

## ***Rogersonia*, a new genus of the Hypocreales**

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*Rogersonia striolata*, a new species in a new genus of the Hypocreales (Ascomycetes), is described from decaying wood in Puerto Rico. *Rogersonia* is similar to *Hypomyces* in perithecial anatomy and in that perithecia form in a subiculum. *Rogersonia* differs from *Hypomyces* in having eight unicellular ascospores in each ascus and apparently *R. striolata* is not fungicolous. *Rogersonia* is similar to *Sarawakus* in having eight, unicellular ascospores in each ascus. *Rogersonia* differs from species of *Sarawakus* in forming a subiculum rather than a pseudoparenchymatous stroma and in having hyaline ascospores. Ascospores of *R. striolata* have conspicuous, transversely arranged, raised striations. No anamorph has been observed for *R. striolata*.

Keywords: Ascomycetes, Hypocreaceae, systematics, tropical mycology.

A new genus and species of the Hypocreales, Hypocreaceae has been collected several times in rain forest in Puerto Rico. It was found on fallen branches and tree trunks that had been killed by a hurricane in 1989. This fungus is apparently saprobic on rotting wood of *Guarea guidonia* (L.) Sleum. and *Swietenia macrophylla* King, both members of the Meliaceae. Because the fungus could not be identified using the key to the Hypocreales published by Rogerson (1970) and is not among the genera of the Hypocreales described since then, it is described below.

***Rogersonia* Samuels & Lodge, gen. nov. (Hypocreaceae)**

Subiculum effusum, laetecolor, ubique fertile. Perithecia caespitosa, plurima, in subiculo immersa. Apex perithecii liber; e cellulis plus minusve clavatis compositum; canale ostioli periphysato. Subiculum et anatomia perithecii ut in *Hypomyces*. Ascosporae aseptatae, late ellipticae, transverse striatae.

Subiculum indefinitely effused, light-colored. – Perithecia caespitose, numerous, partly to completely immersed in the subiculum, formed throughout the subiculum. – Perithecial apex free,

formed of more or less clavate cells. – Ostiolar canal periphysate. – Subiculum and perithecial anatomy as in *Hypomyces*. – Ascospores unicellular, broadly ellipsoidal, transversely striate. – Anamorph unknown.

Type species. – *R. striolata* Samuels & Lodge

Etymology. – Refers to Clark T. Rogerson in recognition of his contributions to the knowledge of the Hypocreales. The species epithet refers to the striate ascospore surface.

***Rogersonia striolata*** Samuels et Lodge, sp. nov. – Figs. 1–11.

Subiculum bubalinum, flavum vel griseo-flavum; margine albido. Perithecia obpyriformia, (220–)250–300(–310)  $\mu\text{m}$  alta, (150–)170– 220(–244)  $\mu\text{m}$  lata. Asci cylindrici, (80–)90–110(–120)  $\times$  (6.0–)6.7– 9.0(–11)  $\mu\text{m}$ , 8-spори, tenui-tunicati, maturitate fatiscentes. Ascosporae late ellipsoideae, (10.0–)11.7–14.0(–16.2)  $\times$  (5.0–)6.0–7.5(–8.7)  $\mu\text{m}$ , aseptatae, hyalinae, transverse striatae; paries sporarum crassus. Status anamorphosis ignotus.

Holotypus. – *Lodge Pr-1214* (BPI).

Anamorph. – Unknown.

Subiculum indefinitely effused, thin, dissipated at the margin, light-colored [Kornerup & Wanscher, 1978: center dull yellowish (3A3), greyish yellow (3B3), pale yellowish (4A–B2–4) to yellowish brown (5E4–8); behind the margin yellowish brown (5D6) to light yellow (4A4); white at the margin]; hyphae broad (ca. 5.5  $\mu\text{m}$  wide) and tending to be vesiculose (9–13  $\mu\text{m}$  wide), thin-walled, not changing color in 3% KOH; many erect free ends or lateral branches 25–40  $\mu\text{m}$  long, ca. 10  $\mu\text{m}$  wide, septate, smooth, tapering slightly from base to tip, hyaline by transmitted light. – Perithecia cespitose and occurring in great numbers over most of the subiculum except the margin, discrete but crowded, outlines of individual perithecia not visible, clothed in hyphae with papilla free, pale yellow, not changing color in 3% KOH, obpyriform, (220–)250–300(–310)  $\mu\text{m}$  high, (150–)170–220 (–244)  $\mu\text{m}$  wide, becoming cupulate on drying with the papilla remaining in the middle of the indistinct cup. – Perithecial wall ca. 20  $\mu\text{m}$  wide, formed of a single region of a few layers of thin-walled, flattened, ca. 15  $\times$  4  $\mu\text{m}$  cells. – Perithecial apex formed of conspicuous chains of cells that terminate in a larger clavate cell 10–15  $\times$  6–7  $\mu\text{m}$  toward the exterior; files of cells becoming progressively narrower toward the ostiolar canal and merging with the periphyses. – Ostiolar canal periphysate. – Asci forming a hymenium, cylindrical, (80–)90–110(–120)  $\times$  (6.0–)6.7–9.0(–11)  $\mu\text{m}$ , 8-spored, thin-wal-

led and disintegrating at maturity; apex simple. – Ascospores broadly ellipsoidal,  $(10.0\text{--}11.7\text{--}14.0\text{--}16.2) \times (5.0\text{--}6.0\text{--}7.5\text{--}8.7) \mu\text{m}$ , unicellular, hyaline, with conspicuous, transversely arranged, slightly anastomosing, ridge-like striations and intermittently reinforced with spinose extensions; wall  $1.0\text{--}1.7 \mu\text{m}$  thick.

**Habitat.** – In rain forest on large fallen branches and logs of *Guarea guidonia* and *Swietenia macrophylla* at an elevation of 350 m.

**Known distribution.** – Puerto Rico, Luquillo Mts.

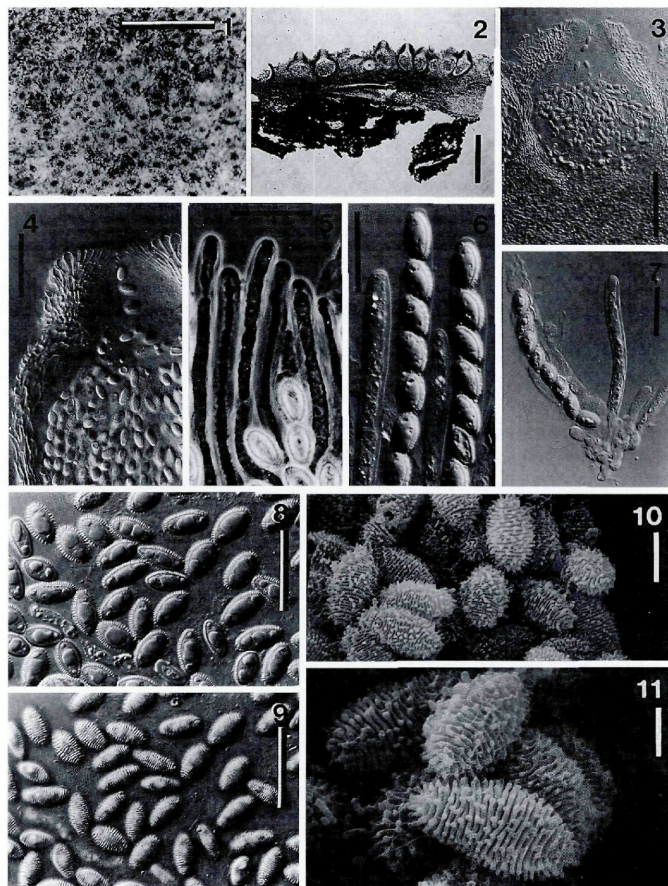
**Holotype.** – PUERTO RICO, LUQUILLO MTS.: El Verde Research Area, trail to Río Sonadora, right hand side, elev. 350 m, on underside of log, 4 July 1993, D. J. Lodge PR-1214 (BPI, ISOTYPES: K, UPRRP).

**Additional specimens examined.** – PUERTO RICO, LUQUILLO MTS.: El Verde Field Station, driveway, on log of *Guarea guidonia*, 22 Mar. 1994, H. H. Burdsall, Jr. HBB-14950 (Lodge PR-1459) (BPI, CFMR). El Verde Research Area, trail to Río Sonadora, on branch of *Guarea guidonia*, 4 Oct. 1993, D. J. Lodge PR-1282 (BPI); same locality, on log of *Swietenia macrophylla*, 16 Nov. 1993, D. J. Lodge PR-1586 (BPI). El Verde Research Area, between prongs in fork in trail to Río Sonadora, on log of *Guarea guidonia*, 16 Nov. 1993, D. J. Lodge PR-1403, H. H. Burdsall, Jr., M. Boyd & P. Bayman (BPI).

Attempts to germinate ascospores on cornmeal dextrose agar (CMD: Difco cornmeal agar + 2% dextrose) at 20 C were unsuccessful, nor did tissue of the subiculum grow when placed on CMD. We did not observe an anamorph associated with perithecia or with the young subiculum on any of the specimens that we examined.

*Rogersonia* is typical of the Hypocreales in its light pigmentation, fleshy consistency, inamyloid asci and in the absence of paraphyses among mature asci. It is somewhat unusual in the Hypocreales in that the asci lack an apical discharge mechanism and disintegrate at maturity. However, in the Hypocreales there is a general tendency for asci of species that have relatively large ascospores to lack an apical discharge mechanism and to liberate the spores through ascus disintegration (see e. g. Samuels & Brayford, 1993).

The indefinitely effused stroma-like aggregation of perithecia of *R. striolata*, at first sight, is strongly reminiscent of the stroma of a species of *Hypocrea* such as *H. citrina* Pers. : Fr. However, unlike *Hypocrea*, perithecia of *Rogersonia* are not united in a pseudoparenchymatous stroma but are seated in a hyphal subiculum. That perithecia are so densely crowded gives the aggregation the appearance of being stromatic. Perithecial anatomy, especially the perithecial apex, is very much like what is seen in several agaricolous species of *Hypomyces* (Rogerson & Samuels, 1994). The combined features of the subiculum and the perithecial anatomy lead us to conclude that *Rogersonia* is closely related to *Hypomyces*.



Figs. 1–11. – *Rogersonia striolata*. – 1. Macroscopic view of part of a stroma showing ostiolar openings as dark spots. – 2. Section through a stroma showing several perithecia. – 3, 4. Median longitudinal sections through individual perithecia. – 5. Immature asci. – 6. Two asci with fully-formed ascospores. – 7. An immature ascus (right) and a mature ascus in the process of disintegrating. – 8–11. Discharged ascospores showing surface ornamentation. 8, 9. Light microscopy showing optical section (8) and surface view (9). 10, 11. Scanning electron microscopy. – Scale bars: Fig. 1 = 1 mm; 2 = 400  $\mu$ m; 3 = 100  $\mu$ m; 4 = 50  $\mu$ m; 5–9 = 25  $\mu$ m; 10 = 5  $\mu$ m; 11 = 2.5  $\mu$ m.



Despite the similarities of *Rogersonia* to *Hypomyces* there are significant differences between the two genera. Species of *Hypomyces* are fungicolous and there is no indication of a fungal host for *R. striolata*. Asci of *Hypomyces* typically have an apical discharge mechanism. Moreover, ascospores of *Hypomyces* are typically bicellular, apiculate and warted; when ascospores are unicellular, they are fusiform rather than broadly ellipsoidal. Striate ascospores are unknown in *Hypomyces*. Furthermore transversely striate ascospores are unknown in the Hypocreales and, indeed, we are aware of only one other ascomycete, *Pleospora discors* (Mout.) Ces. & de Not., that has such ascospore ornamentation. Ascospores of *P. discors* are finely striate and the striae of the central cells are transverse.

Unicellular ascospores are uncommon in the Hypocreales. Because of their large size, and because they are broadly ellipsoidal, ascospores of *Rogersonia* suggest those of *Sarawakus* Boedijn (Samuels & Rossman, 1992). However, perithecia of species of *Sarawakus* form in a discrete, discoidal or pulvinate, stroma and the ascal apex of species of that genus is thickened and has a shallow ring. The affinities of *Sarawakus* lie with *Hypocrea*, whereas the affinities of *Rogersonia* lie with *Hypomyces*.

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