NEW AND INTERESTING FUNGI (LOCULOASCOMYCETES) FROM THE AMAZON

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SUMMARY

*A new genus, **Javaria**, and species, **J. samuelsii**, are described from material collected at Serra Aracá, Amazonas. Also, the taxonomy of two other Amazonian species is updated; **Herpotrichia villosa** is transferred to **Byssosphaeria** and **Thaxteriella roraimensis** is transferred to **Tubeufia**.*

INTRODUCTION

Among the fungi collected by Dr. Gary J. Samuels in the states of Amazonas and Roraima are several members of the Loculoascomycetes. The taxonomy of two of the species, **Herpotrichia villosa** Samuels & Müller and **Thaxteriella roraimensis** Samuels & Müller, is updated, and a new genus and species is delimited.

Javaria is described here for a fungus represented in seven Amazonian collections of decaying palm petioles. The conic, thin-based ascomata of this fungus rupture the outer layers of the host substrate as they develop, in a manner similar to species of **Astrosphaeriella** Sydow, and contain bitunicate asci, ascospores with bipolar symmetry, and trabeculate pseudoparaphyses. Species of **Astrosphaeriella** further resemble this fungus in that they have been found on palm substrates as well as bamboo and other stout grasses (Hawksworth, 1981; Hawksworth & Boise, 1985) and because of these similarities I believe that these two genera are closely related and both members of the Melanommatales. However, **Javaria** differs from **Astrosphaeriella** in ascospore pigmentation and structure. The ascospores in **Astrosphaeriella** species produce brown pigments and lack sheaths or appendages whereas, in **Javaria** the ascospores are hyaline and sheathed. When stained with Congo Red, a ring appears at the apex of the endotunicae of **J. samuelsii**, and there seems to be a second, refractive ring just below in the ocular chamber. These ascus structures may provide additional characters by which **Javaria** is distinguished, however, their small size makes them exceedingly difficult to observe by a bright-field microscope.

An additional specimen of **J. samuelsii** was discovered among fungi collected by

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Dr. Kent Dumont at Mt. Makiling, Philippines. I do not interpret this specimen to be evidence for a disjunct distribution of J. **samuelsii**. Rather, I suspect that J. **samuelsii** is a common pantropical saprobe. The Philippines collection of J. **samuelsii** is of further interest because it is not on a monocotyledonous substrate but rather on a woody plant, perhaps a vine (pers. comm. D. Black). Because of the morphological similarities of **Javaria** and **Astrosphaeriella**, I would also suspect a similar nutritional mode. Even though **Astrosphaeriella** is only know from collections of monocot substrates, these are few in number and possibly the wood-inhabiting forms have simply not been collected. The collection history of both of these genera reflects the fact that few tropical collectors meet the fieldwork challenge to discover these microscopic fungi, organisms that rarely exceed one millimeter in their largest appreciable dimension.

Javaria Boise, gen. nov.

(Etymology: Rio Javari= river at type locality.)

Ascomata erumpescentia, conica, papillata, brunnea vel nigra, peridio lateraliter carbonaceo, basi tenui. Pseudoparaphyses subtiles, filiformes, trabeculatae. Asci lageniformi-cylindrici, octospori, bitunicati; endotunicae annulatae. Ascosporae ellipsoideo-fusiformes, hyalinae, septatae, vagina gelatinosa inclusae.

Typus: **Javaria samuelsii** Boise.

Ascomata erumpent, conic, papillate, brown to black, peridium carbonaceous at sides, thin at base. Pseudoparaphyses delicate, filiform, trabeculate. Asci lageniform-cylindric, 8-spored, bitunicate; endotunicae thicker towards apex, apices with refractive rings above which a second ring appears when stained with Congo Red. Ascospores ellipsoid-fusoid, hyaline, septate, within a gelatinous sheath.

Javaria samuelsii Boise, sp. nov. (Fig.1; A,B)

(Etymology: named in recognition of the collector, Gary J. Samuels.)

Ascomata e hospitum stratis externis erumpentia, 0.75-1.0 mm diam, peridio basi < 10 µm lato. Pseudoparaphyses 1 µm latae. Asci usque ad 170 x 20 µm. Ascosporae 1-(3-)septatae, (43-)46-58(-62) x 6.5-8 µm.

Ascomata exposed by rupture of outer layers of host substrate, 0,75-1.0 mm diam; peridium < 10 µm wide at base, composed of small-celled (5 um diam) pseudoparenchyma. Pseudoparaphyses 1 µm wide. Asci up to 170 x 20 µm. Ascospores 1-(3-)septate, (43-)46-58 (-62) x 6.5-8 µm.

Type: Brazil. Amazonas: Serra Aracá, 60 m, terra firme, open forest, deep litter, dry, 10-13 Mar 1984, on decaying palm petiole, **G. J. Samuels 797** (holotype: INPA, n.v.; isotype: NY!).

Additional material: Brazil. Amazonas: Serra Aracá, on palm petioles, Mar 1984, G. J. Samuels 567,702,768,848,862,951 (INPA, NY!); Philippines. Luzon: Los Banos, Mt. Makiling, just below Mud Spring, 24 May 1966, on wood K. P. & G. L. Dumont 735 (NY!).

Since publication of the names **Herpotrichia villosa** Samuels & Müller and

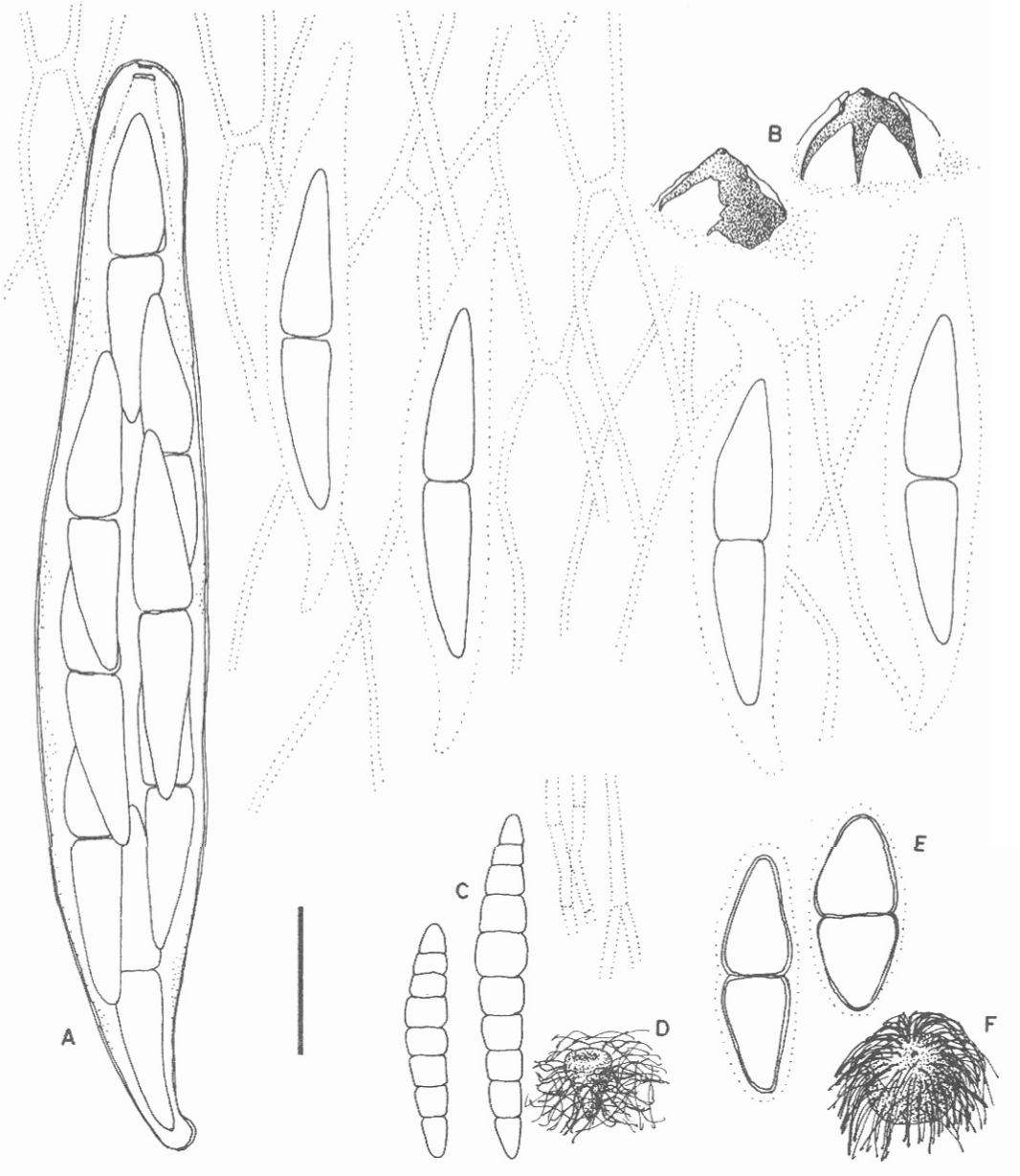

Fig. 1. Loculoascomycetes from the Amazon: A-B, **Javaria samuelsii** (Samuels 797). A. Ascus, ascospores and pseudoparaphyses; B. Ascomata. C-D, **Tubeufia roraimensis** (Samuels 530). C. Ascospores and pseudoparaphyses; D. Ascoma. E - F, **Byssosphaeria villosa** (Dumont-Br 425). E. Ascospores; F. Ascoma. (Standard line = 20 µm for ascus and ascospores; 01 mm for ascomata.)

Thaxteriella roraimensis Samuels & Müller (1979a,b), Barr has presented studies on those genera and concluded (Barr, 1984) that the species named in **Herpotrichia** are a heterogeneous assemblage and (Barr, 1980) that **Thaxteriella** is synonymous with **Tubeufia**. **Thaxteriella roraimensis** is here transferred to **Tubeufia**. This species resembles **T. clintonii** (Peck) Barr microscopically, but is distinguished macroscopically by a lush hyphal tomentum that carpets the substrate about the ascomata. **Herpotrichia villosa** does not belong in **Herpotrichia**, for it possesses the characteristics of **Byssosphaeria** as delimited by Barr (1984). The ascomata in H. **villosa** have apices that are black to orange, and in this manner resemble **B. schiedermayeriana** (Fuckel) Barr, but **H.villosa** can be separated from that species by its broader ascospores with gelatinous sheaths. **Byssosphaeria** appears to be well represented in the Amazon, for Dr. Samuels's specimens from the states of Amazonas and Roraima also include **B. jamaicana** (Siv.) Barr, **B. rhodomphala** (Berk.) Cooke, and **B. schiedermayeriana** (Fuckel) Barr.

Tubeufia roraimensis (Samuels & Müller) Boise, comb. nov. (Fig.1; C,D)

Basionym: **Thaxteriella roraimensis** Samuels and Müller, Sydowia 31: 137. 1979. Holotype: Brazil, Roraima, on wood, 21 Nov 1977, Dumont-BR 651, NY!.

Byssosphaeria villosa (Samuels & Müller) Boise, comb. nov. (Fig.1; E,F)

Basionym: **Herpotrichia villosa** Samuels & Müller, Sydowia 31: 158. 1979. Holotype: Brazil, Roraima, on bark, 17 Nov 1977, Dumont-BR 425, NY!

RESUMO

Um novo gênero de fungo, ***Javaria****, e espécie,* ***J. samuelsii****, são descritos baseados no material coletado na Serra do Aracá, Amazonas. A taxonomia de duas outras espécies amazônicas está atualizada:* ***Herpotrichia villosa*** *está transferida para o gênero* ***Byssosphaeria*** *e* ***Thaxteriella roraimensis*** *sai para* ***Tubeufia****.*

ACKNOWLEDGMENTS

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References

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