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A NEW *SOROKINA* (*LEOTIALES*) FROM PUERTO RICO

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A new *Sorokina* (*Leotiales*) from Puerto Rico

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Summary. A new species of discomycete with a blue-grey hymenium, *Sorokina caeruleogrisea*, is described and illustrated from Puerto Rico. Other known species of the genus are also compared.

INTRODUCTION

During ecological survey work undertaken in the El Verde Research area in the Luquillo Mountains of Puerto Rico, an unusual discomycete with a blue to blue-grey hymenium was collected from a large fallen branch by one of the zoologists working in the research grids. A second collection was made at the same site on the following day. This discomycete proves to represent an undescribed species referable to the genus *Sorokina* Sacc.; it is formally described and illustrated below, and compared to other known species of the genus.

TAXONOMIC DESCRIPTION

***Sorokina caeruleogrisea* Spooner, Læssøe & Lodge sp. nov.** *Sorokina insignis* Penz. & Sacc. similis sed apotheciis caespitosis ad basin non lacunatis, hymenio griseo-lazulino nec 'obscure glauco-viridi dein atro', ascosporis clavate-ellipsoideis nec ellipso-fusoideis, parum latioribus (3.5-4.5 μm nec 3.5 μm latis), septo submediano nec mediano, et ascis angustioribus 7-8 μm nec 10-11 μm latis, ad apicem non truncatis differt. Holotypus: Puerto Rico, Luquillo Mountains, El Verde Research Area, Zucca plot 3, on fallen dicot. log, 370 m, 2 April 1989, leg. X. Alvarez (Lodge PR 3213) (K(M) 15805) (isoholotype, CFMR).

Apothecia cupulate, caespitose, short stipitate, firm, 5-22 mm diam. *Disc* concave, blue-grey, 'smalt blue', 'blue-black,' 'indigo' (Smithe 1975), with margin white, mealy. *Receptacle* minutely downy, glaucous (79-80; Smithe 1975); stipe tapered downwards, rugose, central or excentric. *Odour* and taste none. *Spore deposit* blackish. *Asci* 8-spored, 102-134 x 7-8.5 μm , narrowly clavate, apex rounded to somewhat mammiform, apical pore iodine-negative, long-tapered below, with enlarged croziered base 5-7 mm across, spore-bearing part 35-43 μm long. *Ascospores* dark brown, 9.2-11.5(-12.5) \times (3.5-)3.8-4.0(-4.5) μm ,

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clavate-ellipsoid, 1-septate, septum sub-median sometimes with slight constriction, larger (usually upper) cell (5.2-)6.5-7.5 μm , smaller (usually lower) cell 3-4.5 μm long, wall finely longitudinally striated, striae straight to slightly oblique; spores usually obliquely biserial within the ascus. *Paraphyses* copious, hyaline, septate, flexuous or curved above, apex sometimes clavate or subcapitate, 2-3(-3.5) μm diam., not agglutinated, uppermost half of the length with pale yellow-brown to subhyaline granular encrustation dissolving in Melzer's Reagent, extending 10-30 μm above the asci. *Subhymenium* comprising a hyaline ascogenous zone 15-20 μm thick and a layer 50-70 μm thick of interwoven hyphae 4-7 μm diam. with dark brown encrusting pigment. *Medullary excipulum* 400-500 μm thick, of interwoven hyphae with thin or slightly thickened walls, pale brown with sparse encrusting pigment towards the hymenium, becoming virtually hyaline towards the ectal layer. *Ectal excipulum* 80-100 μm thick, composed of irregular chains of thin-walled cells lying perpendicular to the surface, walls pigmented dark brown, darker towards the surface, (7-)9-15(-18) \times 5-11(-13) μm diam., broadest towards the surface, running out at the surface as free, hair-like tips. Figs 1 & 2.

COLLECTIONS EXAMINED. Puerto Rico, Luquillo Mts, El Verde Research area, Zucca plot 3, 10 m from canopy walkway tower, on fallen dicot. log, 370 m, 2 April 1989, leg. X. Alvarez (*Lodge* **PR** 3213), K(M) 15805, (holotype, **K**; isotype CFMR). Same locality, 3 April 1989, leg. D. J. Lodge (*Lodge* **PR** 3213.1.), K(M) 36785, isoparatype CFMR.

Sorokina is a small genus of inoperculate discomycetes, comprising apparently lignicolous saprobes with apothecia that are fairly large, commonly greater than 1 cm diam., and occurring primarily in tropical regions. It is holotypified by *S. microspora* (Berk. ex Cooke) Sacc., from Venezuela, characterised by dark brown, longitudinally striated, transversely 1-septate ascospores, and a brown pigmented, cellular ectal excipulum. The genus was referred by Dennis (1958) to *Dermateaceae*, followed by Hawksworth *et al.* (1995), although Korf & Lizon (1993, 1994) have placed the genus in *Leotiaceae*.

Cooke introduced the basionym *Bulgaria microspora* based on a Berkeley & Curtis herbarium name. He did not cite any collection number, and we here select as lectotype no. 214 that bears an illustration of asci and ascospores on the packet. Several other packets are preserved in **K**, two of which are unnumbered, others bearing the numbers 208, 257, 258. All contain the same fungus and all came from Venezuela (Curtis collections). It should be noted that, although frequently cited as *B. microspora* Berk., this name was in fact published by Cooke two years after Berkeley's death; it should be cited as *B. microspora* Berk. ex Cooke.

Sorokina microspora has sessile, purplish-brown apothecia that were described as having gelatinous flesh (Cooke 1891). However, examination of type material preserved in **K** reveals a medullary excipulum composed of non-gelatinized interwoven hyphae which are readily separated in squash mounts (Dennis, unpublished; confirmed in this study). The present species differs from *S. microspora* in having apothecia that are caespitose and blue-grey, and in having larger ascospores with a sub-median septum.

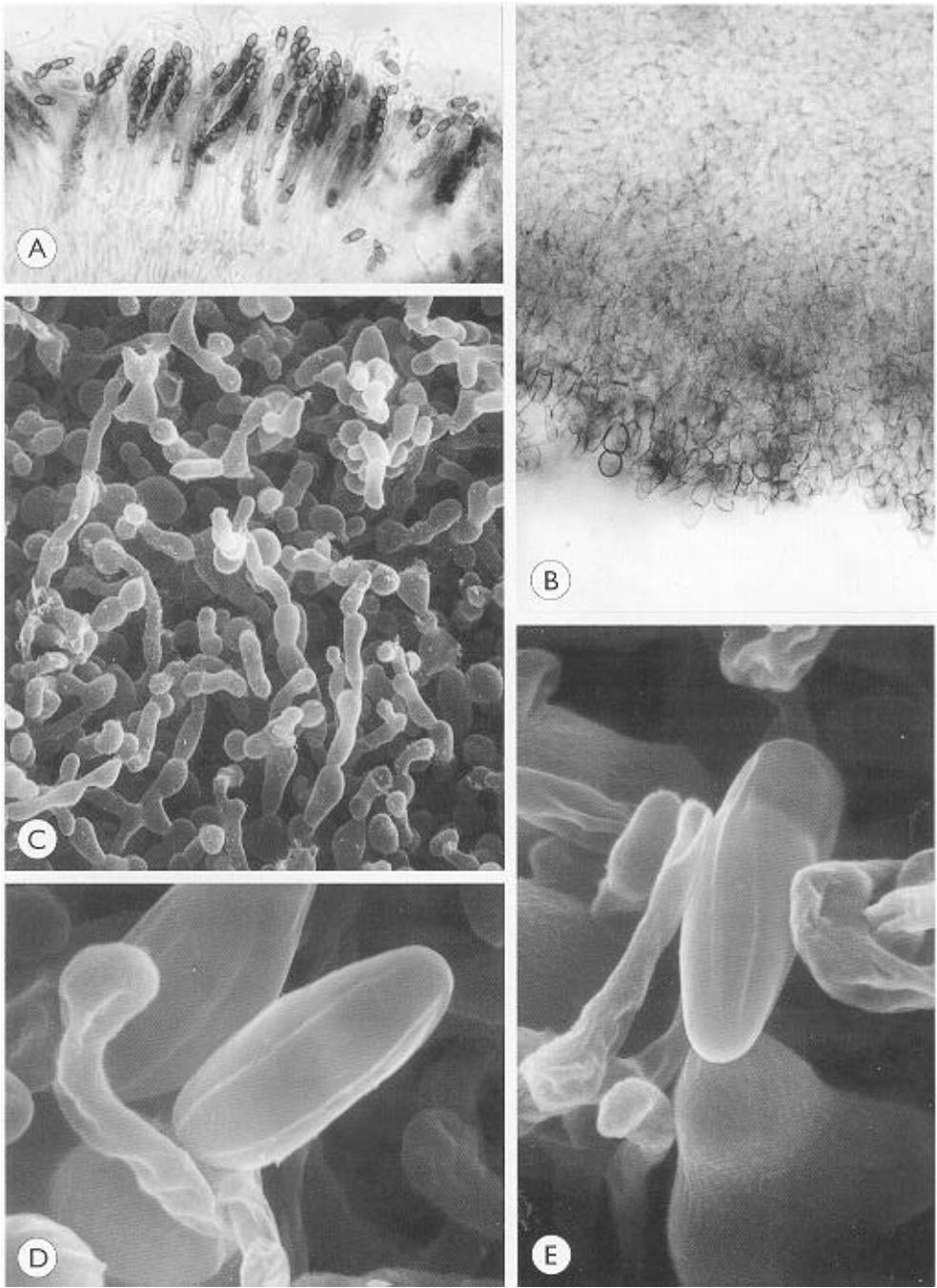


FIG. 1. *Sorokina caeruleo-grisea*, paratype. **A** vertical section of hymenium; **B** vertical section to show excipular structure; **C** surface SEM 2 mm below margin; **D** & **E** ascospores, SEM to show surface ornament; **E** with ascus apex.

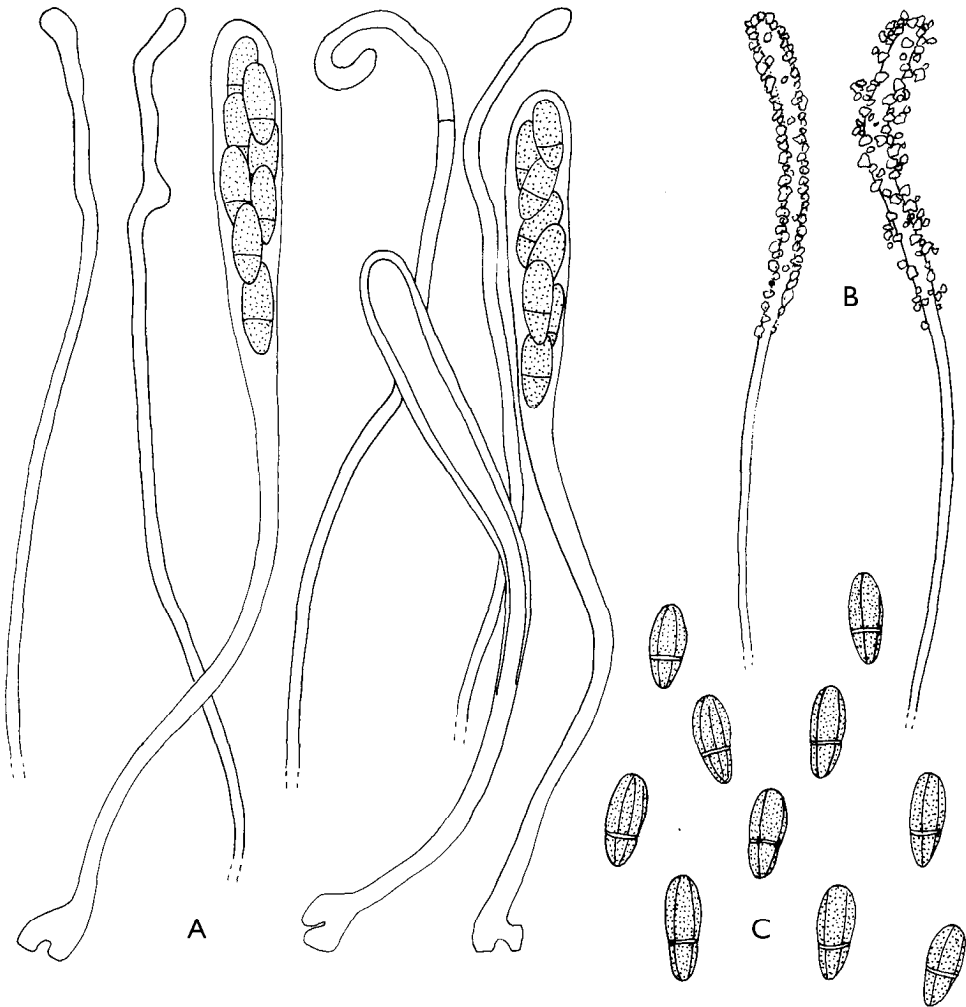


FIG. 2. *Sorokina caeruleogrisea*, holotype. A asci and paraphyses (observed in Melzer's Reagent); B paraphyses, unstained; C ascospores. All $\times 1000$.

Seven species have been referred to *Sorokina*, although a brief review of these to make a comparison with the present species indicates that four of them, *S. bogoriensis* Henn. & E. Nyman, *S. uleana* Rehm, *S. blasteniospora* Rehm and *S. tjibodensis* Henn. & E. Nyman, are unlikely to belong in this genus. *Sorokina uleana* and *S. blasteniospora* are foliicolous species with tiny apothecia, less than 1 mm diam., and with a thick, fuscous, gelatinous epithecium and apparently have little in common with typical *Sorokina* species. *Sorokina bogoriensis* and *S. tjibodensis* also have tiny apothecia and, although they occur on wood, they are unlike typical members of *Sorokina* in having comparatively broad asci and paraphyses which form a brown epithecium (Hennings 1900).

The present species appears to be most closely related to *S. insignis* Penz. & Sacc. (Penzig & Saccardo 1902). Based on the original description and the plate in Penzig & Saccardo (1904), the latter differs in having blue green, non-caespitose apothecia with a lacunate base. Furthermore, the spores of *S. insignis* are ellipso-fusoid, have a median septum rather than the submedian septum characteristic of *S. caeruleogrisea*, and they are also narrower, to 3.5 µm wide. The spore ornamentation of *S. insignis* is not known. In addition, the asci of that species are broader, 10-11 µm wide, and more truncate at the apex.

Sorokina lignicola Rodway was suggested by Dennis (1958) to be 'doubtfully distinct' from *S. microspora*, but ascospore characters deviate (Spooner, unpubl.) and it appears to be a distinct but closely related species.

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