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## Illustrations of the Fleshy Fungi of Iowa I. The Purple-Brown Spored Agarics

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## ILLUSTRATIONS OF THE FLESHY FUNGI OF IOWA

### I. THE PURPLE-BROWN SPORED AGARICS

J. C. GILMAN

One of the functions of the Iowa Academy of Science is to acquaint ourselves with the flora and fauna of our state and to make record of the occurrence of plants or animals which have some peculiarly desirable or undesirable character which makes them noteworthy. We have many papers and scattered references to the fungus flora of the state, but at no time have adequate illustrations of the fleshy-fungi occurring here been published. I propose, therefore, to gather into this series of notes illustrations of the more common fleshy-fungi of Iowa in order that the interested membership may become more familiar with this group of plants. There is little or no research value in this contribution but I hope that the publication will afford the interested worker a criterion for comparison with his own collections and a means of identification of specimens when such are found.

Often the rare or uncommon is recorded while our everyday experience and surroundings remain undescribed. This publication will emphasize the commonplace. It is proposed therefore to publish, with descriptions, illustrations of groups of our more common mushrooms.

The gilled mushrooms (Agaricaceae) are usually divided on the

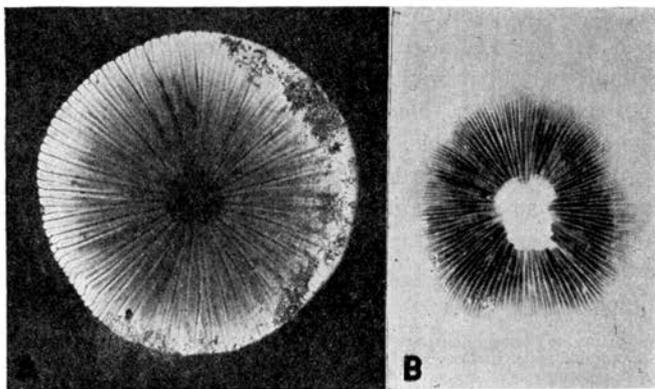


Figure 1. Spore prints:  
A. White spores. B. Purple-brown spores.

basis of spore color into five groups; viz., purple-brown, black, rusty, pink and white.<sup>1</sup> The purple-spored group has been chosen for this note. In this group two genera are very commonly encountered in Iowa, *Psalliota* and *Hypholoma*. They are separated by the fact that in *Psalliota* the veil which extends from the stem to the margin of the cap in young mushrooms remains as a ring (annulus) but in the *Hypholoma* is torn from the stem and is only recognized as having been present by the shreds of veil clinging to the margin of the cap. The gills of *Psalliota* are free from the stem; of *Hypholoma*, attached. Four species of *Psalliota*: *Psalliota campestris*, *Ps. rodmani*, *Ps. abruptibulba*, and *Ps. placomyces* and one species of *Hypholoma*, *H. incertum*, are described and illustrated. The descriptions are taken from Kaufman, Agaricaceae of Michigan.

*Psalliota campestris* Fr. FIELD MUSHROOM

Figure 2.

Cap 4-7 cm. broad (occasionally larger, especially when cultivated), at first flattened hemispherical then convex-expanded or nearly plane, firm, even, *glabrous* or at length minutely floccose silky or delicately fibrillose scaly, dry, *white* (scaly forms are brownish, etc.) the margin extending beyond gills, edge often fringed when fresh by tearing of the partial veil. Flesh thick, white, not changing when bruised. Gills free but not remote, rounded behind, ventricose, not broad, close, almost from the very *first delicate pink, then deep flesh color*, finally purplish-brown to *blackish*, edge even. Stem 5-7 cm. long, thick, usually *sub-equal* or *tapering downward*, rarely sub-bulbous, solid-stuffed, usually rather short and firm, *white*, or whitish *glabrous*. Annulus above and near the middle, edge lacerate, often evanescent in age, derived from the thin, simple, white, partial veil. Spores elliptical 7-9 x 4.5-5.5 microns, purple-brown, *blackish-brown in mass*, smooth. Odor and taste agreeable. Edible.

On ground in lawns, gardens, golf links, roadsides, especially in sheep pastures, sometimes in cultivated fields.

Throughout the state. Less frequent in spring, usually in July-October. Common except locally during some seasons, rare at other times.

<sup>1</sup> Spore prints to determine spore color can be obtained by placing the cap, gills down, on a suitable paper and covering with a cup or bell jar to prevent air currents from disturbing the pattern of the spore deposit. After twenty minutes to several hours, depending on the species used and the condition of the specimen, a print made by the discharge of spores from the gills will be sufficiently clear to determine their color. (Fig. 1).

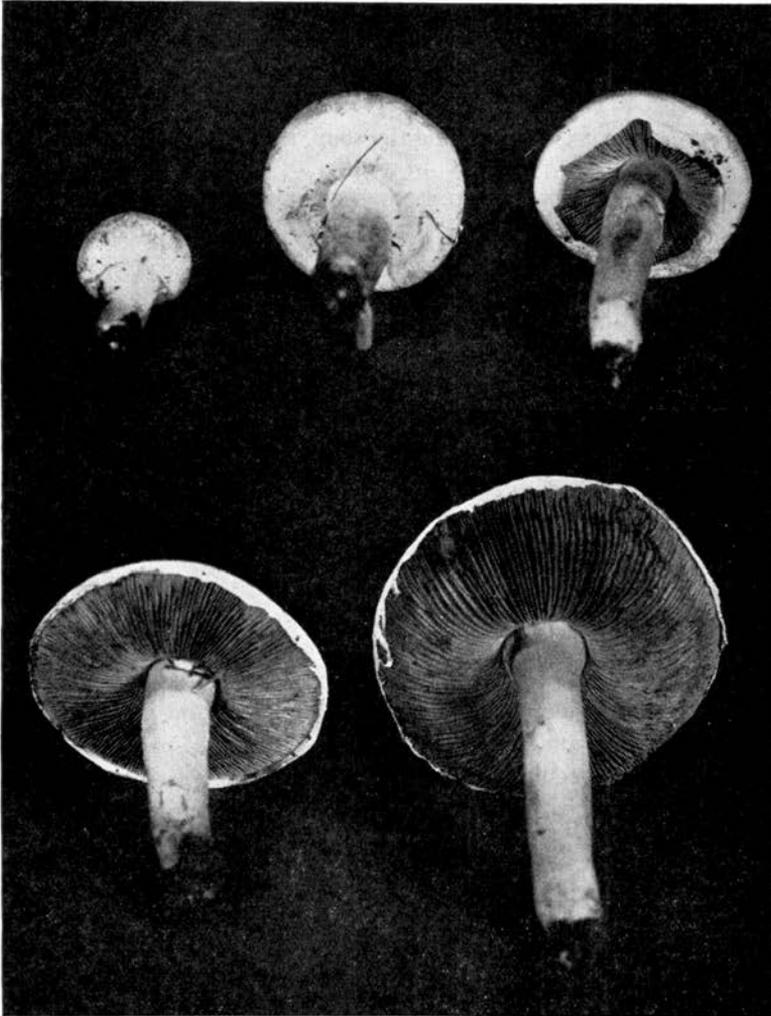
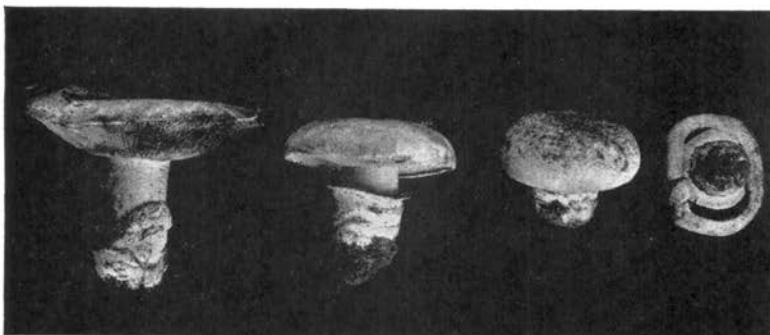


Figure 2. *Psalliota campestris*.

*Psalliota rodmani* Pk. RODMAN'S MUSHROOM

## Figure 3.

Cap 4-10 cm. broad, (usually medium size), at first depressed-hemispherical to broadly-convex, at length sub-expanded to plane, firm, dry, *glabrous*, sub-silky, *white* or whitish, cream color to sub-ochraceous in age, the margin at first incurved and surpassing the gills. Flesh thick, compact, white, not changed by bruising. Gills free but nearly or quite reaching the stem, abruptly rounded behind,

Figure 3. *Psalliota rodmani*.

*narrow*, width about one-third the thickness of pileus, crowded, at first dull pink, then purplish-brown, finally blackish-brown, edge entire. Stem short, 2-5 cm. long, 1-2.5 cm. thick, *stout*, *equal*, *solid*, *glabrous* below, apex slightly scurfy, white within and without, provided at the middle or below with a bandlike, double, white annulus with somewhat spreading edges, sometimes narrow and merely grooved, or somewhat lacerated. Spore minute, 5-6.5 x 4-4.5 microns, broadly elliptical or oval, smooth, purplish-brown, blackish-brown in mass. Odor and taste agreeable. Edible.

Solitary or gregarious on the ground especially along city pavements. Throughout the state, not infrequent.

*Psalliota abruptibulba* Pk.

## Figure 4.

Cap 7-15 cm. broad, convex then expanded-plane, brittle, dry, *glabrous* or covered with white, appressed silky fibrils, sometimes obscurely appressed-scaly, *white* or *creamy-white*, often with dingy yellowish stains on disk, silky shining. Flesh moderately thick, *turning yellowish when bruised*, especially under the cuticle. Gills



Figure 4. *Psalliota abruptibulba*.

free, *remote*, crowded, *narrow*, *soon pink*, then dark brown, edge entire. Stem 8-15 cm. long, 8-15 mm. thick, cylindrical or tapering upward from a small, *subabrupt bulb*, relatively slender at times, creamy-white, yellowish when bruised, stuffed then hollow, subglabrous. Annulus broad, *double*, smooth above, cracking below into thick, sometimes evanescent, yellowish patches. Spores 5-6 x 3-4 microns, elliptical, smooth, purple-brown. Odor and taste agreeable. Edible.

Scattered or sub-caespitose on the ground among fallen leaves in frondose or mixed woods. Throughout the state. July-October. Fairly common.

*Psalliota placomyces* Pk.

Figure 5.

Cap 5-12 cm. broad, at first broadly ovate, convex-expanded, finally *quite plane*, sometimes subumbonate, not striate, *squamulose*, whitish, except where *dotted* with the brown scales which are more dense toward the center, forming a blackish-brown disk, in age the

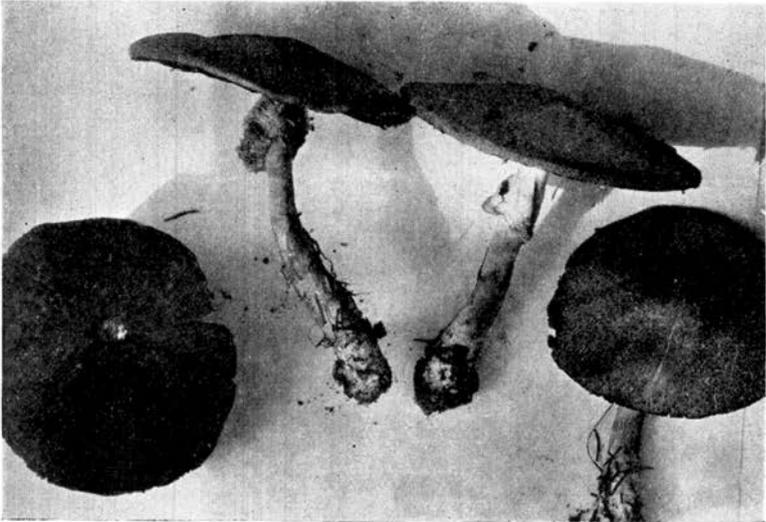


Figure 5. *Psalliota placomyces*.

surface may be entirely brown. Flesh white or tinged yellowish under the cuticle, *rather thin* except on disk. Gills free, crowded, thin, white at first, *soon pink*, then blackish brown, edge entire. Stem rather long, 7-12 cm., tapering upward or *clavate-bulbous*, 4-8 mm. thick, stuffed then hollow, whitish, the bulb sometimes

yellowish stained, glabrous. Annulus large, *superior*, *double*, the under layer cracking radially and leaving patches, finally darkened by the spores. Spores 5-6 x 3.5-4 microns, elliptical-oval, nucleate, smooth, purplish-brown, blackish-brown in mass. Odor not marked. Edible.

Solitary or scattered, sometimes in rings, on ground in frondose, hemlock or mixed woods, rarely on lawns. Ames. July-September. Infrequent.

*Hypholoma incertum* Pk.

Figure 6.

Cap 3-7 cm. broad, *fragile*, at first oval, obtuse, then broadly campanulate to expanded, at length split radially, hygrophanous, *pale honey-yellowish*, then buff to white as moisture disappears, white flocculent, or at length glabrous, even or slightly wrinkled when dry, the margin at first hung with loose shreds of the veil,

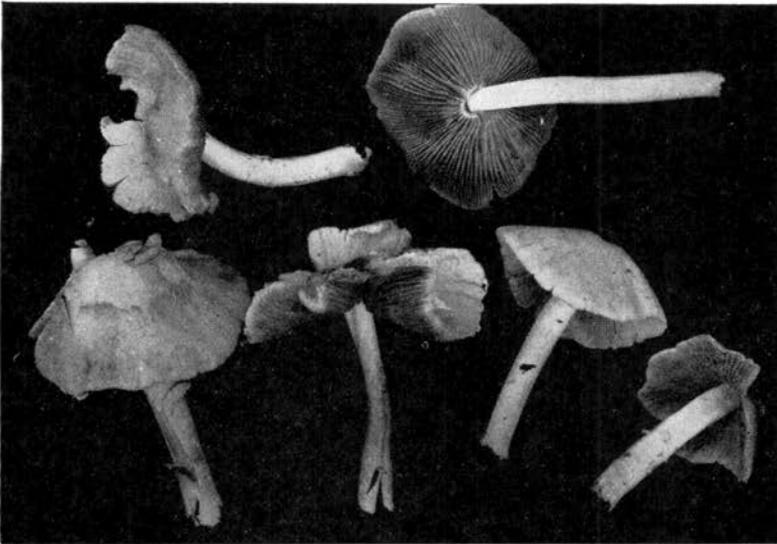


Figure 6. *Hypholoma incertum*.

*in age often violaceous, lilac towards margin.* Flesh thin white. Gills adnate-seceding, narrow almost linear, then, close, *at first white*, then pale dingy lilac or rosy-brown, finally purplish or darker, edge minutely white-fimbriate. Stem 3-8 cm. long, 3-6 mm. thick, rather slender, equal, hollow, subrigid, easily splitting lengthwise, even, *white* innately silky, flocculose or mealy above. Spores

7-8 x 4 microns, elliptic-oblong, obtuse, smooth, purple-brown in mass. Cystidia none on sides of gills. Sterile cells sac-shaped, i.e., inflated above, obtuse 30-40 x 12-15 microns. Odor and taste agreeable. Edible.

Densely gregarious, sometimes scattered, among grass on lawns, roadsides, fields or rarely in woods among sticks and debris; nearly always around old stumps or the buried remains of stumps, roots or decayed wood. Throughout the state. May to September. Very common during rainy seasons.

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