPHIONECTRIA*

1. Ascospores 3–5(–7)-septate, 58–105 × 6–7 μm; ascomata having very large, conical warts, up to 300 μm high; anamorph unknown; on thin bark of unidentified, dead twig; known only from Ecuador ..... *O. magniverrucosa*
1. Ascospores 13–24-septate, 180–250 × 6–10 μm; ascomata having tuberculate warts, up to 100 μm high; anamorph *Antipodium spectabile*; on bark of decaying woody substrata; pantropical ..... *O. trichospora*

PLEOGIBBERELLA Sacc., *in* Berl. & Voglino, Syll. Fung. Addit. 1–4: 217. 1886.

Type: *P. calami* (Cooke) Berl. & Voglino (≡ *Gibberella calami* Cooke).

Stroma well-developed, pseudoparenchymatous, dark purple, becoming black when dry. Ascomata superficial, aggregated on the stroma, globose to pyriform, dark purple, KOH+ black, surface scurfy. Asci clavate, 2–3-spored. Ascospores muriform, hyaline, smooth-walled. Anamorph not known. On fruits of *Calamus*.

NOTES.— Although similar in the dark ascomata, *Pleogibberella* is differentiated from *Gibberella* by large, muriform ascospores, a well-developed stroma, and occurrence on palm fruits. Despite the dark purple pigmentation, the stroma and ascomatal wall structure are reminiscent of members of *Nectria sensu stricto*, a group that includes several species having muriform ascospores. After soaking in lactic acid, the ascomatal wall cells of *P. calami* lose their dark purple pigments and become red-orange.

Pleogibberella calami (Cooke) Berl. & Voglino, Syll. Fung. Addit. 1–4: 217. 1886 (as '*calamia*'). — Plate 32, b; Plate 34, d–h.

≡ *Gibberella calami* Cooke, Grevillea 13: 8. 1884.

Stroma well-developed, spreading, completely surrounding the individual fruits on the rachis, up to 1 mm thick, dark purple, appearing black when dry, pseudoparenchymatous, of thick-walled, pigmented cells, 7–22 μm thick, forming a *textura angularis*, stroma intergrading with outer wall of ascomata. Ascomata superficial, aggregated on the stroma, globose to pyriform, 360–420 μm high × 318–360 μm diam, collapsing laterally or not at all, dark purple, appearing dark brown when dry, KOH+ black, surface slightly cracked, scurfy, or scaly, apical region often flattened, shiny, smooth. Ascomatal wall 60–72 μm thick, of two regions: outer region 42–60 μm thick, of thick-walled, pigmented cells, 10–16 μm diam, forming a *textura angularis*, outermost cells slightly darkened with encrusted dark pigments; inner region about 12 μm thick, of thin-walled, hyaline, elongate cells, 7–10 × 3–5 μm. Cells around the ostiole elongate, parallel toward the apex, becoming thin-walled, slightly inflated toward the apex, forming a distinct, flattened area. Asci clavate, thin-walled, soon dissolving, generally 2-spored, occasionally 3-spored. Ascospores broadly ellipsoid, 22–41.5 × 13.5–23 μm, tending to develop a median septum first, then one or two additional septa, ultimately becoming dictyosporous with 2–3 major transverse, 1–2 partially transverse septa, 1 irregular longitudinal septum, and 1–2 diagonal septa in the apical cells, with one or more guttules in each cell, hyaline, becoming yellow with age, smooth-walled.

HABITAT AND DISTRIBUTION.— Known only from the type specimen.

HOLOTYPE.— INDIA. Andhra Pradesh: Vizagapatam, on the fruits of *Calamus fasciculatus* (*Arecaceae*) (NY).

NOTES.— No anamorph was observed on the type and only known specimen of *Pseudogibberella calami*.

PSEUDONECTRIA Seaver, Mycologia 1: 48. 1909.

as nom. nov. for *Nectriella* Sacc. 1877, non Nitschke 1870.

Type: *P. rousseliana* (Mont.) Wollenw. 1931 (≡ *Nectria rousseliana* Mont.).

[≡ *Nectriella* Sacc., Michelia 1: 51. 1877, non Nitschke, 1870].

[≡ *Notarisiella* Sacc., *in* Clem. & Shear, Gen. Fungi p. 280. 1931 ≡ *Nectriella* Sacc. subgenus *Notarisiella* Sacc., Syll. Fung. 2: 452. 1883 ≡ *Lasionectria* (Sacc.) Cooke subgenus *Notarisiella* Cooke, Grevillea 12: 111. 1884]. — Type: *Notarisiella rousseliana* (Mont.) Clem. & Shear (≡ *Nectria rousseliana* Mont.), recognized as *Pseudonectria rousseliana* (Mont.) Wollenw.

Ascomata superficial, solitary, with an inconspicuous basal stroma, globose to pyriform, often with a pointed apex, pale yellow, yellow to scarlet, rarely orange or greyish yellow-green, KOH– or KOH+ slightly darker, yellow in lactic acid; ascomatal wall smooth, with or without sparse to numerous hyaline to orange setae or hairs; ascomatal surface of cells with irregularly thickened walls and joined by pores; ascomatal wall less than 20 μm thick, of one region. Asci narrowly clavate. Ascospores non-septate. Anamorph *Volutella*. On decaying leaves and twigs of *Buxaceae* (*Buxus* and *Pachysandra*).