

ON THREE AUTUMNAL SPECIES OF BISPORELLA
(DISCOMYCETES) IN NEW YORK

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ABSTRACT

Among the junior author's collections near Ithaca, New York are two unusual and characteristic species of *Bisporrella* (= *Calycella* Auct.). A new species, *B. iodocyanescens*, is reported on the stromata of *Melanomma pulvis-pyrius* on a hardwood log, differing from other species of the genus in having pyriform to globose cells in chains making up the glassy ectal excipulum, and from nearly all other species in having the ectal layer turning blue in Melzer's Reagent. A large, stipitate species, probably quite common, long confused with *B. citrina*, but with a much thinner excipular layer and larger spores, is shown to have been described first by Schweinitz from North America as *Peziza confluens*, a later homonym. It should now be called *B. confluens* (Sacc.) Korf & Bujakiewicz. A third species of the genus, infrequently collected in North America, with 4-spored asci and nearly white apothecia, variously assigned to *Helotium*, *Dasyscyphus*, *Hymenoscyphus*, and *Belonioscypha*, has always been cited with incorrect author citations. Its author citation is corrected to *Bisporrella lactea* (Sacc.) Stadelmann.

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I. A NEW BISPORELLA WITH AN UNUSUAL
EXCIPULAR STRUCTURE

Among her collections of Discomycetes for an ecological study of floodplain fungi, the junior author collected a very small, thin species on stromata of *Melanomma pulvis-pyrius* (Pers. : Fr.) Fuckel that, on drying, looks very like a species of *Orbilina*, but has asci, ascospores and structure of the Leotiaceae, not Orbiliaceae. The ectal layer is composed of hyphae in which the individual cells round up to nearly globose or pyriform shapes, at a high angle or nearly perpendicular to the surface, with glassy walls, immersed in a cementing gel. Except for the more or less globose elements of the excipular layer, this would be a typical member of the genus *Bisporrella* Fuckel (Korf & Carpenter, 1974). It has nonseptate ascospores, but there are other species of *Bisporrella* that share this character. An additional feature of major interest is the reaction to Melzer's Reagent, which turns the tissues of some ectal, the medullary tissues and the subhymenium distinctly blue in sections mounted from water rehydration. A similar blue reaction is known to us in another apparently undescribed species of *Bisporrella*, also with nonseptate spores, issued in an exsiccata collection, William Phillips's *Elvellacei Britannici* #41, as *Helotium citrinum* Fr. Possibly that specimen is referable to *B. subpallida* (Rehm in Rabenh.) Dennis. The blue reaction of the North American species is (unexpectedly) not enhanced by pretreatment with KOH (Kohn and Korf, 1975), but becomes scarcely visible. On the other hand, the ascus pore channel is not blue in water hydration mounts, but strongly blue in Melzer's Reagent when pretreated with 10% KOH. Clearly the chemical or physical factors responsible for the blue reaction differ here between those in the excipular layers and in the ascus pore channel. This North American material seems so distinctive that we describe it here, recognizing that its inclusion in *Bisporrella* might well argue for creation of a new subgenus to accommodate it. Since this genus is currently the subject of a monographic study by Dr. Steven E. Carpenter, we await his decision on infrageneric groupings before making such a formal proposal. A fungicolous habit is a common feature for many species of the genus, as already noted by several authors.

BISPORELLA IODOCYANESCENS Korf & Bujakiewicz,
sp. nov. (FIGURE 1)

Ab *Bisporellae* speciebus aliis cellulis excipuli ectalis subsphaericis vel pyriformibus differens.

HOLOTYPE: NEW YORK: On stromata of *Melanomma pulvis-pyrius* on a hardwood log, plot #1, *Ulmus-Fraxinus-Carya* floodplain, Fall Creek, near Varna, leg. A. Bujakiewicz (#402), 8.x.1982 (CUP 60633).

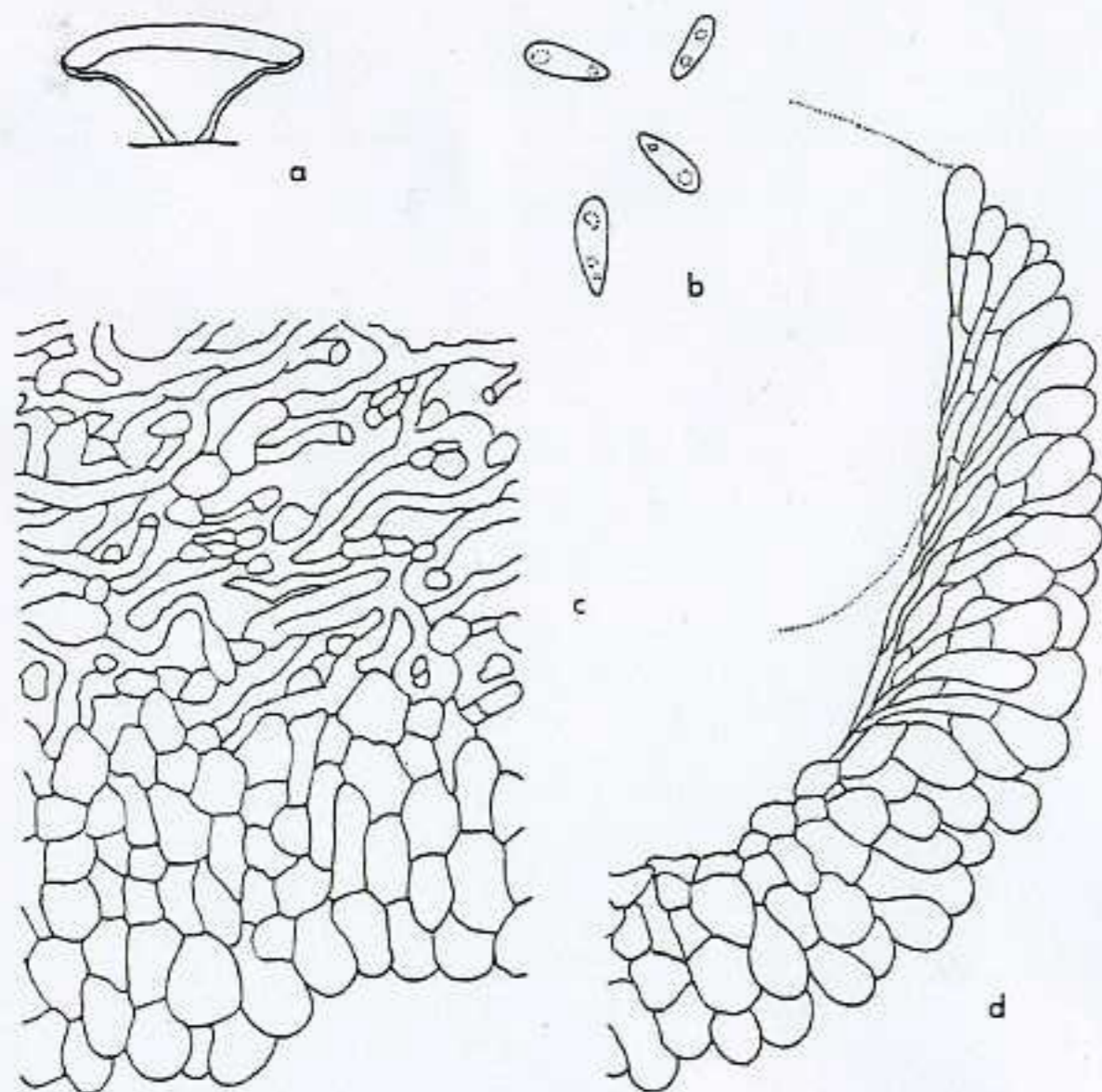


FIG. 1. *Bisporella iodocyanescens*, holotype. a, diagram of apothecial tissues, x 25; b, four ascospores x 1500; c, ectal and part of medullary excipulum from flanks, x 1000; d, ectal excipulum from margin, x 1000.

Apothecia gregarious, coalescent, sessile, discoid to somewhat flattened, up to 1.3 mm diam (or even larger) when rehydrated, 0.5-1.0 mm diam when dried, hymenium yellowish-orange, semitranslucent, receptacle concolorous when dry. In section: ectal excipulum of textura angularis to textura globulosa, about 36-44 μm thick, cells arranged in rows perpendicular to outer surface or nearly so, spherical to pyriform, hyaline, 5.5-11.0 μm in diam, cell walls somewhat glassy-gelatinous; medullary excipulum of textura intricata, not immersed in a gel, thin near the margin, thicker below, hyphae hyaline, 3.5-4.5 μm broad; subhymenium of textura intricata, ca. 14 μm thick, hyphae densely interwoven; Melzer's Reagent causing blue reaction in subhymenium, medullary excipulum (especially near the ectal excipulum) and ectal excipulum (except for outermost cells) in mounts from water, but reaction very slight or none after 10% KOH pretreatment. Asci cylindrical, 8-spored, 55-66 x 3.6-4.0 μm , arising from repeating croziers, ascus pore wall J- without KOH pretreatment, strongly blue after 10% KOH pretreatment. Ascospores uniseriate, mostly biguttulate, unicellular, ellipsoid with one end broader, 4.5-6.3 x 1.5-2.0 μm . Paraphyses filiform, 0.8-1.0 μm wide, scarcely or not exceeding the asci.

II. A FORGOTTEN, LARGE SPECIES OF BISPORELLA

In the Ithaca area and as far south as Tennessee there occurs, with relatively great frequency, a wood-inhabiting, autumnal species of *Bisporella* that has been assumed to be merely a large or robust form of *Bisporella citrina* (Batsch : Fr.) Korf & Carpenter. It differs markedly from that species, however, in having a much thinner ectal excipulum, and in its very much larger apothecia (often 6 mm in diam, reported to 3 cm in diam), that are provided with a delicate central point of attachment instead of the broad base and turbinate shape of typical collections of *B. citrina*. Its ascospores, too, are appreciably larger than those of *B. citrina*, though as in that species (and many others in the genus), they are predominantly 1-septate.

L. D. de Schweinitz (1832) was apparently the first to describe this species, as *Peziza confluens* Schw., the epithet derived from the strong tendency of the apothecia to coalesce at the margins (as, of course, may such

species as *B. citrina*). Schweinitz's name is a later homonym of *P. confluens* Persoon (1799), and had no nomenclatural standing until fifty-seven years later when it was finally picked up by Saccardo (1889), who transferred it to *Dasyscypha* and thereby gave new status to the epithet (International Code of Botanical Nomenclature, Art. 72.1 Note). We are instructed by the Code to cite the name as *H. confluens* Sacc., not *H. confluens* (Schw.) Sacc.¹ Schweinitz's species (or, according to the Code, Saccardo's species!) has been either ignored by succeeding workers, or placed in synonymy with the very different *B. citrina* (Seaver, 1951). We provide the following new combination, the synonymy, and a description of the species here:

BISPORELLA CONFLUENS (Sacc.) Korf & Bujakiewicz,
comb. nov. (FIGURE 2)

- = [*Peziza confluens* Schw., Trans. Amer. Philos. Soc., n.s. 4: 176. 1832, non *P. confluens* Pers., Obs. Mycol. 2: 81. 1799 (Later homonym)].
- = *Helotium confluens* Sacc., Syll. Fung. 8: 222. 1889 (ut "Schw.") (new name, ICBN Art. 72.1 Note) (Basionym).

Apothecia gregarious, often coalescing at the undulating margins, 3-6 (-30) mm in diam when fresh, centrally short-stipitate, hymenium bright orange to fulvus to sienna when dry, receptacle pale yellow when fresh and when dry. In section: ectal excipulum of textura angularis, tissues highly gelatinous, (15-) 30-50 (-75) μm thick, cells glassy-walled, 6.6-8.5 x 4.5-6 μm , marginal cells forming nearly a textura prismatica; medullary excipulum of textura intricata, not immersed in gel, hyphae 3.5-5.2 μm broad; subhymenium not easy

¹. Art. 72.1 Note destroys a major purpose of author citation by advocating elimination of the name of the author whose type specimen is involved! In this instance, Saccardo becomes the author of record, but the type specimen is still that of Schweinitz. I would much prefer to cite this species as *Bisporrella confluens* (Schw. ex Sacc.) Korf & Bujakiewicz, but as presently written the Code makes no such recommendation.

to distinguish from the medullary excipulum, ca. 25 μm thick. Asci subcylindrical, 8-spored, wall fairly thick, pore wall channel J+ (very slightly blue in Melzer's Reagent, enhanced by KOH pretreatment), 125-135 x 7.5-8.8 μm , croziers not seen. Ascospores uniseriate, ellipsoid, 2-4-guttulate, 1-septate, (9.5-) 11.3-14.2 (-16.5) x 3.3-4.4 (-4.7) μm . Paraphyses filiform, 1.5-2.2 μm wide, not exceeding the asci.

EXSICCATI:

Ellis, North American Fungi #1316 (*Helotium confluens*): probably a mixed collection: "collected in various places, mostly by Mr. Everhart, at West Chester, Pa."

CRITICAL SPECIMENS EXAMINED:

New Jersey: Newfield, rotten wood, 1886, Ellis (CUP-D 8429, 84-177).

New York: Buffalo, G.W. Clinton (CUP-D 5437, 84-123); Karner, Oct., Dr. Peck (CUP-D 5940, 84-175); Ringwood, Lloyd-Cornell Preserve, on wood, 29.ix.1958, R.P. Korf (R.P.K. 58-15); Varna, upland forest along Fall Creek, 9.ix.1982, A. Bujakiewicz (#620) (CUP-59856).

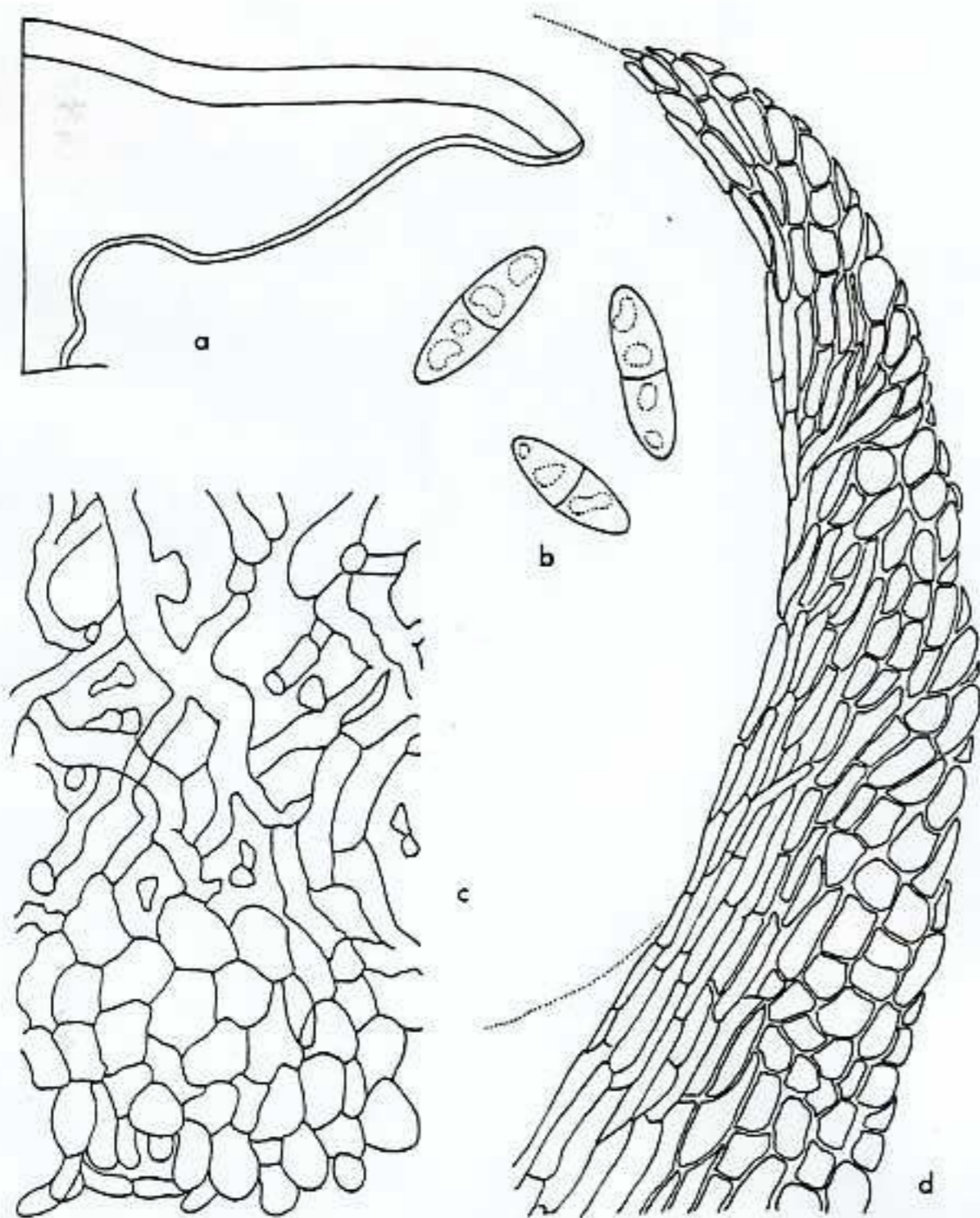
Pennsylvania: [Bethlehem], Syn. N. Am. 903, isotype (CUP-D 3887, 84-172); ? West Chester, Ellis's N. Am. F. 1316 (CUP-A).

Tennessee: Whitewater Falls, Jackson County, 29.ix.1955, A.J. Sharp (TENN 22282); Great Smoky Mts. National Park, Roaring Fork, Mt. LeConte, 3500-4000 ft., 16.ix.1955, A.J. Sharp & H. Robinson (TENN 22188).

III. CORRECT AUTHOR CITATION FOR THE WHITE, 4-SPORED SPECIES OF *BISPORELLA*

An infrequently collected, but unmistakable species of *Bisporrella* is milk-white in color, and possesses 4-spored asci with 1- to 3-septate ascospores. The apo-

FIG. 2. *Bisporrella confluens*, from CUP 59856. a, diagram of apothecial tissues, x 25; b, three ascospores, x 1500; c, ectal and part of medullary excipulum from flanks, x 1000; d, ectal excipulum from margin, x 1000.



thecia occur in great troops upon decorticated wood, sometimes at the bases of trees. The species has had a turbulent taxonomic history. It was first described as *Helotium lacteum* Ellis & Everhart (1888) based on a specimen from Cazenovia, New York, collected in October, 1887. Two collectors were mentioned: Prof. L. M. Underwood and O. F. Cook, Jr. Five years later the species was again published as new, with the same name, *Helotium lacteum* Ellis & Everhart (1893), and a somewhat differing description, but this time the Cazenovia specimen was noted as "O. F. Cook, No. 201" and a second collection was mentioned, from Marcellus, N.Y., "Nov. 1889. (Underwood, No. 66)." Without doubt Dennis (1964) was correct in designating the Cazenovia specimen as "typus." Saccardo (1889) picked up the first description and transferred the epithet to *Dasyscypha*, presumably because the original diagnosis refers to cup and stem as "tomentose." When Saccardo (1895) encountered the republication of the name, he thought it to be new and transferred it to *Helotiella*, perhaps because there the cup was referred to as "glandular-pruinose" and the stem as "pruinose." Seaver (1951) transferred the species to *Belonioscypha*, and provided diagnostic drawings and a good photograph of the gregarious apothecia. Dennis (1964) placed the species in *Hymenoscyphus*, but because there already was a *H. lacteus* (Cooke) Kuntze he was forced to provide a new name for it, *H. ellisii*. Matheis (1972) accepted Dennis's placement of the species, and again provided an excellent habit photograph and diagnostic line drawings. Stadelmann (1979) monographed *Belonioscypha*, and correctly excluded this species, recognizing for the first time that it belongs in *Bisporella*. The combination provided by Stadelmann is incorrect, however, since technically Ellis and Everhart are not the publishing authors, again because of the application of Art. 72.1 Note of the Code. The species, and its several synonyms, should be correctly cited as:

BISPORELLA LACTEA (Sacc.) Stadelmann, *Nova Hedwigia* 30: 830. 1979 ('1978') (ut "(Ell. & Ev.) Stadelmann").

- = [*Helotium lacteum* Ell. & Everh., *J. Mycol.* 4: 56. 1888; republished as *H. lacteum* Ell. & Everh., *Proc. Acad. Nat. Sci. Philadelphia* 1893: 145. 1893 (non *H. lacteum* Cooke, *Grevillea* 8: 63. 1879) (Later homonym)].

- = *Dasyscyphus lacteus* Sacc., Syll. Fung. 8: 436. 1889 [ut "*Dasyscypha lactea* (E. & E.) Sacc." (new name: ICBN Art. 72.1 Note) (Basionym)].
- = *Helotiella lactea* (Sacc.) Sacc., Syll. Fung. 11: 415. 1895 (ut "E. & E.").
- = *Belonioscypha lactea* (Sacc.) Seaver, N. Am. Cup-Fungi (Inop.) p. 177. 1951 [ut "(Ellis & Ev.) Seaver"].
- = *Hymenoscyphus ellisii* Dennis, Persoonia 3: 48. 1964 [nom. nov., non *H. lacteus* (Cooke) Kuntze].

RECENT COLLECTION: On decorticated buttress roots of a dead *Acer*, Lloyd-Cornell Preserve, Slaterville Springs, NY, 18.ix.1979, D. Florini, J. Yuen & R.P. Korf (CUP 58155).

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