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 glassey 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 confinis, a later homonym. It should now be called B. confinis (Sacc.) Korf & Bujakiewicz. A third species of the genus, infrequently collected in North America, with 4-spored asci and nearly white ascospores, variously assigned to Helotium, Dasyascus, Hymenoscyphus, and Belonoscypha, 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.) Fückel that, on drying, looks very like a species of Orbilia, but has asci, ascospores and structure of the Lectiaceae, 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 Fückel (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 subhyphalium 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 alis cellulæ excipuli eetalis subphaericiis vel pyriformibus differentes.

HOLOTYPE: NEW YORK: On stromata of Melanomma pulvis-pyriris on a hardwood log, plot #1, Ulmus-Fraxinus-Carya floodplain, Fall Creek, near Varna, leg. A. Bujakiewicz (#602), 8.x.1982 (CUP 60533).

![Diagram](image)

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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 texture 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, cells 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 crosiers, ascus pore wall - 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.

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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 5 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 Schv., the epithet derived from the strong tendency of the apothecia to coalesce at the margins (as, of course, may such
species as B. citrina). Schweinert's name is a later homonym of P. confluent 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 Dasyocypha and thereby gave it 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. confluent Sacc., not H. confluent (Schw.) Sacc.; Schweinert'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:

**Bisoprella confluent** (Sacc.) Korf & Bujakiewicz, comb. nov. (Figure 2)

- Heliotium confluent Sacc., Syll. Fung. 8: 222. 1889 (ut "Schw.") (new name, ICBN Art. 72.1 Note) (Basioniym).

Apothecia gregarious, often coalescing at the undulating margins, 3-6 (-30) mm in diam when fresh, centrally short-stipitate, hymenium bright orange to fulvous 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
to distinguish from the medullary excipulum, ca. 25 μm thick. Ascii 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, crosiers not seen. Ascospores uniseriate, ellipsoidal, 2-4-guttulate, 1-septate, (9.5-) 11.5-14.2 x 3.3-4.4 x 3.4-5 μm. Paraphyses filiform, 1.5-2 μm wide, not exceeding the ascii.

**EXSIICATI:**
Ellis, North American Fungi #1316 (Heliotium confluent); 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 8242, 84-177).
- New York: Buffalo, G.W. Clinton (CUP-D 5437, 84-123); Karner, Oct., Dr. Peck (CUP-D 9540, 84-175); Ringwood, Lloyd-Cornell Preserve, on wood, 29.x.1956, R.P. Korf (R.P.K. 59-15); Varna, upland forest along Fall Creek, 9.x.1982, A. Bujakiewicz #5620 (CUP-59656).
- Pennsylvania: [Bethlehem], Syn. N. Am. 903, isotype (CUP-D 3867, 84-172); West Chester, Ellis's N. Am. F. 1316 (CUP-A).

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

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

**FIG. 2. Bisoprella confluent,** from CUP-59656. a, diagram of apothecial tissues, x 25; b, three ascospores, x 100; 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 (1899) picked up the first description and transferred the epithet to Dasycypha, presumably because the original diagnosis refers to cup and stem as "lomentose." When Saccardo (1895) encountered the republication of the name, he thought it to be new and transferred it to Helotella, 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. ellisi. Mathews (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 Bisporaella. 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").

= Helotiella lactea (Sacc.) Sacc., Syll. Fung. 11: 415. 1895 (ut "E. & E.").
= Belonoscypha 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].


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LITERATURE CITED


