



FIG. 2. A-C. *Peristomialis parilis*. A. Section through a mature perithecial wall (isotype, S). B. Cells at the surface of the perithecial wall. C. Asci and ascospores. B, C drawn from the isotype (NY). D-G. *Peristomialis paraparilis*. D. Section through a mature perithecial wall. E. Cells at the surface of the perithecial wall. F. Ascus and ascospores. G. Conidiophores and conidia. All drawn from the holotype. Lines = 10 μ m.

= *Nectria erythroxyliifoliae* Viégas, *Bragantia*, 3: 52. 1943.

Anamorph. None known.

Mycelium tan, spreading, thin; hyphae 3–4 μm wide, branched, septate. Perithecia scattered, solitary to gregarious, nonstromatic, easily removed from the substrate, globose, 130–170 (–190) μm diam., nonpapillate, becoming cupulate when dry; with scattered setae arising from cells of the upper half of the perithecial wall; setae stiff, erect, unbranched, aseptate, acute, 25–35 μm long \times ca. 10 μm wide at base, wall 2–3 μm .

Cells at surface of perithecial wall hyphal, cells ca. 3 μm wide, tightly compacted. Perithecial wall 10–15 μm wide, comprising a single region of \pm fusoid, ca. 7 \times 2 μm cells with walls ca. 1 μm thick; ostiolar canal periphysate.

Asci clavate, 35–40 \times 9–11 μm , apex simple; 8-spored, ascospores multiseriate, completely filling each ascus. Ascospores fusiform, (12.5–) 13.6–16.5(–17) \times (2.5–) 2.8–3.6(–4) μm , equally 2-celled, often deeply constricted at the septum and tending to disarticulate while still in the ascus, smooth, colorless.

Habitat. On leaves of *Erythroxyllum suberosum* St. Hil., not obviously fungicolous.

Known Distribution. Brazil, known only from type.

Holotype. Brazil. Minas Gerais: Cerrado, Lagoa Santa, on leaves of *Erythroxyllum suberosum*, Viégas, Barreto & Krug, 8 Apr 1936 (IACM).

Notes. In spite of the thick-walled perithecial setae, it is unlikely that *T. erythroxyliifoliae* is closely related to other species of *Trichonectria*.

II. *Peristomialis* (Phillips) Boudier, *Hist. Class. Discom.* Europe 116. 1907.

= *Mollisia* [subg.] *Peristomialis* Phillips, *Man. Brit. Discom.* 201. 1887. Lectotype: *P. berkeleyi* Boudier, *vide* Rogerson, *Mycologia* 62: 897. 1970.

Perithecia superficial, nonstromatic, white to yellow, KOH+ or KOH–. Perithecial wall < 20 μm wide, perithecial apex discoidal, the disc formed of intertwined hyphae that may grow outwardly in triangular fascicles to form a distinct crown of hyphal hairs.

Included species: *Peristomialis corynospora*, *P. berkeleyi*, *P. dentifera*, *P. dictyospora*, *P. leucocarpa*, *P. paraparilis*, *P. parilis*.

Peristomialis was originally described with six species; Rogerson (1970) designated *P. berkeleyi*

as the lectotype. I (Samuels, 1976b) have previously maintained *Peristomialis* as a synonym of *Nectria* but *P. berkeleyi* shares few characters with *N. cinnabarina* (Tode: Fries) Fries, the type species of *Nectria*. Species of *Peristomialis* are easily recognized by the anatomy of the perithecial wall and by the apical disc, especially those species the perithecia of which have triangular hyphal hairs radiating from the perithecial apex. These fungi are most often found on decaying herbaceous debris where the true substrate may be other fungi; *P. parilis* is unequivocally associated with immersed ascomycetes on leaves of *Podocarpus* sp.

Perithecia of some species of *Nectria* (e.g., *N. suffulta* Berk. & Curtis, *N. sylvana* Mouton) resemble those of species of *Peristomialis* in having triangular, fasciculate hyphal hairs arising from the surface of the perithecial wall. However, the perithecial wall anatomy of these species is very different from the wall anatomy of perithecia of *Peristomialis* species.

Anamorphs, known for *Peristomialis berkeleyi*, *P. corynospora*, *P. dentifera*, *P. leucocarpa*, and *P. paraparilis* are either species of *Acremonium* or *Cephalosporiopsis* (herewith and Samuels, 1976b).

5. *Peristomialis parilis* (H. Sydow) Samuels, *comb. nov.* (Fig. 2A–C).

= *Nectria parilis* H. Sydow, *Ann. Mycol.* 28: 121. 20 May 1930.

Anamorph. None known.

Mycelium not evident. Perithecia solitary or in groups of a few, superficial, nonstromatic, globose, 180–340 μm diam.; with a flat apex 110–150 μm diam.; and sometimes with short, fasciculate, triangular hairs or with wart-like processes, each comprising intertwined hyphae, growing out from the apical disc; smooth, not collapsing when dry, pale yellow to white, not changing color in 3% KOH.

Surface of perithecial wall *textura epidermoidea*. Perithecial wall 20–25 μm wide, composed of intertwined hyphae, cells in section elliptical, ca. 5 \times 3 μm , walls ca. 1 μm thick; perithecial apex of intertwined hyphae; ostiolar canal periphysate.

Asci clavate, (40–) 45–65(–75) \times 8–11(–13) μm , apex with an obscure ring, sometimes appearing simple; 8-spored, ascospores biserial, complete-

ly filling each ascus. Ascospores fusiform, $14.5\text{--}20 \times (2.5\text{--})3\text{--}5(-5.4) \mu\text{m}$, equally 2-celled, slightly constricted, markedly spinulose, colorless.

Habitat. On herbaceous debris including leaves of *Podocarpus* and bamboo culms.

Isotypes. Venezuela. Aragua: prope Colonia Tovar, in foliis *Podocarpi coriacei* Rich., saepe in consortio aliorum fungorum, *H. Sydow* (Fungi exotici exsiccati 838), 19.1.1928 (NY, S).

Additional Specimens Examined. FRENCH GUIANA. Saül, 200 m, on decaying culm of *Guadua* sp., *Samuels 3777*, 3–16 Feb 1986 (NY); ca. 150 km S of St. Laurent du Maroni, Citron, Paul Isnard area, Mt. Lucifer, on black fungus on dead bamboo culm, *Samuels 4158*, 10–14 Mar 1986 (CAY, BPI, PDD, NY). USA. CALIFORNIA: On bark of *Eucalyptus globulus* La Bill., *Dr. Harkness 2359*, date of collection not given (K, as type of *Nectria coronata*). VENEZUELA. Data as holotype, *H. Sydow* (NY: Fungi exotici 759; issued as *Physalacria tenera* H. Sydow. A probable isotype of *Nectria parilis*).

Notes. *Peristomialis parilis* is not always obviously fungicolous but perithecia of one of the isotypes (NY: Fungi exotici 838) clearly grow out of the ascomata of a black, immersed ascomycete. Perithecia of the specimens from French Guiana are associated with several fungi including the hyphomycete *Acrodictys bambusicola* M. B. Ellis. Ascospores (35) of the isotype collections measure $(13.5\text{--})14.5\text{--}18.2(-21) \times (2.5\text{--})2.7\text{--}3.5 \mu\text{m}$ and are shorter and narrower than spores found in the collections from French Guiana [$n = 32$, $(15.3\text{--})16.8\text{--}21(-27) \times 4.5\text{--}5.5 \mu\text{m}$] and California [$n = 22$, $(15\text{--})15.7\text{--}19.4(-20) \times 3.9\text{--}4.2(-4.5) \mu\text{m}$].

The specimen from California cited above was deposited as *Nectria coronata* without any indication of the authority of the species or of the identifier. The perithecia are clearly distinct from *N. coronata* Penzig & Saccardo; no reference to another use of the name *N. coronata* has been found, thus the name used in this connection is assumed to be a herbarium name.

Peristomialis parilis is most closely related to *P. paraparilis*, differing in having shorter, striate ascospores.

6. *Peristomialis paraparilis* Samuels, sp. nov.
(Fig. 2D–G).

Peristomialidis parili (H. Sydow) Samuels similis sed ascosporis $(19\text{--})21.5\text{--}24.5(-25.5) \times 4\text{--}5 \mu\text{m}$.

Status anamorphicus *Acremonium* sp.

Holotypus. French Guiana (NY: *Samuels 4159*).
Anamorph. *Acremonium* sp.

Mycelium not evident. Perithecia solitary to gregarious, superficial, nonstromatic, anchored to substrate by densely compacted and intertwined hyphae, easily removed from the substrate, globose to subglobose, $155\text{--}185 \times 155\text{--}175 \mu\text{m}$; with a flat apical disc $100\text{--}130 \mu\text{m}$ diam.; smooth, not collapsing when dry, pale yellow, nearly white, not changing color in 3% KOH; perithecial contents pale orange.

Cells at the surface of the perithecial wall forming *textura epidermoidea*. Perithecial wall 20–25 μm wide, comprising a single region of intertwined hyphae that, at the apex, form an apical disc; ostiolar opening formed by periphyses that grow through the hyphal layer of the apical disc, ostiolar canal periphysate.

Asci clavate, $(63\text{--})65\text{--}75(-80) \times (12.5\text{--})13.5\text{--}17(-18) \times 6.5\text{--}7.5(-8) \mu\text{m}$, apex simple; 8-spored, ascospores biseriate, completely filling each ascus. Ascospores fusiform, $(19.5\text{--})21.5\text{--}24.5(-25.5) \times 4\text{--}5 \mu\text{m}$, equally 2-celled, not constricted at the septum, becoming coarsely striate, colorless.

Habitat. On black mycelium on bamboo culm.

Known Distribution. French Guiana, known only from the type.

Etymology of the Specific Epithet. Refers to the similarity of the perithecia to those of *P. parilis*.

Holotype. French Guiana. Ca. 150 km S of St. Laurent du Maroni, Citron, Paul Isnard area, Mt. Lucifer, on black fungus on dead bamboo culm, *Samuels 4159*, 7–14 Mar 1986 (NY; isotype CAY).

Notes. *Peristomialis paraparilis* falls neatly between *P. parilis* and *P. berkeleyi* (see Samuels, 1976b) in having perithecia of the former and ascospores of the latter.

The type collection of *Peristomialis paraparilis* is associated with *Acrodictys bambusicola* and other dark hyphal and dark-spored fungi.

7. *Peristomialis leucocarpa* Samuels, sp. nov.
(Fig. 3A–C).

Peristomialidis dentiferae Samuels similis sed ascosporis $(7.5\text{--})8.5\text{--}10(-11) \times 2\text{--}2.7(-3) \mu\text{m}$.