

Notes on and additions to the Niessliaceae (Hypocreales)

Gary J. Samuels and Margaret E. Barr

Abstract: The ascomycete family Niessliaceae presently includes the genera *Cryptoniesslia*, *Melanopsamma*, *Niesslia*, *Taiwanascus*, *Trichosphaerella*, and *Valetoniella*. To this assemblage are added the newly described *Circinoniesslia*, with *C. nectriae*, and *Valetoniellopsis*, with *V. laxa* as their respective type species. The synonymy of *Pseudorhynchia* with *Trichosphaeria* is not accepted, and *Pseudorhynchia* is redescribed based on its type species. *Melanopsamma pomiformis* is redescribed and illustrated. Other newly described species are *Melanopsamma verrucosa*, *Valetoniella paucicornata*, and *Valetoniella claviornata*. The family Taiwanascaceae, described for the cleistothecial *Taiwanascus tetrasporus*, is placed in synonymy with the Niessliaceae. *Trichosphaerella arecae* is transferred to *Neorehmia*, and that genus is excluded from the family.

Key words: Ascomycetes, *Cryptoniesslia*, *Melanopsamma*, *Niesslia*, *Pseudorhynchia*, systematics, *Taiwanascus*, *Trichosphaerella*, *Valetoniella*, *Valetoniellopsis*.

Résumé : Présentement, la famille ascomycète Niessliaceae inclut les genres *Cryptoniesslia*, *Melanopsamma*, *Niesslia*, *Taiwanascus*, *Trichosphaerella* et *Valetoniella*. À cet ensemble les auteurs ajoutent le *Circinoniesslia* nouvellement décrit et le *Valetoniellopsis* avec *C. nectriae* et *V. laxa* comme espèces types respectivement. La synonymie du *Pseudorhynchia* avec *Trichosphaeria* est rejetée, et le *Pseudorhynchia* est redécrit en se basant sur son espèce type. Les auteurs redécrivent et illustrent le *Melanopsamma pomiformis*. Les autres espèces nouvellement décrites sont les *Melanopsamma verrucosa*, *Valetoniella paucicornata* et *Valetoniella claviornata*. La famille Taiwanascaceae, décrite pour accommoder l'espèce cleistothéciale *Taiwanascus tetrasporus*, est placée en synonymie avec la famille Niessliaceae. Le *Trichosphaerella arecae* est transféré au genre *Neorehmia* et ce genre est exclu de la famille.

Mots clés : ascomycètes, *Cryptoniesslia*, *Melanopsamma*, *Niesslia*, *Pseudorhynchia*, systématique, *Taiwanascus*, *Trichosphaerella*, *Valetoniella*, *Valetoniellopsis*.

[Traduit par la rédaction]

Introduction

The family Niessliaceae was erected by Kirschstein (1939) to accommodate an assortment of taxa having small, dark, superficial, saprotrophic, setose perithecioid ascomata. Petrak (1940) noted that the family, as envisioned by Kirschstein, was not natural and included Sphaeriales as well as Dothideales. Barr (1990) proposed that the family be accepted in a narrow sense and removed it from the Sphaeriaceae (Müller and von Arx 1962, 1973) or Trichosphaeriaceae (Hawksworth et al. 1983; Barr 1983; Eriksson and Hawksworth 1990) to the Hypocreales. This was because of the presence of short periphysoids in some species, as well as ostiolar periphyses, and the similarities of hyphomycetous anamorphs with phialidic conidiogenesis and despite the darker pigmentation of the peridium. Eriksson and Hawksworth (1991, 1993) and Hawksworth et al. (1995)

accepted both the limited family and its disposition in the Hypocreales.

The genera accepted in the Niessliaceae form minute to small, often collabent, perithecioid ascomata, superficial or occasionally immersed, on a slight or well-developed hyphal or crustose subiculum. The species are saprotrophic or hypersaprotrophic. The peridium is usually narrow, the small cells in surface view often forming a network (*textura epidermoidea*) formed by dark wall and light cell contents. In many of the taxa, setae arise from the peridial surface. A minute apical opening or papilla is typical, and the ostiolar canal is periphysate. The hamathecium is composed of delicate periphysoids, visible in median vertical section of ascomata, especially in species with larger ascomata. Paraphyses are lacking. The unitunicate asci are thin walled; the refractive, nonamyloid apical ring is usually narrowly discoid but may be tubular. The ascospores are hyaline or lightly pigmented, uniseptate, and may disarticulate at maturity. The genera are separated on the various types of ascoma surface vestiture or lack thereof, the presence in one genus of immersed ascomata and in one of disarticulating ascospores, the latter a feature shared by some representatives of the Hypocreaceae.

Cleistothecia of *Taiwanascus tetrasporus* Sivan. & H.S. Chang (Sivanesan and Chang 1997), proposed as a monotypic new genus, bear brown setae that branch more or less dichotomously at the apex, each branch terminating in

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a darkened thickening. Asci are unitunicate and thin walled, and the ascospores are bicellular and aculeate. The cleistothelial peridium is darkly pigmented, apparently fleshy, or at least not carbonaceous, and 20 μm or less wide. There was no hamathecium, and no anamorph was linked to the fungus. Because Sivanesan and Chang were unable to place this genus in any family known to them, they proposed the new family Taiwanascaceae Sivan. & H.S. Chang. We acknowledge that the seemingly unusual ascomatal setae of *T. tetrasporus* are not necessarily indicative of the Niessliaceae and that the cleistothelial condition, which often involves loss of a hamathecium and secondary peridial thickening (Malloch 1981; Samuels and Candoussau 1996), is common in the pyrenomycetes and could have been arrived at independently of the Niessliaceae. Nonetheless, apart from the cleistothelial nature of the ascoma, all the known characters of *T. tetrasporus* are consistent with the Niessliaceae, which we propose is the correct family for *Taiwanascus* Sivan. & H.S. Chang.

Wallrothiella Sacc. was included in the Niessliaceae by Eriksson and Hawksworth (1993) and Hawksworth et al. (1995). The lectotype species is *Wallrothiella congregata* (Wallr.) Sacc. Von Arx and Müller (1954) were unable to locate specimens of the species, which was described as forming small, glabrous, apically depressed ascomata on rotting wood of *Salix*, with cylindrical asci 20 \times 2 μm , and

globose ascospores 2 μm diam. A North American collection (USA: NEW HAMPSHIRE: White Mountains National Forest, Jericho, Rocky Branch Trail, on rotting *Betula* wood, 12 Aug 1963, M.E. Barr 4063a, NY) agrees in general with the species description. The asci and ascospores are somewhat larger, 25–35 \times 4–5 μm and 3–3.5 μm , respectively. Delicate paraphyses are present. This taxon seems to fit better in the Trichosphaeriaceae, near the setose genus *Trichosphaeria* Fuckel as von Arx and Müller (1954) had suggested, rather than in the Niessliaceae as Barr (1990) and Eriksson and Hawksworth (1993) had disposed of it. *Wallrothiella subiculosa* Höhn. and its anamorph *Pseudogliomastix protea* (Sacc.) W. Gams were redescribed by Hughes and Dickinson (1968), Gams (1971), and Gams and Boekhout (1985). That species appears instead to be related to *Chaetosphaeria* (Sordariales).

Materials and methods

Single ascospores were isolated on cornmeal agar amended to a total of 2% dextrose (CMD, Difco) with the aid of a micromanipulator. Colony characters were taken from CMD. Herbarium specimens were rehydrated by brief immersion in 3% KOH. All measurements were made from either KOH or water. Sections of ascomata were made with a cryostat. Frequently cited collectors are abbreviated as MEB (Margaret Barr) and GJS (Gary Samuels).

Key to recognized genera of Niessliaceae

- 1a. Ascomata glabrous or bearing conidiophores; ascospores not disarticulating into partspores *Melanopsamma*
 1b. Ascomata setose; ascospores disarticulating or remaining intact 2
- 2a. Ascomatal "setae" composed of agglutinated, septate, hyphal strands *Pseudorhynchia*
 2b. Ascomatal setae composed of separate, aseptate, or septate structures 3
- 3a. Ascospores disarticulating into minute partspores; ascomata bearing tapered, pointed setae *Trichosphaerella*
 3b. Ascospores not, or rarely, disarticulating into partspores 4
- 4a. Ascomata bearing lax setae, lobed at the tips *Valetoniellopsis*
 4b. Ascomata bearing stiff setae, tapered to a point and pointed or apically branched 5
- 5a. Ascomata bearing apically branched setae 6
 5b. Ascomata bearing unbranched, tapered, unornamented, pointed setae 7
- 6a. Ascomata cleistothelial *Taiwanascus*
 6b. Ascomata perithecial *Valetoniella*
- 7a. Ascomatal setae circinate curved, septate, lightly pigmented *Circinoniesslia*
 7b. Ascomatal setae straight or nearly so, usually aseptate and darkly pigmented 8
- 8a. Ascomata immersed in substrate; setae very short *Cryptoniesslia*
 8b. Ascomata superficial on subiculum; setae short to elongate *Niesslia*

Taxonomy

(1) *Circinoniesslia* Samuels & M.E. Barr, gen.nov.
 Ascomata papillata, brunnea, superficialia. Setae circinatae septatae, brunneae. Peridia brunnea circa 10 μm lata. Asci unitunicati, paraphysati. Ascospores hyalinae, uniseptatae. Typus generis *Circinoniesslia nectriae* Samuels & M.E. Barr.

Circinoniesslia nectriae Samuels & M.E. Barr, sp.nov.

Figs. 1–4

Ascomata globosa (75–)106–172(–224) μm diametro. Setae (7–)23–51(–65) μm longae, ad basim (3–)5–10(–11) μm

latae. Peridia circa 10 μm crassa, cellulae superficiales (3.0–)4.0–6.5(–7.0) μm . Asci oblongi (26–)29–37(–41) \times (8.0–)9.5–12.5(–16.0) μm . Ascospores ellipsoideae (6.5–)7.5–9.0(–10) \times (3.0–)3.5–4.5(–5.0) μm , verrucosae vel tuberculatae. Anamorph ignotis. Holotypus ad *Bionectriam* sp., Puerto Rico, Luquillo Mts., El Verde Research Area, elev. 350, 19 Feb. 1996, a G.J. Samuels, H.-J. Schroers & D.J. Lodge, GJS 8028 lectus, in BPI depositus.

ANAMORPH: None known.

Ascomata superficial, scattered on ascomata of species of *Bionectria* or *Nectria* or on surrounding bark, globose with

papillate apex, (75–)106–172(–224) μm diameter, bearing a crown of rather few (8–11) brown, septate, circinately coiled setae, (7–)23–51(–65) μm long, (3–)5–10(–11) μm wide at base tapering to 2–2.5 μm at blunt tip; peridium brown, in surface view *textura angularis*, in side view of few rows of flattened, angular cells (3.0–)4.0–6.5(–7.0) μm in face view, ca. 10 μm wide in side view. Asci few, (26–)29–37(–41) \times (8.0–)9.5–12.5(–16.0) μm , oblong, apical ring narrowly discoid, nonamyloid, perhaps faintly chitinous, paraphysate. Ascospores (6.5–)7.5–9.0(–10) \times (3.0–)3.5–4.5(–5.0) μm , hyaline, ellipsoid, uniseptate; wall verrucose to tuberculate.

MATERIAL EXAMINED: FRENCH GUIANA: ca. 15 km SW of Säul toward Mt. Galbao, 03°50'–60'N, 53°20'–30'W, elev. 600–650 m, on *Nectria haematococca* Berk. & Broome, Jan. 1996, G.J. Samuels 2907c & J. Boise, NY. PUERTO RICO: Caribbean National Forest, Luquillo Mts., Bisley Experimental Watershed, Watershed No. 3, elev. 350–400 m, on *Nectria jungneri* Henn., 21 Feb. 1996, GJS 8062, H.-J. Schroers & D.J. Lodge, BPI; Luquillo Mts., El Verde Research Area, elev. 350 m, 19 Feb. 1996, on *Bionectria* sp., GJS 8028, H.-J. Schroers & D.J. Lodge, holotype, BPI.

One of the diagnostic features of the family Niessliaceae is the formation of setae from the ascomal surface. Within each genus there is no variation in the form of the setae. Thus, while there is an overall similarity among the members of the family in spore, peridial, and anamorph characters, generic differences are manifested in the setae. In general the setae are stiff, straight and pointed, or branched at the terminus and aseptate. The setae of *Circinoniesslia* are exceptional in being septate, blunt, and circinate or arcuate. When viewed from above with the stereo microscope, the setose ascospores give the impression of small animals, the mouths of which are fringed with graceful whiskers.

(2) *Cryptoniesslia*

Cryptoniesslia Scheuer is based on *C. setulosa* Scheuer (Scheuer 1993). Ascospores of this taxon are immersed in dead leaves of *Carex arenaria* L.; they bear short apical setae, and

ascospores are elongate, resembling those of *Niesslia erysipheoides* (Ellis & Everh.) M. E. Barr (Barr 1993). At present *C. setulosa* is known only from England, and no anamorph is known for it.

(3) *Melanopsamma*

Melanopsamma Niessl (Verh. Naturf. Ver. Brünn 14: 209. 1876, emend. Sacc.; *Michelia*, 1: 347. 1878) forms glabrous, collabent ascospores, the peridium of which is reddish brown and two- or three-layered, often wider than that in other members of the Niessliaceae.

The genus was not validated until Saccardo took up the name and accepted five species. The first of these, *M. pomiformis* (Pers.:Fr.) Sacc., was designated as lectotype species by von Höhnel (1919), who then declared the genus to be a synonym of *Nectria* Fr. He transferred the species as *N. pomiformis* (Pers.:Fr.) Höhn. and briefly discussed the other four species without disposing of these. He also implicated *Fuckelina albipes* (Berk. & Broome) Höhn. as the anamorph in the developmental cycle.

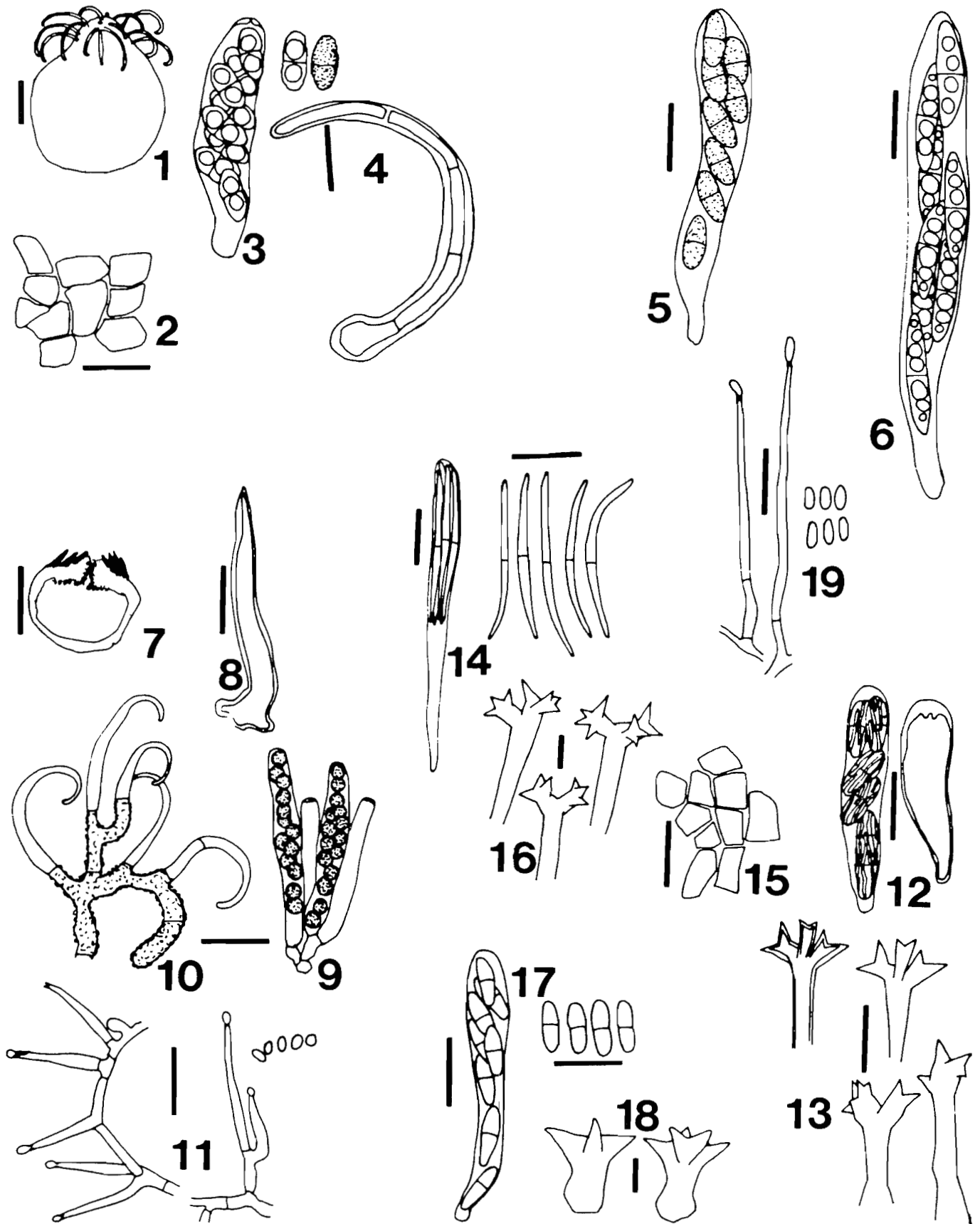
Munk (1957) accepted *Melanopsamma* as a genus in the Nectriaceae (Hypocreaceae). Booth (1957) considered *Melanopsamma* a member of the Sphaeriales because of peridium pigmentation. He provided a detailed description and illustrations of both teleomorph and anamorph, as a species of *Stachybotrys* Corda, for *M. pomiformis*. Müller and von Arx (1962) considered *Melanopsamma* a synonym of *Chaetosphaeria* Tul. & C. Tul., as did Eriksson and Hawksworth (1990) later. Eriksson and Hawksworth (1993) and Hawksworth et al. (1995), however, accepted *Melanopsamma* in the Niessliaceae. Booth detailed the synonymy of *Melanopsamma pomiformis*, and Barr et al. (1986) added to this *Sphaeria exigua* Cooke & Peck. The peridium is similar to that seen in some members of *Nectria* s.l. (e.g., the *Nectria arenula* (Berk. & Broome) Berk. group; Samuels 1978), except for pigmentation. Many additional species have been attributed to *Melanopsamma*, but the majority of those examined belong elsewhere in quite disparate genera. Three species are known in North America, readily separated as the following key to accepted species shows.

Key to accepted North American species of *Melanopsamma*

- 1a. Peridium of ascospores three layered, the outermost layer wide, sometimes bearing conidiophores and conidia of *Stachybotrys* anamorph. *M. pomiformis*
 1b. Peridium of ascospores two layered; anamorph unknown. 2
 2a. Peridium of reddish brown pseudoparenchymatous cells *M. melanostigma*
 2b. Peridium of lightly pigmented pseudoparenchymatous cells, often forming wartlike protrusions. *M. verrucosa*

Melanopsamma pomiformis (Pers.:Fr.) Sacc.; *Michelia* 1: 347. 1878
 Figs. 20–22
 = *Sphaeria pomiformis* Pers.:Fr.; *Syst. Mycol.* 2: 455. 1823 (basionym)
 = *Melanomma pomiformis* (Pers.:Fr.) Nitschke in *Fuckel*; *Symb. Mycol.* 159. 1870
 = *Eriosphaeria pomiformis* (Pers.:Fr.) Sacc.; *Michelia*, 1: 33. 1877

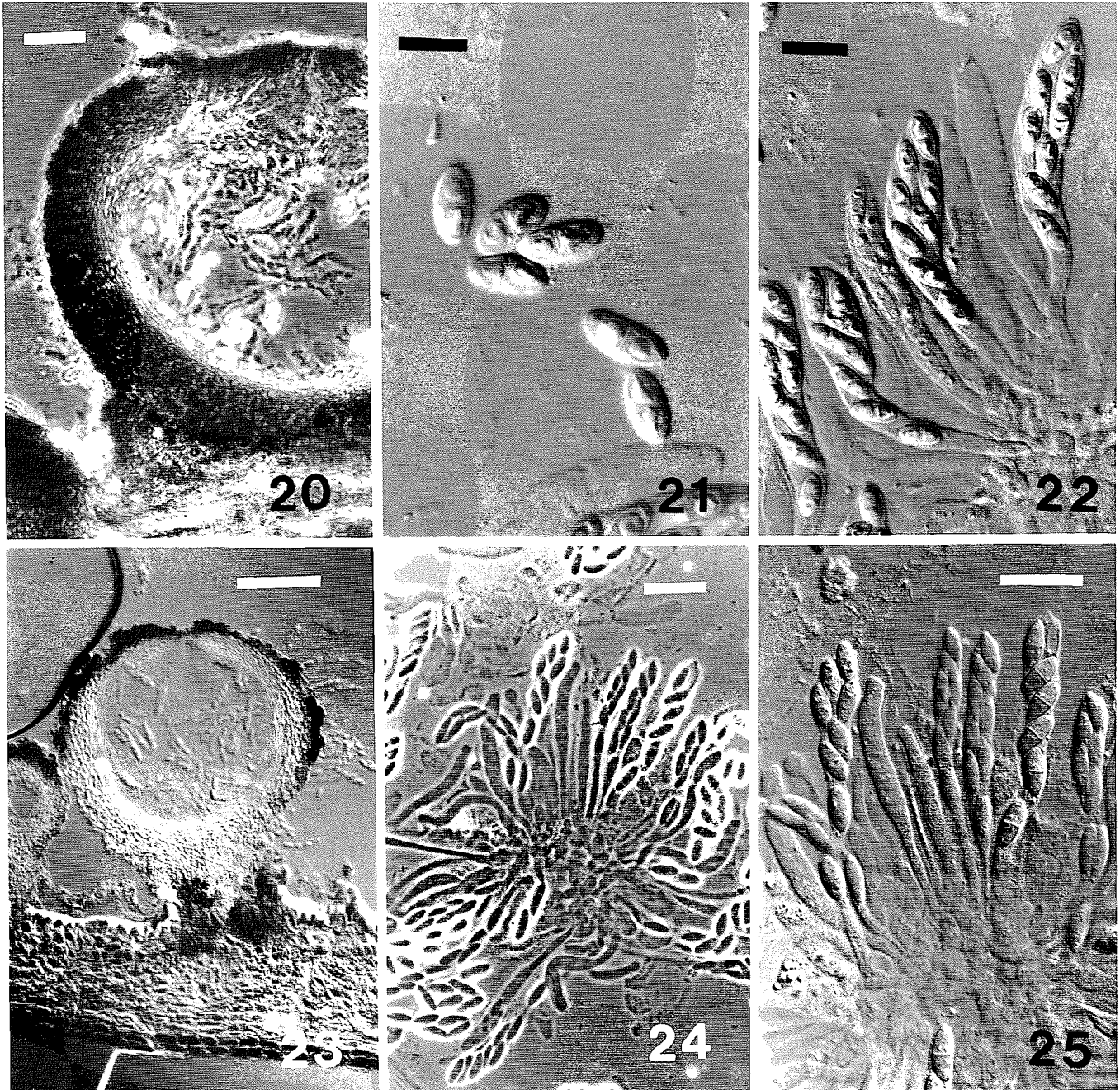
= *Psilosphaeria pomiformis* (Pers.:Fr.) Cooke; *Grevillea*, 16: 50. 1887
 = *Nectria pomiformis* (Pers.:Fr.) Höhn.; *Sitzungsber. Kaiserl. Akad. Wiss. Math. Naturwiss. Kl. Abt. 1*, 128: 32. 1919
 = *Chaetosphaeria pomiformis* (Pers.:Fr.) E. Müller in Müller & von Arx; *Beitr. Kryptogamenfl. Schweiz* 11(2): 588. 1962



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Figs. 1–19. Members of the Niessliaceae. Figs. 1–4. *Circinoniesslia nectriae* (GJS 8028). Fig. 1. Habit sketch of an ascoma. Fig. 2. Cells at surface of peridium. Fig. 3. Ascus and two discharged ascospores. Fig. 4. Seta from ascomal apex. Fig. 5. *Melanopsamma melanostigma*, ascus and ascospores (BPI 600361). Fig. 6. *Pseudorhynchia polyrhynchia*, ascus and ascospores (GJS 7714). Figs. 7–11. *Trichosphaerella decipiens* (GJS 4230). Fig. 7. Sketch of a median, longitudinal section of an ascoma showing ostiolar canal with periphyses, narrow ascomal wall, and setae. Fig. 8. Seta. Fig. 9. Asci with ascospores. Fig. 10. Hyphae of the subiculum showing coiled tips. Fig. 11. Conidiophores and conidia from CMD. Figs. 12 and 13. *Valetoniella crucipila* (GJS 8567a). Fig. 12. Two asci and ascospores. The ascus on the right is immature but shows the apex. Fig. 13. Setae. Figs. 14–16. *Valetoniella claviornata* (MEB 6508). Fig. 14. Ascus and discharged ascospores. Fig. 15. Cells at surface of peridium. Fig. 16. Setae. Figs. 17 and 18. *Valetoniella pauciornata* (GJS 1907). Fig. 17. Ascus and discharged ascospores. Fig. 18. Setae. Fig. 19. *Valetoniellopsis laxa* (GJS 96-174), conidiophores and conidia from CMD. Scale bars = 10 μm except in Figs. 1 and 7, where scale bars = 50 μm .

Figs. 20–22. *Melanopsamma pomiformis*. Fig. 20. Median, longitudinal section through a mature ascoma (BPI 612162). Fig. 21. Discharged ascospores (BPI 612164). Fig. 22. Asci, four with ascospores (BPI 612164). **Figs. 23–25.** *Melanopsamma verrucosa* (BPI 1105283). Fig. 23. Median, longitudinal section through a mature ascoma. Fig. 24, 25. Asci and ascospores. Scale bars: Fig. 20, 50 μm ; Fig. 21, 10 μm ; Figs. 22 and 25, 20 μm ; Fig. 23, 100 μm ; Fig. 24, 25 μm .



= *Eriosphaeria raripila* Sacc.; Nuovo Giorn. Bot. Ital. 7: 326. 1875

= *Sphaeria (Denudatae) exigua* Cooke & Peck in Peck; Annu. Rep. N.Y. State Mus. for 1876, 30: 65. 1878

≡ *Zignoëlla exigua* (Cooke & Peck) Sacc.; Syll. Fung. 2: 215. 1883

ANAMORPH: *Stachybotrys albipes* (Berk. & Broome) S.C. Jong & E.E. Davis (Booth 1957; Jong and Davis 1976).

Ascomata gregarious, superficial, blackish, globose becoming collabent, 200–430 μm diam.; apex short papillate, ostiole periphysate; peridium of three regions. Outer region 20–50 μm wide, of slightly compressed, small, reddish brown cells; middle region 9–20 μm wide, of numerous rows of compressed pallid cells; inner region of hyaline, compressed cells; surface dull to shining, glabrous or at times bearing conidiophores. Asci 50–84 \times 11–16 μm , stipe to 15–18 μm long, eight spored or less; apical ring discoid. Periphysoids conspicuous in median section, deliquescent above asci. Ascospores (9–)11–16(–25) \times (3.0–)4.5–7.0(–7.5) μm , hyaline to slightly yellowish, ellipsoid, uniseptate, not constricted; wall smooth or finely verruculose; minute guttules or one or two globules per cell; uniseriate or partially biseriate in the ascus.

On decorticated wood, north temperate zone.

MATERIAL EXAMINED: CANADA: sine loc, *Platanus* sp., 6 June 1891, *J. Dearness* 678, NY. ENGLAND: *C.B. Plowright*, Sphaer. Brit. Fasc. 1, n. 68, NY. GERMANY: Eggersdorf bei Strangeberg, *Pyrus* L. (= *Malus domestica* Borkh.), July 1897, *P. Sydow*, Mycotheca Marchica 4745, NY. ITALY: Padova, *Celtis australis*, Jan. 1881, *Bizzozzeri*, Saccardo Mycotheca veneta 1479, NY; Vallombrosa (Firenze), *Salix caprea*, Jan. 1898, *Cavara* (D. Saccardo, Mycotheca ital. 636), BPI 612169; Apennines, *Fagus sylvatica*, M. Calenzone, Autumn, *Cavara*, Fungi Longobardiae exs. 233, BPI 612165; prope Papiam, aestate, *Aesculus hippocastanum*, Cavara, Fungi Longobardiae exs. 170, BPI 612162; *Fagus sylvatica*, 11 Aug. 1900, *M. Pargine*, BPI 612164 ex herb. Ciferri. SWEDEN: Tragsund, *Sorbus*, 23 June 1912, *C.L. Shear*, BPI 61217. USA: MAINE: Abol Field near Baxter St. Park, *Acer saccharum* Marsh., 6 July 1962, *MEB* 3334, NY. NEW YORK: Otsego Co., Richfield Springs, decaying wood, Jul., *G.W. Clinton*, NYS, ISO-TYPE of *Sphaeria exigua*. WEST VIRGINIA: *Juglans*, Feb. 1934, *T.J. Grant*, FP 58580, BPI 612167.

Melanopsamma melanostigma (Cooke & Ellis) Ellis; Cat. Plants N.J. 517. 1890 Fig. 5

≡ *Sphaeria (Pertusae) melanostigma* Cooke & Ellis; Grevillea 6, 13: 1877 (basionym)

≡ *Wallrothiella melanostigma* (Cooke & Ellis) Sacc.; Syll. Fung. 1: 456. 1882

≡ *Psilosphaeria melanostigma* (Cooke & Ellis) Cooke; Grevillea, 16: 50. 1887

ANAMORPH: None known.

Ascomata gregarious, superficial through wood fibers, globose, scarcely collabent, 138–220 μm diam.; peridium two layered, externally reddish brown (in 3% KOH) *textura epidermoidea*, ca. 10 μm , inner layer compressed, hyaline cells, surface glabrous, dull blackish. Asci 34–58(–78) \times 6–8(–11) μm , apex broad, apical ring not seen. Periphysoids extending downward among tips of asci. Ascospores

7–9(–10) \times (2.5–)3.5–4.0(–5.0) μm , hyaline, ellipsoid, uniseptate; wall surface slightly roughened; one or two globules per cell, uniseriate to partly biseriate in the ascus.

In decorticated areas of living *Quercus* sp., known only from the type locality.

MATERIAL EXAMINED: USA: NEW JERSEY: Gloucester Co., Newfield, Jan. 1877, *J.B. Ellis*, NY, BPI 600360 *North American Fungi* 782 as *Sphaeria melanostigma*, ISOTYPES: Newfield, Jan. 1884, on *Quercus alba*, *J.B. Ellis*, BPI 600361.

Melanopsamma melanostigma and *M. pomiformis* are morphologically and anatomically very similar, but can be separated by ascospore sizes.

Melanopsamma verrucosa Samuels & M.E. Barr, sp.nov. Figs. 23–25

Ascomata superficialia, gregaria, collabentia, 350–400 μm lata 250 μm alta. Peridia pallida et verrucis nigrescentibus obtecta. Asci unitunicati, clavati, 50–60 \times 9–10 μm aparaphysati. Ascosporae hyalinae, oblonge ellipsoideae, uniseptatae 9–12(–14) \times 5.0–5.5 μm , foveolatae. Holotypus in ligno *Lithocarpus*, USA, California, Mendocino Co., Jackson State Forest, 4 Dec. 1971, a A.Y. Rossmann 548 lectus, in BPI 1105283 depositus.

ANAMORPH: None known.

Ascomata superficial, gregarious or in small groups, collabent, 350–400 μm diam., 250 μm high; apex with minute pore, periphysate; peridium narrow, small pallid pseudo-parenchymatous cells bearing warty clumps of blackish-walled cells on surface. Asci numerous, 50–60 \times 9–10 μm , clavate, apical ring minute, nonamyloid, with delicate remnants of cells of apical paraphyses. Ascospores 9–12(–14) \times 5.0–5.5 μm , hyaline, ellipsoid oblong, uniseptate; wall thickened, foveolate, dextrinoid in iodine; partially to completely biseriate.

Known from the type collection.

(4) *Niesslia*

Niesslia Auersw. (in Gonterm. & Rabenh.; Mycol. Eur. 5/6: 30. 1869) with the synonymous names *Lohwagiella* Petr. (*Sydowia* 23: 280. 1969 (1970)) and *Nitschkiopsis* Nannf. & R. Sant. (in Nannf.; Sven. Bot. Tidskr. 69: 322. 1975) is not included in this study. Detailed descriptions of the numerous species in the genus, and of their *Monocillium* anamorphs, are in preparation by W. Gams, M.E. Barr, and G.J. Samuels.

(5) *Pseudorhynchia*

Pseudorhynchia Höhn. (Sitzungsber. Kaiserl. Akad. Wiss. Math. Naturwiss. Kl. Abt. 1, 118: 1266. 1909) includes only the type species.

Pseudorhynchia polyrhynchia (Penz. & Sacc.) Höhn.; Sitzungsber. Kaiserl. Akad. Wiss., Math. Naturwiss. Kl., Abt. 1, 118: 1266. 1909 Figs. 6 and 26–29
≡ *Ceratosomella polyrhynchia* Penz. & Sacc.; Malpighia, 11: 408. 1897 (basionym)

ANAMORPH: None known.

Ascomata superficial, scattered on leaf surface on slight, pallid to light brown subiculum, sphaeroid or slightly collabent, 200–300 μm wide, 150–180 μm high; ostiole peri-

Figs. 26–29. *Pseudorhynchia polyrhynchia* (GJS 7738). Fig. 26. Ascoma with setae. Fig. 27. Ascomal apex showing part of ostiolar canal lined with periphyses. Fig. 28. Lateral wall of mature ascoma. Fig. 29. Asci and ascospores. **Figs. 30–34.** *Trichosphaerella decipiens* (GJS 4230). Fig. 30. Ascumata immersed in the subiculum on the host. Fig. 31. Asci with ascospores. Fig. 32. Subiculum showing coiled ends of hyphae (arrowheads). Fig. 33. Median longitudinal section through a mature ascoma. Fig. 34. Setae around the ostiolar opening. Scale bars: Fig. 26, 200 μm ; Figs. 27–29 and 32–34, 25 μm ; Fig. 30, 50 μm ; Fig. 31, 10 μm .

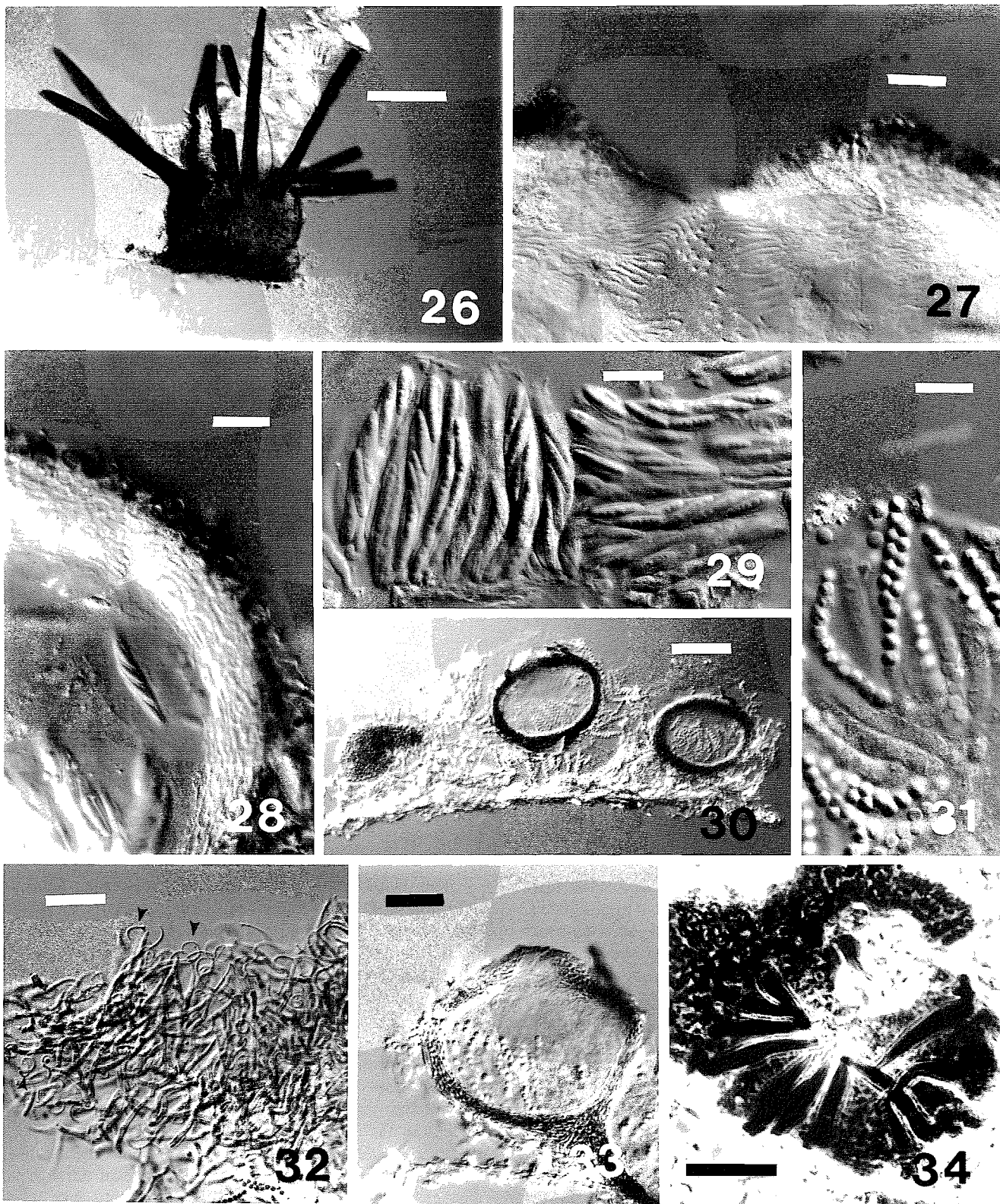
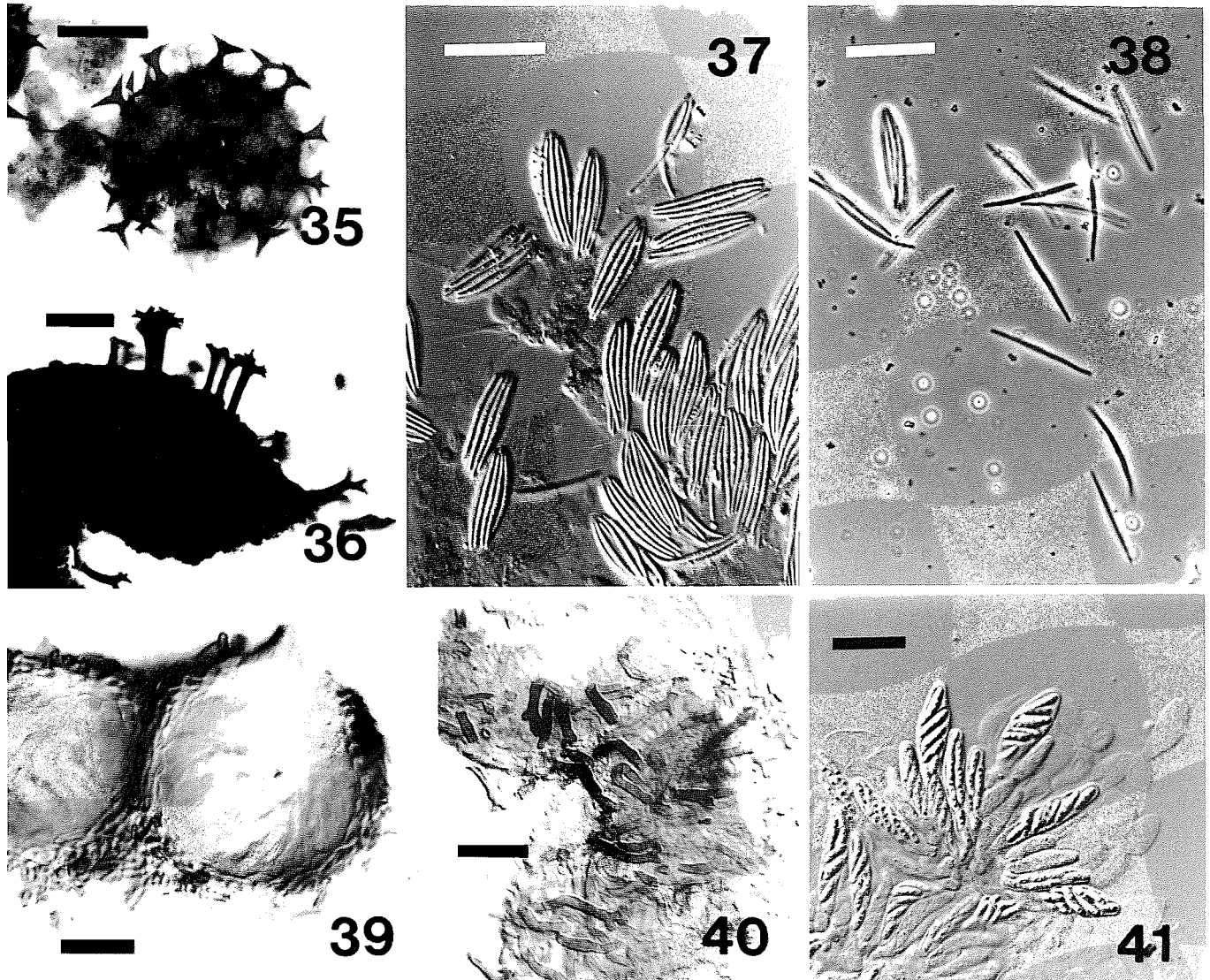


Fig. 35. *Valetoniella pauciornata*, surface view of an ascoma showing setae (*GJS 8070*). **Figs. 36–38.** *Valetoniella claviornata* (*MEB 6508*). Fig. 36. Surface view of an ascoma showing setae. Figs. 37 and 38. Asci and discharged ascospores. **Figs. 39–41.** *Valetoniellopsis laxa* (*GJS 96-174*). Fig. 39. Median longitudinal section through a mature ascoma. Fig. 40. Flexuous setae at ascomal surface. Fig. 41. Asci, ascospores and remains of saccate apical paraphyses. Scale bars: Fig. 35, 100 μm ; Figs. 36 and 37, 25 μm ; Figs. 38–41, 20 μm .



physate, situated in the center of the flat top; setae few (5–8), dark brown, composed of numerous agglutinated strands of hyphae, 200–400 μm long, 25–45 μm wide near base; peridium surface *textura angularis*, in section 15–25 μm wide, comprising several rows of compressed cells, surface bearing short brown, protruding hyphal ends or cells, ca. 7–10 μm long. Asci 48–75 \times 7.5–12.5 μm , numerous, aparaphysate; apical ring scarcely visible, non-amyloid. Ascospores 14–18(–20) \times 3.0–4.5 μm , hyaline, fusoid ellipsoid, uniseptate; wall smooth, firm; bi- to multi-seriate.

MATERIAL EXAMINED: VENEZUELA: EDO. MIRANDA: Parque Nacional Guatapo, trail between Agua Blanca and La Cruceta, on adaxial midrib of dead *Heliconia* leaf, 27–30 Nov. 1990, *GJS, B. Hein, & S.M. Huhndorf 7738*, BPI 802960.

This tropical taxon was originally described from Java and the collection described above appears to be only the second gathering of *Pseudorhynchia polyrhynchia*. Von Höhnell (1909) provided a detailed description of the species based on his study of the type, which was deposited in W, and on his own collection that was made at the same site and on the same host as the type. He cited ascospores as 11–13 \times 3–4 μm and disposed the fungus as a member of the *Chaetomieae*. He indicated that sparse, delicate pseudoparaphyses were present. Clements and Shear (1931) placed the genus as a synonym of *Trichosphaeria*, as did Eriksson and Hawksworth (1993) and Hawksworth et al. (1995). Species of *Trichosphaeria* differ in forming simple setae on the ascomata, and in the presence of narrow paraphyses among the asci. Müller and von Arx (1962) redescribed and illustrated *P. polyrhynchia* from the original

collection, citing the ascospores as $15-18 \times 5-6 \mu\text{m}$, and placing the genus in the Sphaeriaceae. Ascospores in the Venezuelan material were longer than originally described and narrower than Müller and von Arx indicated and pseudo-paraphyses were lacking. The hamathecium in the Venezuelan collection consists of a matrix containing bacteria and merely a suggestion of periphysoids.

(6) *Taiwanascus* Sivan. & H.S. Chang; Mycol. Res. 101: 176 1997

This genus includes only one species, *A. tetrasporus*. The following description is paraphrased from the protologue.

Ascomata superficial, cleistothecial, $130-150 \mu\text{m}$ diameter, brown. Setae $30-38 \times 6.5-7.0 \mu\text{m}$, arising from all over the ascomal wall, brown, more or less dichotomously branched at the tip. Peridium thin. Hamathecium lacking. Asci cylindrical, thin walled, four spored; apex simple. Ascospores aculeate, $30-35 \times 1.2-1.5 \mu\text{m}$, aseptate or uniseptate, hyaline.

DISTRIBUTION: Taiwan, known only from the holotype.

Ascospores of this species were originally described as being filiform. However, the original illustrations of the ascospores do not indicate to us that they are filiform but that they are aculeate (i.e., like a spine).

(7) *Trichosphaerella* E. Bommer, M. Rousseau & Sacc.; Syll. Fung. 9: 604. 1891

= *Bresadolella* Höhn.; Ann. Mycol. 1: 522. 1903

Ascomata superficial, gregarious on a thin hyphal subiculum, minute to small ($<150 \mu\text{m}$), collabent, and bearing short, simple, dark setae. Periphysoids delicate and usually difficult to observe. Asci numerous, either lacking a ring or having a discoid apical ring. Ascospores hyaline, oblong, uniseptate, disarticulating into partspores at maturity, each partspore containing a large, conspicuous globule.

The variations among saprotrophs that have small, superficial, setose ascomata and ascospores that disarticulate within the ascus are confusing. All of the species in question bear some vestiture on the ascomata. The presence of a hamathecium either of periphysoids or of narrow delicate paraphyses is often difficult to determine. A more reliable character for separation of the genera is the type of vestiture, which correlates with anamorph features.

Numerous genera have been recognized within the complex, including *Trichosphaerella*, *Neorehmia* Höhn., *Bresadolella*, *Melanopsamella* Höhn., *Oplothecium* Syd., *Larseniella* Munk, *Oplotheciopsis* Bat. & Cif., and perhaps *Trichohleria* Sacc. Barr (1990) attempted to reconcile some of the conflicting views or synonymous names presented by Munk (1957), Müller and von Arx (1962, 1973), and Rogerson (1970). This attempt is amplified below.

Melanopsamella is based on *Eriosphaeria inaequalis* Grove and has an ascoma vestiture of dark conidiophores that produce hyaline phialides, often in whorls, of *Gonytrichum* sp. This feature, and the presence of delicate paraphyses, indicate that the correct disposition is as *Chaetosphaeria inaequalis* (Grove) W. Gams & Hol.-Jech. (Gams and Holobová-Jechová 1976).

Trichosphaerella is based on *T. decipiens* E. Bommer, M. Rousseau & Sacc. *Bresadolella*, with *B. aurea* Höhn., evidently refers to the same taxon; the setae of ascomata are

relatively few, dark, simple, and pointed. The verruculose partspores are subglobose or oblong, $4.0-5.5 \times 2.0-2.5 \mu\text{m}$. An anamorph referable to *Acromonium* developed in culture from a collection made in French Guiana by Samuels (see description below).

Neorehmia is based on *N. ceratophora* Höhn., setae of which are branched at the tips. The partspores are subglobose and smooth walled. Numerous, narrow, delicate paraphyses are usually seen interspersed among the asci. Müller and Samuels (1982) obtained an anamorph in culture that produced conidia holoblastically on sympodially proliferating conidiogenous cells. They attributed the anamorph to *Tritirachium* Limber. *Neorehmia* seems better arranged in the Trichosphaeriaceae (Trichosphaeriales). *Larseniella globulispora* Munk has already been synonymized under *Neorehmia ceratophora* by Munk (1957). Müller and Dennis (1965) recognized that the type species of *Oplothecium*, *O. arecae* Syd., and of *Oplotheciopsis*, *O. palmae* (F. Stevens) Bat. & Cif., represented a single species when he transferred both to *Trichosphaerella* as *T. arecae* (Syd.) E. Müll. With the apically branched setae and disarticulating ascospores, this taxon must be reassigned as *Neorehmia arecae* (Syd.) Samuels & M.E. Barr, comb.nov. (basonym: *Oplothecium arecae* Syd.; Ann. Mycol. 21: 97. 1923).

Trichosphaerella tuberculata Samuels (Samuels 1983) from New Zealand has tuberculate, nonsetose, noncollabent ascomata with a peculiar wide, "blistered" peridium. The species must be excluded from the genus, although the ultimate disposition is uncertain.

Trichosphaerella decipiens E. Bommer, M. Rousseau & Sacc.; Syll. Fung. 9: 604. 1891 Figs. 7-11, 30-34
= *Bresadolella aurea* Höhn.; Ann. Mycol. 1: 522. 1903
ANAMORPH: *Acromonium* sp.

Ascomata scattered and few to numerous and gregarious on white to tan hyphal subiculum, globose, $60-100(-125) \mu\text{m}$ diameter; nonpapillate or bluntly papillate, ostiole periphysate; setae few, $(18-21-31(-90) \mu\text{m}$ long, $3.5-5.5(-10.0) \mu\text{m}$ wide near base; peridium of compressed rows of brown cells, to $10 \mu\text{m}$ wide; periphysoids arising from the top of locule and growing downward, persisting or not among asci as very thin-walled, disintegrating cells. Asci $20-30(-42) \times (4.0-4.0-5.5(-10) \mu\text{m}$, four or eight spored; apical ring discoid. Ascospores $5.5-8.5 \times 2-4 \mu\text{m}$, hyaline, ovoid or ellipsoid, uniseptate, deeply constricted, disarticulating into subglobose partspores, $2.0-3.0 \times 2.0-2.5(-3.0) \mu\text{m}$ or oblong, $4.0-5.5 \times 2.0-2.5 \mu\text{m}$, one large globule in each partspore, uniseriate to biseriate; wall finely verruculose.

Characteristics in culture. Ascospores germinating on CMD within 10 h at 20°C . Colonies grown in CMD 7 days at 20°C ca. 1 mm diameter, white, with conidiophores numerous, arising profusely from the surface of the colony. Conidiophores $11-24(-31) \mu\text{m}$ long, $1.0-2.3 \mu\text{m}$ wide at base, thin walled, hyaline; mononematous, a single phialide terminating each conidiophore. Phialides $11-22 \mu\text{m}$ long, $1.0-2.5 \mu\text{m}$ wide at base, straight, smooth; tip neither flared nor periclinally thickened, ca. $1.0 \mu\text{m}$ wide. Conidia ellipsoidal to oblong, $(2.0-2.5-3.0(-4.0) \times 1.5-2.0(-2.5) \mu\text{m}$, unicellular, hyaline, lacking a visible basal abscission scar.

On old stems, palm midrib, wood, widespread but infrequent.

MATERIAL EXAMINED: CANADA: BRITISH COLUMBIA: Vancouver Island, Sidney, *Arbutus menziesii* Pursh, wood and old polypore, 20 Jan. 1991, *MEB 7409*, DAOM; Sidney, on resupinate basidiomycete on *Vaccinium parvifolium*, 7 Nov. 1994, *MEB 8846*, DAOM. ESTONIA: Läänemaa, Nõva Forestry, Riguldi, Höbrenge, on Aphyllophorales, 6 Oct. 1993, *K. Pöldmaa*, BPI, TAA 161078. FRENCH GUIANA: Paul Isnard Area, Mts. Lucifer & Decou Decou, ca. 150 km S of St. Laurent du Maroni, base of decaying palm leaf, 7–17 Mar. 1986, *GJS 4230*, BPI, NY; culture GJS 86-487. LESSER ANTILLES: GUADELOUPE: Marie Galante, vic. Grand Bourg, Coulée Ouliée, elev. 50–80 m, Corticiaceae, 22 Mar. 1992, *J. Vivant M.G. 5 comm. F. Candoussau*, BPI. LUXEMBOURG: Hesperange, resupinate basidiomycete on *Quercus* sp., 4 Oct. 1993, *G. Masson*, DAOM. PERU:

DPTO. CUZCO: along the Cuzco-Pilcopata-Paucartambo Rd. at a point ca. 186 km from the intersection of the Cuzco-Puno Rd., on Corticiaceae on bamboo, 18 July 1976, *K.P. Dumont et al. Dumont-PE 1437*, NY, BPI. USA. LOUISIANA: St. Tammany Parish, Honey Island swamp near Pearl River, *Rubus* sp., 6 June 1976, *MEB 6371*, NY.

(8) *Valetoniella* Höhn.; Sitzungsber. Kaiserl. Akad. Wiss. Math. Naturwiss. Kl., Abt. I, 118: 1499. 1909

In addition to the type species, *V. crucipila* Höhn., two additional taxa are described here and are separated by characteristics of their ascospores. The conspicuous diagnostic features of the genus are the apically forked and coronate apices of dark setae that arise from the lightly pigmented peridium, and the habit typically over or near other ascomycetous fungi.

Key to species of *Valetoniella*

- 1a. Ascospores elongate fusoid, dextrinoid following KOH pretreatment, $23-30(-35) \times 1.5-2.0 \mu\text{m}$ *V. claviornata*
 1b. Ascospores ellipsoidal, dextrinoid or not, mostly $7.5-9.5 \times 2.5-4.0 \mu\text{m}$ 2
 2a. Ascospores striate, dextrinoid following KOH pretreatment *V. crucipila*
 2b. Ascospores smooth walled, nondextrinoid following KOH pretreatment *V. paucicornata*

Valetoniella claviornata Samuels & M.E. Barr, sp.nov.

Figs. 14–16 and 36–38

Ascomata superficialia, gregaria, globosa, 117–220 μm diametro, setae numerosae, fuscae, 30–80 μm longae 5.0–7.5 μm latae, ad apicem ramosae numerosae. Asci unitunicati, $25-40 \times 5.0-7.5 \mu\text{m}$. Ascospores $23-30(-35) \times 1.5-2.0 \mu\text{m}$, hyalinae, elongatae fusoideae, uniseptatae, fasciculatae. Anamorph ignotis. Holotypus in ramo mortuo *Aceris rubri* L. una cum *Orbilina* sp., USA: Massachusetts: Franklin Co., Mt. Toby, 8 Oct. 1978, a *M.E. Barr 6508* lectus in NY depositus.

ANAMORPH: None known.

Ascomata globose, 117–220 μm diameter, apex short papillate, ostiole periphysate, appearing coal-black from abundant setae; setae dark brown, numerous, thick-walled, closely septate, 30–80 μm long, 5.0–7.5 μm wide, apically ornately branched, scattered thick-walled cells perhaps primordia of setae near base, and sparse brown basal hyphae; peridium light brown, two or three rows of compressed cells, 10–15 μm wide. Asci $25-40 \times 5.0-7.5 \mu\text{m}$, oblong, eight spored, apical ring not visible. Ascospores $23-30(-35) \times 1.5-2.0 \mu\text{m}$, hyaline, long fusoid, uniseptate; wall thin, smooth; dextrinoid in Melzer's reagent; in fascicles in the ascus, curved when free.

This species is distinguished by the dextrinoid, smooth-walled ascospores that are elongate fusoid.

Valetoniella crucipila Höhn.; Sitzungsber. Kaiserl. Akad. Wiss. Wien Math.-Naturwiss. Kl. Abt. I, 118: 1500. 1909 (basonym)

Figs. 12 and 13

≡ *Niesslia crucipila* (Höhn.) E. Müll. in E. Müll. & von Arx; Beitr. Kryptogamenflora Schweiz 11(2): 577. 1962

ANAMORPH: None known.

Ascomata superficial, scattered to gregarious on ascomata of species of *Nectria* or on surrounding tissue, globose, (120–)170–260(–335) μm diameter, apex minutely papillate, ostiole periphysate; translucent brown, few basal fringing hyphae present; cells at peridial surface angular, thin walled, 10–27 μm diam; setae dark brown, (19–)26–50(–82) μm long, (6–)9–13(–19) μm wide, apically coronate; peridium of compressed rows of brown cells, 20–25 μm wide. Asci clavate, (20–)24–40(–48) \times (6–)7–10(–11) μm , apical ring refractive. Ascospores ellipsoidal, (5.5–)7.5–9.5(–13) \times (2–)3–4(–5) μm , hyaline, uniseptate; coarsely striate; dextrinoid and slowly becoming red in Melzer's reagent following pretreatment with KOH; biseriata in the ascus.

MATERIAL EXAMINED: FRENCH GUIANA: Upper Marouini River, 2 km N of Oumanfou-Langa Soula, 02°52'N, 54°00'W, elev. 150 m, with *Nectria cinnamomea* Samuels & Brayford on bark, Aug. 1987, *GJS 5710A*, NY. INDONESIA: NORTH SULAWESI: Dumoga Bone National Park, Gn. Muajat, Danau Alia, 00°45'N, 124°25'E, elev. 1400 m, *Nectria discophora* Mont., 26 Oct. 1985, *GJS 2421d*, NY. NEW ZEALAND: Waitemata City, Titirangi, Titirangi Beach Reserve, *Hoheria* sp., with *Nectria mammoidea* Phillips & Plowr. and *N. haematococca* Berk. & Broome, 18 Sept. 1980, *GJS (80-119)* & *P.R. Johnston*, PDD 41743; same locality, decaying wood on *N. illudens* Berk. and *Nectria* sp., 10 Dec. 1980, *GJS (80-190)*, *P.R. Johnston* & *G. Rattray*, PDD 41945; Gisborne: Urewera National Park, Lake Waikaremoana, Tawa Loop Track, *Nectria illudens* Berk., 13 May 1985, *GJS (85-67a)* & *L.M. Kohn*, NY. PUERTO RICO: Caribbean National Forest, Luquillo Mts., El Verde Research Area, elev. 350–400 m,

along La Prieta Creek, *Nectria jungneri*, 20 Feb. 1996, *GJS* (8053, 8122), H.-J. Schroers, & D.J. Lodge, BPI; Luquillo Mts., trail to El Toro from Rte. 186, elev. 650–750 m, *Nectria jungneri*, 24 Feb. 1996, *GJS* (8091), H.-J. Schroers, & D.J. Lodge, BPI. VENEZUELA: DPTO. RÍO NEGRO: Cerro de la Neblina, along Río Mawarinuma, just outside Cañon Grande, vic. Neblina Base Camp, 00°50'N, 66°10'W, elev. ca. 140 m, bark with *Nectria jungneri*, 25 Apr. 1984, *GJS* 1657, NY; EDO. MÉRIDA: Parque Nac. Sierra Nevada, above Tabay, Qda. Coromoto, La Mucuy, 08°36'N, 71°02'W, elev. 2300 m, *Nectria discophora*, 17 Nov. 1990, *GJS* (6810b) et al., BPI, NY, USB, VEN.

Valetoniella crucipila was originally described from Indonesia. It was not reported again until Samuels (1983) redescribed the species from New Zealand. It has since been recollected in Indonesia and found in the New World tropics in French Guiana, Puerto Rico, and Venezuela.

The ascospores, which are conspicuously striate and dextrinoid, readily characterize this species. Ascospores turn a shade of red in Melzer's reagent but apparently only after they have been rehydrated in 3% KOH. Some morphological differences correlate to geographic origin of collections. Collections from New Zealand have conspicuously longer setae than are found on ascomata collected in the New World. Ascospores of the New Zealand collections tend to be somewhat longer and considerably wider than spores in collections from elsewhere.

Valetoniella pauciornata Samuels & M.E. Barr, sp.nov.

Figs. 17, 18, and 35
Ascomata superficialia, gregaria, globosa, 250–300 μm diametro, papillata mellea, cellulae superficialies (7–)9–15(–20) μm diametro, angulatae, setae fuscae, (22–)29–46(–62) μm longae (8–)10–14(–19) μm latae, ad apicem ramosae, paucae. Asci unitunicati (21–)29–35(–42) \times (5.0–)6.0–7.5(–9.5) μm , annuli apicales refringentes. Ascospores 7.0–9.0(–10.0) \times (2.0–)2.5–3.0(–3.5) μm , hyalinae, oblonge, ellipsoideae, uniseptatae, biseriatae. Anamorph ignotis. Holotypus una cum *Nectria* sp., in foliis palmae indeterminatae, SOUTH AMERICA: VENEZUELA: AMAZONAS: Dpto. Río Negro, Neblina base camp, along Río Mawarinuma, Apr.–May 1984, a *GJS* 1907 lectus holotypus in VEN isotypus in NY depositus.

ANAMORPH: None known.

Ascomata globose, 250–300 μm diam, collapsing at times by lateral pinching; apex minutely papillate, ostiole periphysate; light honey-coloured, ostiolar area darker brown, few basal fringing hyphae present; setae dark brown, (22–)29–46(–62) μm long, (8–)10–14(–19) μm wide, apically few branched; peridium of compressed rows of light brown cells, 10–20 μm wide in side view, (7–)9–15(–20) μm , angular in face view. Asci (21–)29–35(–42) \times (5.0–)6.0–7.5(–9.5) μm ; apical ring indistinct, refractive. Ascospores 7.0–9.0(–10.0) \times (2.0–)2.5–3.0(–3.5) μm , hyaline, oblong ellipsoidal, uniseptate; wall smooth; contents refractive globules, nondextrinoid; biseriatae in the ascus.

ADDITIONAL MATERIAL EXAMINED: PUERTO RICO: Caribbean National Forest, Luquillo Mts., Bisley Experimental Watershed, Watershed No. 1, elev. 350–400 m, on *Nectria haematococca*, 21 Feb. 1996, *GJS* (8070), H.-J. Schroers & D.J. Lodge, BPI.

This taxon is associated with species of *Nectria*. The coronate setae are rather few and short. The ascospore walls lack striations and their contents do not react in iodine either before or after KOH pretreatment.

(9) *Valetoniellopsis* Samuels & M.E. Barr, gen.nov.

Ascomata papillata superficialia brunnea. Setae brunneae laxae. Peridia brunnea circa 10 μm lata. Asci unitunicati aparaphysati. Ascospores hyalinae uniseptatae. Typus generis *Valetoniellopsis laxa* Samuels & M.E. Barr.

Valetoniellopsis laxa Samuels & M.E. Barr, sp.nov.

Figs. 19 and 39–41
Ascomata globosa, (50–)61–100 μm diametro. Setae sursum lobatae, 15–20 μm longae, 2–3 μm latae. Asci clavati, (16–)19–25(–28) \times 4.5–6.5(–7.0) μm , aparaphysati. Ascospores ellipsoideae vel cylindraceae, 5.0–7.0(–7.5) \times (1.5–)1.5–2.0(–2.5) μm , laeves. Anamorph *Acremonium* similis. Holotypus in foliis mortuis palmae trunco adhuc affixis, USA, Louisiana, Iberia Parish, Avery Island, Jungle Garden, 16 Aug. 1996, a *GJS*, M. Blackwell & M. Camara lectus, in BPI (cultura *GJS* 96-174 = CBS 191.97) depositus.

ANAMORPH: *Acremonium*-like.

Ascomata superficial, forming within a thin, spreading white, conidiogenous subiculum on dead palm leaves that are colonized by other fungi, globose with a papillate apex, (50–)61–100 μm diameter, becoming collabent, bearing scattered brown, infrequently septate, lax, thin-walled setae 15–20 μm long, 2.0–3.0 μm wide, each seta lobed at the tip; setae arising directly from surface cells of the peridium and from hyphae over the peridium; peridium brown, in surface view angular to textura epidermoidea, in side view of a few layers of flattened angular cells 3–7 \times 1.5–3.0 μm , ca. 10 μm wide in side view. Asci numerous, (16–)19–25(–28) \times 4.5–6.5(–7.0) μm , clavate, apex simple, remnants of the apical paraphyses are seen as chains of saccate cells among maturing asci. Ascospores 5.0–7.0(–7.5) \times (1.5–)1.5–2.0(–2.5) μm , hyaline, narrowly ellipsoidal to cylindrical, straight or slightly curved, uniseptate, smooth, bi- to multi-seriate.

CHARACTERISTICS IN CULTURE: Ascospores germinating readily on CMD within 18 h at 20°C, producing a single, short germ tube from one or both ends of each spore. Colonies derived from single ascospores ca. 5 mm diameter within 7 days, pale salmon, lacking aerial mycelium, the entire surface of the colony conidiogenous. Conidiophores mononematous, macronematous, unbranched, smooth, straight, (14–)17–30(–42) μm long, each bearing a single, terminal, colourless drop of liquid containing conidia, base (1.0–)1.5–2.5(–3.0) μm wide, base sometimes slightly enlarged, otherwise tapering uniformly to tip, tip 1.0–2.0 μm wide with collarette slightly flared or not and periclinal thickening not seen. Conidia (4.0–)4.5–7.0(–9.0) \times 2.0–2.5 μm , hyaline, ellipsoidal to oblong, lacking a visible basal abscission scar, aseptate, smooth.

Known only from the type collection.

As was the case with *Circinoniesslia*, the lax, brown setae set *Valetoniellopsis* apart from other genera of the family. The *Acremonium*-like anamorph, combined with the hyaline,

unicellular ascospores and anatomical features of ascomata, support inclusion of *Valetoniellopsis* in the Niessliaceae.

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