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Notes on Iowa Fungi. XI.

G. W. Martin
State University of Iowa

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Notes on Iowa Fungi. XI.

G. W. MARTIN

HYPOMYCES APICULATUS (Peck) Seaver

The range of this species, as given by Seaver (N. A. Flora 3: 42. 1910), is "New York to Virginia." A small but adequate collection, growing on soil in woods near Iowa City, is referred to it with some hesitation. The perithecia are more protrudent than the description seems to imply, but the globose base is immersed in the subiculum. Otherwise it is in agreement and it is certainly distinct from any of our other species. Unlike other species of the genus, *H. apiculatus* is not associated with the remains of other fungi, a circumstance which led to its original assignment to *Hypocrea*. The spores are of the typical *Hypomyces* type, fusiform, apiculate, 2-celled, rough and $26-28 \times 6-7\mu$. The color of our specimen is now a rather pale, dull brown.

HYPOMYCES AURANTIUS (Pers.) Tul. Fig. 2

Rather common in Iowa, occurring on old sporophores of various hymenomycetes. Some collections, when fresh, appear to approach *H. aureo-nitens* Tul. in their paler color, but when dry such collections are indistinguishable from what are regarded as typical collections of *aurantius*. Seaver (Mycologia 2, pl. 21, figs. 9, 13) illustrates the spores of the two species, showing those of *aureo-nitens* as somewhat more slender than those of *aurantius*. In this respect our material tends to resemble *aureo-nitens*, but spores resembling both species may be found in a single perithecium, as shown in Fig. 2.

Three other species of *Hypomyces* are represented in the University of Iowa collections: *H. lactifluorum* (Schw.) Tul. seems to occur wherever its favorite host, *Lactarius piperatus*, is found; *H. papyraceus* (Ell. & Holw.) Seaver, originally described from Iowa, is represented by three collections from Johnson County, and *H. rosellus* (Alb. & Schw.) Tul. by two collections from Johnson County and one from Dubuque County. In addition, we have numerous collections of *Sepedonium chrysospermum*, the imperfect stage of *H. chrysospermus*, but the only collection of the perithecial stage I recall gathering in this state cannot now be found.

PAXINA SEMITOSTA (Berk. & Curt.) Seaver

According to Seaver, this handsome species ranges from New York to Wisconsin and Iowa. It must be rare in Iowa, as there are no specimens in the mycological collection of the State University other than the one here noted. This was gathered in the Amana woods on October 5, 1946. The fructifications were on soil, but adjacent to fallen logs, suggesting that the mycelium was partly in the wood. They were densely caespitose, about thirty cups in three groups, and practically stemless. Only the rather sparse, but typical,

dark brown tomentum removes the species from *Peziza*, with which its affinities are obvious. The largest ascocarp was 6 cm. in diameter and 6 cm. deep, somewhat larger than the limits indicated by Seaver.

HELVELLA ATRA Fries

As pointed out by Seaver (N. A. Cup-fungi 248. 1928), this species is scarcely different from *H. elastica* except for the color. That character is consistent, however, the general habit is shorter and stockier and our collections are on very rotten wood whereas *H. elastica* grows from the soil. The species is not common, but has been picked up occasionally in and around Iowa City over a period of many years and seems to be worthy of recognition.

PISTILLARIA TYPHULOIDES (Peck) Burt, Fig. 1

Burt (Ann. Missouri Bot. Gard. 7: 69. 1922) apparently knew this only from Peck's original collection. The species of *Pistillaria* are so minute and inconspicuous that collecting has been sporadic and it is not unlikely that many of them are rather common. The collection which I refer to this species (G. W. M. 6359) was noted in October, 1947, on decaying ash leaves in a moist chamber shortly after they were moistened and had undoubtedly been present when they were brought in from the field. The material agrees reasonably well with Peck's description and Burt's comments. The clubs are 1-2 mm. in height and approximately one-fourth as much in diameter. The basidia are 2- or 3-spored; many of them appear to have become transformed into cystidium-like bodies with two or three prongs at the tip. In addition, there are fusiform cystidia which project 25-30 μ above the general level of the hymenium. The narrow portion between the base and the hymenial region is coated more or less abundantly with crystalline deposits. The basidiospores are 7-7.5 \times 3-4 μ ; Burt gives the dimensions as 5-6 \times 2.5 μ .

POLYPORUS POCULA (Schw.) Berk & Curt., Figs. 6, 7

This is said by Overholts (Wash. Univ. Stud. 3¹: 15, 1915) to be the smallest known polypore. Certainly, it is the smallest temperate species. Some of the tropical *Laschias* are smaller, but these species, despite their porose hymenia, are probably correctly regarded as distinct from the typical pore fungi. The species has been reported several times from Iowa under at least three names, as noted by Gardner (Proc. Iowa Acad. for 1947, 54, in press), but seems to be uncommon, or at least overlooked. We have four collections from eastern Iowa in the University herbarium, three of them from Johnson County.

The species has borne at least eight names and has been assigned to the cup fungi, the Sphaeriales, the Hypocreales, the Thelephoraceae and the Polyporaceae. The synonymy, as at present understood, is as follows:

- Peziza pendula* Schw. Schr. Nat. Ges. Leipzig 1: 118. 1822.
Cypella pendula (Schw.) Fries, Syst. Myc. 2: 203. 1823.
Sphaeria Pocula Schw. Proc. Acad. Phila. 4: 189. 1832.
Enslinia Pocula (Schw.) Fries, Summa Veg. Scand. 399. 1849.
Polyporus Pocula (Schw.) Berk. & Curt. Proc. Am. Acad. Arts & Sci. 4: 122. 1859.
Polyporus cupulaeformis Berk. & Curt. Grevillea 1: 38. 1872.
Porodiscus pendulus (Schw.) Murr. Bull. Torrey Club 30: 433. 1903.
Porodisculus pendulus (Schw.) Murr. N. A. Flora 9: 47. 1907.

In the 1903 publication cited, Murrill gives an excellent account of the species with full synonymy to date but does not mention the spore characters. The earliest reference to these is apparently to be found in Murrill's monograph of 1907, where he describes the spores as "globose, smooth, hyaline, 4 μ ." This is copied by Overholts in the 1915 paper cited. In a more recent paper, however, Overholts (Penn. State Coll. Tech. Bull. 298. 26. 1933), describes them as "allantoid, hyaline, 3-4 \times 1 μ ."

In external appearance our Iowa collections differ from each other in no significant respect and all would unquestionably be referred to the same species on that basis. Spore prints were secured from two of the Johnson County collections when they were brought in. The spores of one collection, G. W. M. 4979, are allantoid, 5 \times 1 μ . Those of the other, G. W. M. 6307, are broadly ovate, 7 \times 5 μ . Such differences are far beyond those ordinarily regarded as possible within the limits of a single species and it seems clear that there are at least two species involved—perhaps three, if Murrill was measuring mature spores of the specimen or specimens on which he based his statement of spore size and shape. Under such circumstances, only examination of the original specimens of *Peziza pendula* Schw., *Sphaeria Pocula* Schw. and *Polyporus cupulaeformis* Berk. & Curt. can determine the application of the specific names involved. Pending such examination, the combination of Berkeley and Curtis may be applied to the entire group, with such indication of spore characters as may seem to be desirable.

CILIOSPORA ALBIDA (Mass. & Crossl.) Grove, Fig. 3

Originally found in England, this species appears to have been reported in North America only from Ithaca, N. Y. Whetzel (Mycologia 34: 525-531. 1942) gives a careful description of it. Later, Seaver and Waterston (Mycologia 38: 187-192. 1946), in connection with their study of the related species *C. gelatinosa*, reisolated it from leaves collected at Ithaca.

The fungus has appeared a number of times in moist chambers on leaves of various species, including oak, elm and ash, collected in a rather limited area in Iowa City and has been secured in pure culture several times. The cultures are rather difficult to maintain and unless transferred frequently soon die.

When moist and in good condition, the hyaline-walled, gelatinous

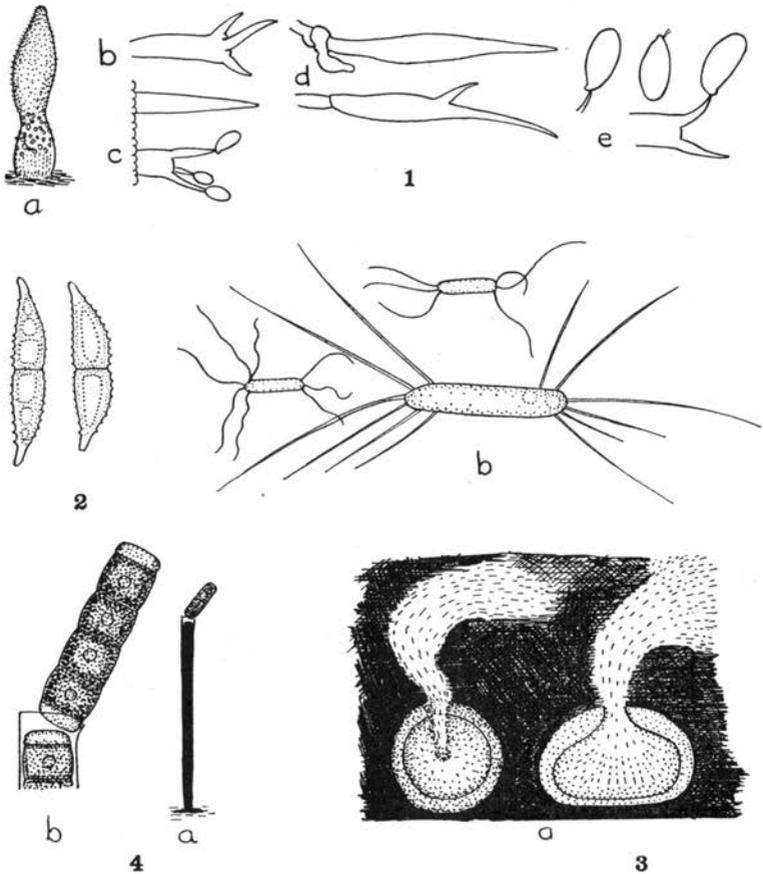


Plate I

EXPLANATION OF FIGURES

1. *Pistillina Typhuloides*. a, single club, $\times 20$; b, basidium after spore discharge, $\times 570$; c, basidium and cystidium emerging above surface of hymenium, $\times 570$; d, two cystidia, $\times 570$; e, three spores, mature or nearly so, but still attached.
2. *Hypomyces aurantius*. Two spores from a single perithecium, showing variation in shape, $\times 1000$.
3. *Ciliospora albida*. a, two pycnidia in water, discharging spores $\times 25$; b, three spores, the largest one $\times 570$, the others, $\times 215$.
4. *Sporoschisma mirabile*. a, conidiophore and emerging spore, $\times 215$; b, tip of same conidiophore with spore, $\times 1000$.
5. *Sporoschisma mirabile*. Cluster of three conidiophores, with spores and sterile hairs, $\times 185$.
6. *Polyporus Pocula*. Two basidiocarps of No. 4979, with allantoid spores, $\times 12$.
7. Same of No. 6307, with ovate spores, $\times 12$.

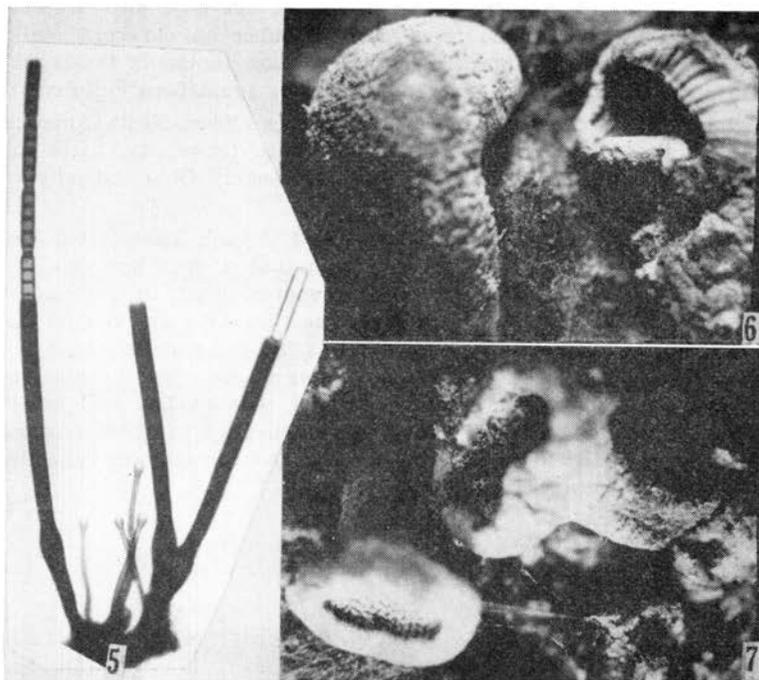


Plate II

pycnidia filled with a white mass of spores are rather conspicuous, but when exposed to the air dry very quickly to an all but imperceptible horny pustule, hence the chance of collecting the species in the field would be limited to periods during or immediately following rains. When placed in water, the emergence of the spores as a white stream suggests a miniature volcano (Fig. 3a).

Whetzel described the spores as very uniformly $35 \times 10\mu$, mostly with four appendages at either end. In the Iowa collections, the spores are more variable in size, but within the limits of the original description, $30-40 \times 7-8\mu$. The number of appendages is also more variable than he suggests; while there are commonly four at each end, the range observed is 3-6. Such variation is only what is to be expected in a widely distributed and perhaps not uncommon species.

SPOROSCHISMA MIRABILE Berk. & Br. Figs. 4. 5

This striking endosporous member of the Dematiaceae appears to be not uncommon in Europe, but in many years of collecting in Iowa, I have found it but twice. Many years ago it was discovered growing scantily on an old coniferous, probably pine, berry crate of unknown origin and it was suspected that it may have been introduced. Brought into the laboratory, it increased abundantly in a

moist chamber and was secured in culture but soon died. In February, 1948, it appeared in a moist chamber on old corn stalks brought in from a windrow deposited by last summer's floods in a lowland area along the Iowa River and has again been cultured.

I have not noticed any report of the species from North America, but in the Morgan Collection at the State University, there are seven packets, all presumably from southwestern Ohio and on various substrata.

The illustration in Engler and Prantl *l'***: 481. 1900, "nach Saccardo" is inadequate and misleading in that it does not show the smaller, paler terminal cells of the spores. That in Rabenhorst *Crypt.-Fl. l'*: 160. 1910, evidently after the same original, is distinctly better. The drawing shown here (Fig. 4), made from the earlier Iowa collection, is accurate so far as it goes, but the material as mounted did not show the constricted, then swollen base of the conidiophore nor the sterile capitate hairs. Both of these features are shown in the photograph made from the recent Iowa collection and reproduced as Fig. 5.

DEPARTMENT OF BOTANY,
STATE UNIVERSITY OF IOWA.