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NOTES ON IOWA FUNGI — 1926

G. W. MARTIN

I. The status of *Amanita volvata* Pk.

This handsome mushroom was described from New York in 1872 by Peck¹ as *Agaricus* (*Amanita*) *volvatus*. It is not uncommon in the eastern United States, and Murrill² noted that it occurs rarely in the warmer parts of temperate Europe. By most recent writers it is placed in the genus *Amanitopsis*, or its equivalent, *Vaginata*. Thus Kauffman³ lists it as *Amanitopsis volvata* Pk.; Coker⁴ as *Amanitopsis agglutinata* (B. & C.) Sacc.; Murrill⁵ as *Vaginata agglutinata* (B. & C.) Kuntze. On the other hand, J. E. Gilbert⁶ regards it as identical with *Amanita ovoidea* Bull. var. *baccata* Fr. References could be multiplied to show the confusion into which this species has fallen, but those cited will suffice.

This agaric was fairly abundant in the city park of Iowa City during the fall of 1926, growing in sandy loam in deciduous woods, and opportunity was afforded for careful observation of it in several stages. The one striking feature not noted in previous descriptions is the possession of a very definite, although evanescent, annulus. In the younger stages this covers the gills completely, just as in other species of *Amanita*. The veil is ruptured, however, earlier than in other *Amanitas*, most of it remaining attached to the margin of the pileus as tattered shreds, as in *Hypholoma*, but some, and sometimes a considerable part, remaining on the stem as an annulus. In dry weather these remnants disappear by the time the pileus is fully expanded, but in wet weather fully expanded specimens may be gathered in which both the annulus and the marginal shreds are conspicuous. Fig. 1 illustrates such a specimen. The specimen at the right in Murrill's plate (l.c.) also shows these characters, although less distinctly. The species clearly belongs in *Amanita*, as ordinarily understood, where it was originally placed by Peck. The following description is based on fresh material:

¹ 24th Rept. N. Y. State Museum, p. 59.

² *Mycologia* 5:83. Pl. 86. 1913.

³ *Agaricaceae of Mich.*, p. 622. 1918

⁴ *Jour. Elisha Mitchell Soc.* 33:11-13. Pl. 6. 1917.

⁵ *N. A. Flora* 10:66. 1914.

⁶ *Le genre Amanita* Persoon. Lons-le-Saunier, 1918.

Pileus 7-9 cm. broad, convex, then plane, at length conspicuously striate on margin, the striations becoming less evident on drying; white, densely covered with pinkish brown floccose scales. Flesh white, rather thick at center, thin toward margin. Gills remote, moderately close, broad, white, markedly floccose-crenulate. Inner veil conspicuous in young stages, floccose-pulverulent, much of it remaining attached to margin of expanded pileus. Annulus scanty, floccose-pulverulent, fugacious. Stem white, with pinkish brown stains at base, cylindrical or somewhat tapering toward the apex above the swollen volvate base, usually 10-12 x 1-1.5 cm., sometimes much shorter. Volva large, firm, upper part free and breaking into large lobes. Spores white in mass, smooth, oval, with a single large guttule, 10-12 x 6-8 μ . Odor and taste none.

In 1849 Berkeley and Curtis⁷ described *Agaricus* (*Amanita*) *agglutinata* from South Carolina in the following terms:

"White, pileus 1-2 inches broad, hemi-spherical, becoming plane, viscid, scaly from the remains of the volva; margin thin, sulcate. Stem $\frac{1}{2}$ -1 $\frac{1}{2}$ inches high, two lines thick, solid, enlarged at the apex; bulbous at the base, furnished with a volva whose margin is free. Ring wanting. Gills broad, ventricose, rounded behind and free. Spores white, elliptic. Resembling some of the dwarf forms of *Ag. vaginatus*, but at once distinguished by its solid stem and decidedly viscid, areolatosquamose pileus."

In this description there is no mention of the brownish patches on the pileus. Lack of this character, together with the characterization of the stem as short, slender, solid and enlarged above, and the comparison with *Amanitopsis vaginata* suggest that Berkeley and Curtis' description apply to a species quite distinct from *A. volvata*. Examination of the type specimen may prove that the two species are identical, as assumed by Murrill, Coker and Gilbert, but it is not easy to regard this as being even strongly suggested by the descriptions. Both Coker and Murrill consider *Agaricus* (*Amanita*) *solcatus* Howe⁸ as an additional synonym. There is nothing to indicate that either has examined Howe's specimens, and to me his description is very far from applying to *A. volvata*. *A. solcata* may, however, be the same as *A. agglutinata*.

II. *Crepidotus cinnabarinus* Pk.

This small, but strikingly beautiful scarlet agaric has been known heretofore only from Michigan and Illinois. It is of interest, there-

⁷ Hooker's Jour. of Bot. 1:97.

⁸ Bull. Torrey Bot. Cl. 5:42, 1874.

fore, to note its occurrence in Dickinson County, where it was found rather abundantly in a grove south of Center Lake, and also in the woods along the Little Sioux River, west of Milford. The two localities are seven miles apart. In both places it grew on basswood, mostly on decaying logs on the ground, but in one instance on the dead limb of a living tree, seven feet above ground. In spite of its small size, the pileus rarely exceeding a centimeter in diameter, its brilliant color makes it a conspicuous object. Kauffman⁹ gives an excellent description of the species, to which nothing need be added save mention of the persistently incurved margin of the pileus. His specimens were collected very late in the season and he was unable to secure a spore print. The faint reddish tinge of the spores as observed under the microscope led him to question whether the species might not be referred to *Claudopus*. Our collections gave prints without difficulty, which proved to be definitely ochraceous. McDougall¹⁰ found this to be true in the case of his Illinois collections. Kauffman found in his specimens numerous one- and two-spored basidia and many abnormal spores. This was probably due to low temperature, as our specimens show only four-spored basidia. I have on several occasions noted an abundance of aberrant basidia on agarics kept in an ice-box for several days while awaiting examination.

III. The spores of *Psilocybe foenicisii* Fr.

This small mushroom is very common in pastures. One of its striking characteristics is its spores, which are usually described, as they are by Kauffman,¹¹ as "slightly tuberculate." Careful examination under an oil immersion lens shows that they are not tuberculate as that term is ordinarily understood, but are covered with flattened scales, Figure 2, suggesting the outer peridium of certain puffballs. Usually there is what appears to be a very thin, transparent, gelatinous coat enclosing the scales. The phrase "appearing slightly roughened," would seem to be more accurate than "tuberculate."

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⁹ Agaricaceae of Mich., p. 520.

¹⁰ Trans. Ill. State Acad. Vol. 15, p. 121.

¹¹ Agaricaceae of Mich., p. 283.



Fig. 1. *Amanita vovata* — about two-thirds natural size.

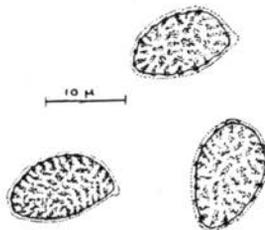


Fig. 2. Spores of *Psilocybe foenicicii*. Zeiss Obj. x, Ocular K 12, reduced one-third in reproduction.