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## Notes on Iowa Fungi. VIII

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## NOTES ON IOWA FUNGI. VIII

G. W. MARTIN

### MYCOTYPHA MICROSPORA Fenner. Fig. 6.

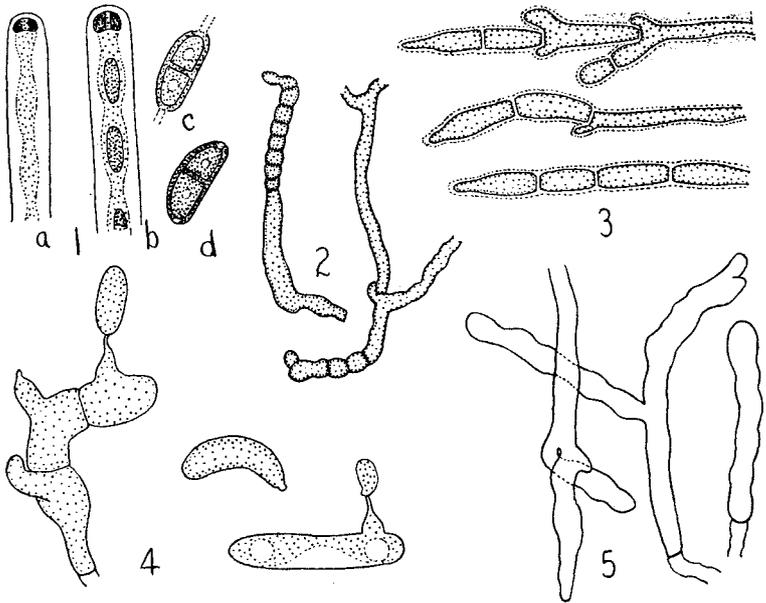
This striking member of the Mucorales appeared as a contaminant in a plate culture over which a piece of white pine wood bearing frutifications of *Calocera cornea*, collected in Pine Hollow, Dubuque County, in October, 1938, had been suspended. This is its third appearance. In both of the earlier instances, it had also appeared as a contaminant in plate cultures. The original record, from Washington, D. C. (*Mycologia* 24:187. 1932) was from plates in which attempts were being made to isolate an orange pathogen; the second, from Lafayette, Ind. (*Mycologia* 26:133. 1934) was the result of its appearance in connection with efforts to isolate a fungus attacking the fruits of the Japanese flowering quince. I am indebted to Dr. William H. Weston for identifying the species.

The name *Mycotypha* is almost as good as a description. The erect conidiophores exhibit such a striking resemblance to miniature cat-tails that this is actually the provisional laboratory name we applied to it before it was determined.

### LETENDRAEA LUTEOLA Ell. & Everh. Fig. 1.

According to Seaver (*N. A. Flora* 3(1):15. 1910 and *Mycologia* 1:75. 1912) known only from the type locality in Ohio. As Seaver states in the later reference: "the large brown perithecia and the brown septate spores are sufficient characters by which the species may be recognized." A small but adequate collection from Iowa City, on rotten wood, permits further comment, and, since the species has never been illustrated, justifies some figures.

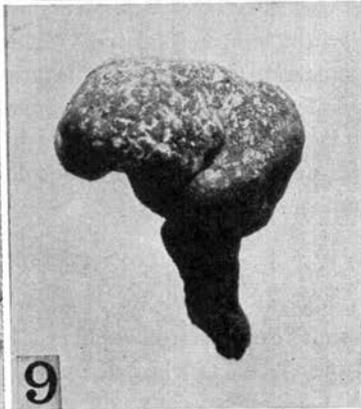
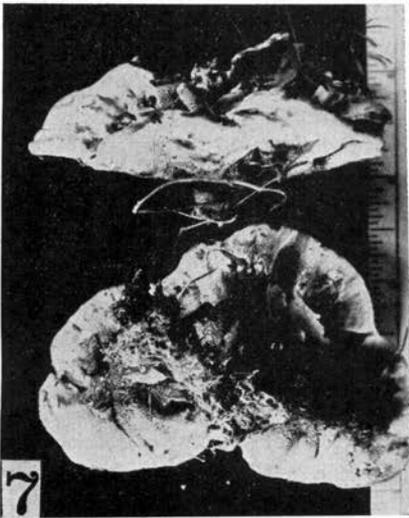
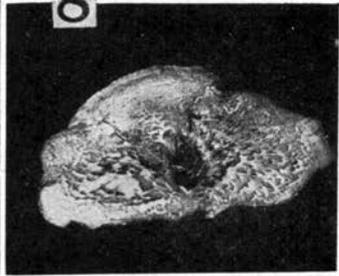
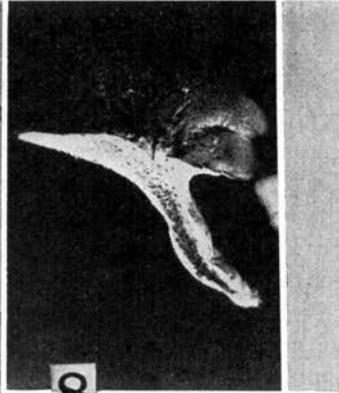
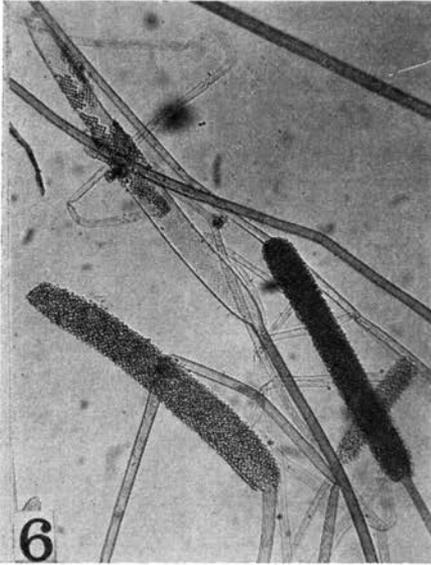
The perithecia are reddish brown when moist, becoming almost black when dry, and are much larger than the published records would suggest, mature perithecia mostly ranging from 400-600  $\mu$  in diameter. Numerous smaller perithecia are present, but seem to be immature. The perithecia are densely clustered, and while there is no stroma, there is a distinct blackish brown subiculum beneath each cluster which extends somewhat beyond the margin of the area occupied by the perithecia. The dimensions of the asci



EXPLANATION OF FIGURES

Figures 1-5 drawn with aid of camera lucida and reproduced at magnifications indicated.

1. *Letendracea luteola*, a, tip of young ascus showing toruloid lumen; b, tip of alder ascus, with spores delimited but still surrounded by protoplasm of lumen; c, nearly mature spore, still in ascus; d, mature spore as discharged. All  $\times 1000$ .
2. *Pisolithus tinctorius*. Rudimentary capillitium, partly moniliform; note clamp connection on thread at right.  $\times 460$ .
3. *Ascotremella faginea*. Tips of three paraphyses, showing septation and branching.  $\times 1000$ .
- 4-5. *Platyglöca vestita*. 4. 3-celled basidium at left, basidiospore (immature?) in center, and large basidiospore, at right, germinating by repetition.  $\times 1000$ . 5. Hymenial bodies regarded as gloeocystidia.  $\times 460$ .
6. *Mycotypha microspora*. Cylindrical heads, bearing conidia, the one in center with conidia partly fallen.  $\times 110$ .
7. *Calodon amicum*. Lateral view above, top view below.  $\times \frac{2}{3}$ .
8. *Hydnum Underwoodii*. Above, partly lateral view of section, showing whitish flesh and extremely small spines; below, surface of pileus showing characteristic scales.  $\times \frac{2}{3}$ .
9. *Rhopalogaster transversiarum*,  $\times \frac{2}{3}$ .



are notably larger than those given for the type collection, 95-125 x 6-7  $\mu$ , including the stalk, as compared with 75 x 5  $\mu$ , but since the spores are substantially the same size or a trifle larger, and since spores 5  $\mu$  in width would imply asci distinctly thicker, these differences cannot be significant.

In the young ascus, the wall is relatively thick and apparently gelatinous, since it does not take a phloxine stain, while the cylindrical lumen stains deeply. The lumen soon becomes toruloid (Fig. 1a), the ascospores developing in the swellings (Fig. 1b). Some evidence of the lumen remains as a faint connecting cylinder until the spores are apparently mature (Fig. 1c), and after discharge the position of this connection is marked by a paler area in the spore wall which presumably functions as a germ pore (Fig. 1d). The thick gelatinous ring at the tip of the ascus appears very early and persists until spore discharge, enlarging somewhat and staining less heavily as the ascus matures. In none of the asci seen was there the slightest suggestion that the ascospores ever form more than a single row while in the ascus.

*ASCOTREMELLA FAGINEA* (Peck) Seaver. Fig. 3.

This large but aberrant discomycete seems to be decidedly rare. Seaver (*Mycologia* 22:53. 1930) notes its occurrence in New York and Ontario only. A specimen was collected in Iowa County, near Homestead, in September, 1931, on a very rotten log, of unknown species. Seaver describes the paraphyses as "slender, slightly enlarged above." They are definitely septate and often branched, as shown in the accompanying drawings, the segments swollen and apparently regularly abstricted, suggesting that they may serve as conidia. I am indebted to Miss Edith K. Cash for the determination and for calling attention to the curious conidiophore-like paraphyses.

*PLECTANIA OCCIDENTALIS* (Schw.) Seaver.

According to Seaver (*N. A. Cup-fungi* 193. 1928) this common species reaches a diameter of 1 cm. Several specimens collected in June, 1938, reached 4 cm. in diameter, and apothecia 3-4 cm. in diameter were common.

*BULGARIA RUFA* Schw.

Seaver (1. c. 196) says of this species "attaining a diameter of 2-3 cm." Some specimens collected in June, 1938, reached 6.5 cm. in diameter; apothecia 5-6 cm. in diameter were common.

## PLATYGLOEA VESTITA Bourd. &amp; Galz. Figs 4, 5.

A collection on a decorticated oak branch at Iowa City seems to be the first record of this species outside of France and England. The fungus is very inconspicuous, appearing as a violaceous gray gelatinous bloom forming patches an inch or two in extent on the surface of the wood, and would be very easy to overlook. Bourdot and Galzin (Hymen. France 14. 1927) report it as a winter species; Rea (Trans. Brit. Myc. Soc. 12:229. 1927) says "Jan.-Dec." Both accounts state it is rather thick. The Iowa collection, apparently young, was very thin and was found June 1. There can, however, be little doubt of the determination. Bourdot and Galzin's figure shows the repent basal hyphae, the strongly curved young basidia, the large, elongate spores and the curious projecting toruloid hyphae exactly as they appeared in my material. They suggest that the curved organs described by them as young basidia may in reality be similar to the probasidia of "*Saccogloea*," i.e., the gelatinous species of what is now known as *Helicogloea*. Careful observation shows, however, that this is not the case, the basidia developing directly from these curved bodies, which merely tend to straighten out as they mature (Fig. 4). The toruloid filaments are probably to be regarded as gloeocystidia. Their contents, while not granular, are refractive. They are not infrequently branched (Fig. 5). The spores, when submerged, germinate by the production of a cylindrical hypha. In moist air, however, they consistently germinate by repetition (Fig. 4), this sometimes taking place before they are discharged from the basidium.

## CALODON AMICUM Quél. Fig. 7.

Miller (Mycologia 27:370. 1935) records this species as rare in Iowa. During the summer of 1938 it was extremely common in the vicinity of Iowa City. Our specimens agree exactly with the published descriptions except in the matter of odor. When fresh, they had a slight, but not unpleasant, fungous odor. The descriptions say that, when fresh, the odor is that of fenugreek or pig-pens. I am inclined to doubt whether such a character is constant or that it has any great significance. The spores are hyaline in mass, pure white, without a trace of brown.

## HYDNUM UNDERWOODII (Banker) Coker. Fig. 8.

This species is fully described and illustrated by Coker (Jour. Elisha Mitchell Soc. 34:171. 1919). The brown, tuberculate spores and the firm, tender, pale brown flesh place it in *Hydnum* as de-

limited by Miller (*Mycologia* 25:299. 1933), no species of which has heretofore been reported from Iowa. As Coker points out (1. c. p. 174) the distinctions between this species and *H. Murrillii* (Banker) Coker are not too clear. Beardslee suggests that *H. Underwoodii* may not be distinct from *Sarcodon fennicus* Karst.

A group of four fructifications found near Iowa City in August, 1938, agrees satisfactorily with Coker's description except as to taste, which was not at all bitter. This, like odor, I regard as a somewhat variable character. For the present, I use Coker's name as a satisfactorily precise designation.

#### RHOPALOGASTER TRANSVERSIARUM (Bosc) Johnston. Fig. 9.

This rare and curious gasteromycete, the only species of its genus, has heretofore been reported only from the southeastern United States. Coker and Couch (*Gasteromycetes* 56. 1928) list collections from North and South Carolina, Florida and Alabama. Iowa is far out of its expected range. In August, 1928, Dr. Frank L. Howard collected a group of fructifications at the base of living bur oaks on the shore of a small pond near the east bank of East Okoboji Lake, south of Camp Foster. Unfortunately, the specimens have disappeared, and the only record of the collection is in the form of two photographs of the fresh basidiocarps, one of which is here reproduced, and the notes made at the time. I have deferred reporting the species in the hope that the missing specimens would be found, but it now seems unlikely that they will be located and a record of the species may encourage others to search for it. There can, I think, be no doubt of the correctness of the determination. The basidiocarps had root-like bases, and a tough, persistent, somewhat rosaceous peridium. The spores are liberated by the gelatinization of the gleba. The general appearance is such as to suggest relationship with *Phallogaster*, where Fisher (E. & P. Nat. Pfl. ed. 2. 7a:29. 1933) puts it, rather than with *Secotium*, where it is placed by Coker and Couch.

#### PISOLITHUS TINCTORIUS (Pers.) Coker & Couch. Fig 2.

This widely distributed species seems not to have been previously reported from Iowa. Subsequent to the publication of Kambly and Lee's "Gasteromycetes of Iowa" two collections have appeared amongst the unidentified material left to the University by the late Professor Shimek. One of these was collected by C. L. Smith in Henry County in 1897, the other by Professor Shimek in Winneshiiek County in 1903. Fischer (E. & P. Nat. Pfl. ed. 2. 7a:35.

1933) states that in the Sclerodermataceae the capillitium is lacking or rudimentary (seldom present) and makes no mention of *Pisolithus* as one of the exceptional genera in this respect. Coker and Couch (Gasteromycetes 1. 1928), in their artificial key to the families, place the Sclerodermataceae in the group of families segregated under the key character "elongated threads (capillitium) not present among the spores."

In the Shimek collection, conspicuous brown threads with thickened walls occur in abundance. Some of these are hypha-like, bear clamp connections and are apparently connected with the hyaline, collapsed threads of the chamber walls. Others, more highly modified, are in part or wholly moniloid (Fig. 2). Both occur definitely within the chambers intermingled with the spores.

Examination of specimens from New Jersey, more mature, failed to disclose such threads, but some suggestion of them occurred in a collection from California. There is no evidence that they are of particular significance except insofar as their occurrence in some specimens suggests that the presence or absence of capillitium is without taxonomic value in this group.

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