

THE TAXONOMY, ECOLOGY, AND DISTRIBUTION OF MARASMIUS (AGARICALES, TRICHOLOMATACEAE) IN ILLINOIS

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ABSTRACT

The genus *Marasmius* is described as it occurs in Illinois. A key to treated taxa is provided along with references to modern descriptions, habit and habitat, fruiting periods, county distributions, and diagnostic characters. Nineteen species of *Marasmius* are reported as occurring in Illinois. Of these, *Marasmius felix* and *M. strictipes* are reported as new Illinois state records. A macro- and micromorphological description is provided for the previously little known species *M. felix*. Numerous new county records are established for eight of the taxa. The results of this study indicate that many *Marasmius* species are more abundant in the deciduous forests of Illinois than previously recognized.

INTRODUCTION

Often overlooked by many field biologists and even some agaricologists, members of the genus *Marasmius* represent a significant portion of the central North American deciduous forest mycota. In temperate regions these fungi are primarily saprophytes on dicotyledonous plant debris (Gilliam, 1976), although two species—*Marasmius graminum* (Lib.) Berk., and *Marasmius scorodonium* (Fr.) Fr. are known to be facultative parasites of some grasses (e.g., wheat) and sedges—

(Tehon, 1924a; Young, 1925; and Boewe, 1937). In Illinois, species of *Marasmius* are most abundant during the summer and fall, often occurring in great numbers.

Recent work on the marasmioid fungi of Illinois and adjacent Kentucky and Missouri, conducted by the senior author from 1983 to 1985 indicate a larger marasmioid flora than previously recognized (Doyle, 1985 and 1987). This work summarizes previous scattered reports of Marasmii from Illinois and establish new state and county records. Many species of this genus are relatively well known from other regions and have been adequately described (e.g., Singer, 1958 and 1964; Gilliam, 1975 and 1976; Singer, 1976; and Halling, 1983). Earlier monographic treatments on *Marasmius* in North America include Morgan (1905-1906) and Pennington (1915).

References to modern descriptions are provided for 18 of the 19 Marasmii included in this treatment. Diagnostic morphological and ecological characteristics are presented for all taxa. Lacking adequate published descriptions, *M. felix* is described both macro- and micromorphologically in this report. Taxa in other allied genera (i.e., *Collybia*, *Marasmiellus*, and *Mycena*) previously reported from Illinois as species of *Marasmius* are listed under excluded species. A key for rapid determination of the taxa is also included.

MATERIALS AND METHODS

Macromorphological data were obtained from both fresh and dried material. Descriptive terminology is that of Singer (1975). Color terminology is that of Ridgway (1912, cited as "R") and Maerz and Paul (1950, cited as "M&P").

Micromorphological data were compiled from dried material mounted in concentrated NH_4OH and Melzer's reagent as described by Singer (1942). Observations were made utilizing a Leitz microscope with a 1.3 n.a. oil immersion lens. All collections, unless otherwise noted, are deposited in the Mycological Collections, Southern Illinois University Herbarium, Southern Illinois University at Carbondale, Carbondale, Illinois (SIU). Herbarium designations are those of Holmgren and Keuken (1974). In many cases, voucher collections from previous reports apparently do not exist. County records followed by literature citations indicate collections and records that were not verified by the present authors.

Taxonomic Treatment

Marasmius Fries, Fl. Scan. 339. 1835, nom. cons., emend. Singer, Mycologia 50: 103. 1958.

Basidiomes marasmioid, collybioid, pleurotoid, or mycenoid, generally tough and reviving when moistened; lamellate or nearly so, hymenial cystidia usually present; epicutis hymeniform or composed of diverticulate or sometimes smooth hyphal elements; spore print white or rarely yellowish; spores hyaline, variously shaped, smooth, inamyloid; basidia usually 4-spored; stipe central to eccentric or lacking, often bristle-like or cartilaginous, insititious or with a basal mycelial disc; sterile stipes or black rhizomorphs often present; hyphae generally with clamp connections. Cosmopolitan (although predominantly tropical), primarily saprophytes (some parasites) occurring on both woody and herbaceous plant material. For a more complete delimitation of *Marasmius* see Singer (1975 and 1976) and Gilliam (1976).

Key to the Genus *Marasmius* in Illinois

1. Basidiomes collybioid or pseudo-marasmioid; pileus typically 3 cm or greater in diameter2
1. Basidiomes marasmioid, pileus typically less than 3 cm in diameter6
 2. Occurring in lawns, pastures and meadows, often forming conspicuous fairy rings; hymenial cystidia absent 12. *M. oreades*
 2. Occurring on deciduous or coniferous debris in woods; fairy rings mostly lacking; hymenial cystidia present3
3. Pileus usually less than 4 cm in diameter4
3. Pileus usually larger (up to 11 cm broad)5
 4. Pileus white to yellowish-white5. *M. delectans*
 4. Pileus yellowish-brown to dark brown 4. *M. cohaerens*
5. Pileus yellowish-buff with a reddish disk, often large (up to 11 cm broad) 10. *M. nigrodiscus*
5. Pileus orange-yellow to yellow-buff, typically less than 7 cm broad 18. *M. strictipes*
 6. Lamellae adnate to a free collar7
 6. Lamellae adnate or adnexed directly to the stipe, free collar usually absent10
7. Parasitic on stems and leaves of grasses and sedges; pileus orange 8. *M. graminum*
7. Saprophytic on dicotyledonous or coniferous substrates8
 8. Pileus reddish; stipe with long inamyloid hairs; very rare 11. *M. obneii*
 8. Pileus otherwise; stipe black, long and wiry, glabrous9
9. Stipe thin (less than 0.3 mm thick when fresh); on decaying hardwood leaves (especially *Quercus*) 3. *M. capillaris*
9. Stipe thicker (greater than 0.3 mm thick; on decaying dicotyledonous wood 15. *M. rotula*
 10. Mature pileus typically less than 7.5 mm broad11
 10. Mature pileus typically greater than 10 mm broad13
11. Pileus brown, plane in age; occurring on decaying *Quercus* leaves or conifer debris 1. *M. androsaceous*
11. Pileus and substrate otherwise12
 12. Occurring on dead *Platanus* petioles and primary veins; pileus white to pinkish-buff in age 6. *M. felix*
 12. Occurring on dead *Fraxinus*, *Ulmus*, *Pyrus*, or *Populus* leaves; pileus brownish 9. *M. minutus*
13. Pileus bright orange, sulcate-plicate; in troops on hardwood debris 17. *M. siccus*
13. Pileus brownish, yellowish, pink, or deep orange (if orange, pileus not sulcate-plicate)14
 14. Pileus pinkish, sulcate-plicate; solitary on hardwood debris 13. *M. pulcherripes*
 14. Pileus not pinkish and not sulcate-plicate; usually not solitary 15
15. Pileus brownish yellow; stipe long and radicating ... 14. *M. pyrrocephalus*
15. Pileus and stipe otherwise16

16. Odor of crushed pileus garlic or onion-like; on conifer needles, bark of trees, or rarely parasitic on dicots 16. *M. scorodoni*
 16. Odor of crushed pileus not garlic or onion-like; substrate otherwise, never parasitic 17
 17. Pileus orange, red, or reddish-orange; stipe and disk often with purplish tint; spores narrow (4 μ m or less wide) 2. *M. bellipes*
 17. Pileus orange or yellowish-brown; stipe and disk without purplish tint; spores wider than 4 μ m) 18
 18. Pileus deep orange to reddish-orange; lamellae close; basal mycelium abundant 19. *M. sullivantii*
 18. Pileus yellowish-brown; lamellae distant; basal mycelium absent 7. *M. glabellus*

Taxa

1. *Marasmius androsaceus* (L.) Fr. Epicr. Mycol., p. 385. 1838.

This species has been recently described by Gilliam (1976: 28).

HABIT AND HABITAT: Gregarious on decaying *Quercus* spp. leaves in mixed deciduous forest. July. Not common. Also see discussion below.

COUNTY DISTRIBUTION: Jackson Co.: (Bankson and Gilman, 1963); Doyle X-7-84/2.

DISCUSSION: The brownish pileus and distinctive lamellar diverticulate cells characterize this species. In adjacent regions, and elsewhere, it generally occurs on coniferous leaves, cones and debris. As indicated above, it is also occasionally found on *Quercus* leaves.

2. *Marasmius bellipes* Morg. J. Mycol. 11: 207. 1905.

For a recent description see Gilliam (1976: 96).

HABIT AND HABITAT: Gregarious on old leaves in deciduous woods. June-September (Gilliam, 1976). Rare.

COUNTY DISTRIBUTION: County not recorded (northern Illinois and vicinity): (Routien, 1940).

DISCUSSION: This species is similar in many respects to *M. glabellus*, *M. borealis*, and *M. pulcherripes*. It is characterized by a convex-depressed, distantly striate pileus with a purplish disk; broad, distant lamellae, and a purplish stipe. For additional differences between these taxa see Gilliam (1976).

3. *Marasmius capillaris* Morg. J. Cincinnati Soc. Nat. Hist. 6: 194. 1883.

For a recent description see Gilliam (1976: 117).

HABIT AND HABITAT: Scattered to gregarious on decaying hardwood leaves, especially *Quercus* spp. in mesic woods. June-October. Common.

COUNTY DISTRIBUTION: Cook Co.: (Routien, 1936). Jackson Co.: Doyle X-7-84/3; Gormy 1. Ogle Co.: Doyle IX-29-84/4. Williamson Co.: Doyle VI-10-85/2, X-13-84/1, X-28-84/4, and VI-10-85/2. County not recorded (northern Illinois and vicinity): (Routien, 1940).

DISCUSSION: This species is easily recognized by its occurrence on decaying hardwood leaves, the presence of a long, thin and wiry black stipe surrounded by an apical collar, and a white to buff pileus which is usually umbilicate. It is especially common in the oak forests of the southern Illinois region during the summer and early fall.

4. *Marasmius cohaerens* (Pers.) Cke. & Quel.

Clavis Hymen. p. 153. 1878, var. *cohaerens* Gilliam Mycotaxon 4: 58. 1976.

For a description see Gilliam, *l.c.*

HABIT AND HABITAT: Gregarious on forest litter in deciduous and coniferous woods (Gilliam, 1976). July and August (Moffatt, 1909). Apparently not common.

COUNTY DISTRIBUTION: County not recorded (northern Illinois and vicinity); [reported as *Marasmius calopus* Pres.] (Moffatt, 1909).

DISCUSSION: Gilliam (1976) recognized two varieties—*M. cohaerens* var. *cohaerens* and *M. cohaerens* var. *lachnophyllus*. *M. cohaerens* s. lat. is a rather large marasmioid agaric having a brownish pileus up to 4 cm broad with conspicuous hymenial setae.

5. *Marasmius delectans* Morg. J. Mycol. 11: 206. 1905.

For a recent description see Gilliam (1976: 54).

HABIT AND HABITAT: Scattered to gregarious on decaying hardwood leaf litter (especially *Quercus* spp.) in mesic woods. June-November. Common.

COUNTY DISTRIBUTION: Jackson Co.: Doyle X-22-84/0, X-13-84/5, X-13-84/13, and IX-26-84/1; Sundberg 2475, and 4368. McDonough Co.: (Johnson, 1952). McLean Co.: (Cooke, 1969). Ogle Co.: Doyle IX-29-84/0. Union Co.: West s.n. (22 July, 1970). County not recorded: (Routien, 1940; Gilliam, 1976).

DISCUSSION: This taxon is characterized by a yellowish-white pileus up to 4 cm broad and abundant, conspicuous hymenial setae. It is quite common in mixed, mesic, deciduous forest during the late summer and early fall in the southern Illinois region.

6. *Marasmius felix* Morg. J. Mycol. 12: 2. 1906.

PILEUS 1.5-7 mm broad, semihemispheric at first, becoming convex, later broadly convex to nearly plane, occasionally upturned in age, centrally depressed in some specimens (forming a shallow umbo), sulcate or nearly so upon drying, the sulcae extending from the disk to the margin, rugulose, especially in dried specimens; margin entire, minutely crenate to eroded in age. **CUTICLE** dry, glabrous (atomate at 10X); concolorous or darkest at disk, white at first becoming light "orange white" (M&P 5A2), "greyish orange" (M&P 6B5-6B4), "salmon-buff", "light ochraceous-salmon", or "pinkish cinnamon" (R) upon drying. **TRAMA** thin (less than 1 mm thick), translucent white. **ODOR** mild (earthy) to absent. **TASTE** absent. **LAMELLAE** adnate to adnexed; pseudocollarium present, adnate to stipe (formed by both lamellae and pileus trama), lamellae broad, off-white to "light salmon buff" (R), margin entire; lamellulae present, some intervenose. **STIPE** 1-8.5 cm long, thin (less than 0.25 mm thick), equal, straight to wiry, occasionally

branched, cartilaginous, hollow, opaque, sparsely hairy to nearly glabrous at apex, black to blackish-brown at base, fading lighter upwards to "chaetura drab" (R), "taupe brown" (R), apex pale "ochraceous-salmon" (R), to off-white, inserted, insititious. STERILE STIPES, BASAL MYCELIUM, and RHIZOMORPHS absent.

SPORES white in mass, 8-8.5 X 2.8-3.5 μm , fusoid, smooth, hyaline, inamyloid. BASIDIA 22-30 X 4-9 μm , clavate, 4-spored, thin-walled, hyaline, with basal clamp. BASIDIOLES fusoid with narrow apices. HYMENIAL CYSTIDIA 34-45 X 4-10 μm , ampullaceous, thin-walled, hyaline. TRAMAL HYPHAE hyaline, with clamp connections, inamyloid. For a description of the epicutis and stipe surface see Gilliam (1976).

HABIT AND HABITAT: Gregarious on decaying *Platanus occidentalis* petioles and major veins in mesic woods. July-December. Common.

COUNTY DISTRIBUTION: Jackson Co.: Doyle XII-4-84/1. Johnson Co.: Doyle XII-2-84/4. Randolph Co.: Doyle XII-14-84/1. Union Co.: Doyle XII-17-84/8. Williamson Co.: Doyle X-31-84/1.

DISCUSSION: This taxon is easily recognized by its occurrence on *Platanus* petioles, small size, and whitish pileus becoming pinkish in age. Previously considered very rare, this species is extremely common on the previous year's *Platanus* leaf litter, often buried by newly dropped leaves. Due to the insulative quality of the newly fallen leaves above, the fungus is able to produce basidiocarps during periods of sub-zero C. weather. It is notable that *M. felix* is pigmented in age, an anomalous character for section *Epiphylli*, of which it is a member. Additionally, some specimens have distinctly branched stipes, a character rarely observed in extratropical agarics.

7. *Marasmius glabellus* Pk. Bull. Buffalo Soc. Nat. Sci. 1:58. 1873 (1874).

For a description see Gilliam (1976: 91).

HABIT AND HABITAT: Gregarious on decaying leaves in deciduous woods (Gilliam, 1976). August-September (Graham, 1944). Not common (Graham, 1944).

COUNTY DISTRIBUTION: Lake Co.: (Routien, 1936). McLean Co.: (Cooke, 1969). County not reported: (Routien, 1940; Graham, 1944).

DISCUSSION: This taxon is characterized by its yellowish-brown pileus up to 1.5 cm broad, distantly spaced lamellae, and conspicuous shallow sulcae.

8. *Marasmius graminum* (Lib.) Berk. & Br. Outl. Brit. Fungol. 222. 1865, var. *graminum* Sing. Flora Neotropica Monog. 17: 152. 1976.

For a description see Singer, *l.c.* and Gilliam (1976: 112).

HABIT AND HABITAT: Scattered to gregarious on live and dying stems and leaves of grasses, and occasionally sedges. June-September. Not common.

COUNTY DISTRIBUTION: Madison Co.: [reported as *Marasmius tritici* Young] (Young, 1925). Alexander, Edgar, Knox, and Wabash Counties: (Boewe, 1937). Madison Co.: (Gilliam, 1976). Lake Co.: Singer N 4670 (F) (Singer, 1976). Williamson Co.: Doyle VI-13-85/1 and VI-18-85/1. County not recorded: (Roberts, 1943).

DISCUSSION: This species is characterized by its small size, orange pileus, and occurrence on dead and dying stems of grasses. *Marasmius graminum* s. lat. has been reported by various authors (e.g., Young, 1925; Boewe, 1937) as a parasite of some cereal grains (e.g., wheat) in Illinois.

9. *Marasmius minutus* Pk. Annual Rep. New York State Mus. 27: 97. 1873 (1875).

For a recent description see Gilliam (1976: 108).

HABIT AND HABITAT: Gregarious on decaying *Fraxinus*, *Ulmus*, *Pyrus*, or *Populus* leaves and twigs (Gilliam, 1976).

COUNTY DISTRIBUTION: Clay and Marion Counties: [reported as *Marasmius pyrinus* Ellis] (Boewe, 1937).

DISCUSSION: This species superficially resembles *M. graminum*, but differs by not possessing a free collar and occurs primarily on *Fraxinus* leaves. (*Marasmius minutus* is also known occasionally to parasitize living leaves of *Pyrus*) (Boewe, 1937).

10. *Marasmius nigrodiscus* (Pk.) Halling. Brittonia 35: 323. 1983.

For a description see Halling, *l.c.*

HABIT AND HABITAT: Solitary to gregarious, or caespitose on decaying forest litter in deciduous and coniferous woods, and occasionally lawns (Halling, 1983). Fruiting period not known.

COUNTY DISTRIBUTION: Union Co.: Halling 3401 (FH) (Halling, 1983).

DISCUSSION: This taxon is characterized by its relatively large (up to 11 cm broad) yellowish-buff pileus and reddish-brown disk, conspicuous hymenial cystidia, and caulocystidia (Halling, 1983).

11. *Marasmius olneii* Berk. & Curt. Ann. Mag. Nat. Hist. III, 4: 294. 1859.

For descriptions see Gilliam (1976: 116), Morgan (1905: 235), and Pennington (1915: 280).

HABIT AND HABITAT: Gregarious on hardwood twigs in beech-maple woods. September. Rare (Graham, 1944).

COUNTY DISTRIBUTION: McDonough Co.: (Johnson, 1952). County not recorded: (Graham, 1944).

DISCUSSION: This apparently is a small reddish-colored species possessing a free apical collar. This taxon is unfortunately poorly known (Gilliam, 1976). It has been reported from Illinois by Johnson (1952) and Graham (1944) as *M. olneyi* Berk. & Curt.

12. *Marasmius oreades* (Bolt: Fr.) Fr. Epier. Mycol., p. 375. 1838.

For a recent description see Gilliam (1976: 43).

HABIT AND HABITAT: Scattered to gregarious in lawns, pastures, and meadows. August-October. Common.

COUNTY DISTRIBUTION: Cook Co.: (Graham, 1927). Jackson Co.: Doyle X-26-

84/1. Monroe Co.: Jacobitz *s.n.* (*n.d.*). Union Co.: Sundberg 3011. Woodford Co.: Sundberg 3018. County not recorded (northern Illinois and vicinity): (Moffatt, 1909; Graham, 1933; Eifert, 1952).

DISCUSSION: This species is easily distinguished by its occurrence on lawns, moderately large yellowish-tan pileus (up to 4 cm broad), and absence of hymenial cystidia. Often forming conspicuous fairy rings, this species is a popular edible mushroom. *Marasmius oreades* appears to be less common in Illinois in relation to other temperate regions of North America.

13. *Marasmius pulcherripes* Pk. Annual Rep. New York State Mus. 24: 77. 1871.

For a recent description see Gilliam (1976: 99).

HABIT AND HABITAT: Solitary on decaying leaf litter in mesic deciduous woods. August-October. Not common.

COUNTY DISTRIBUTION: Jackson Co.: Burton 63. Williamson Co.: Doyle X-13-84/3.

DISCUSSION: This species is similar in many respects to *M. siccus*, but differs in having a pinkish pileus, a somewhat more fragile stipe, and is generally solitary. For additional comparisons of the two species see Gilliam (1976).

14. *Marasmius pyrrocephalus* Berk. London J. Bot. 6: 316. 1847.

For a recent description see Gilliam (1975: 36).

HABIT AND HABITAT: Scattered to gregarious on decaying *Quercus* leaf litter in mesic, mixed deciduous forests. September-November. Common.

COUNTY DISTRIBUTION: DuPage Co.: [reported as *Marasmius longipes* Peck] (Moffatt, 1909). Jackson Co.: Doyle IX-13-84/6 and IX-13-84/9. Ogle Co.: Doyle IX-29-84/17, IX-29-84/0, and IX-29-84/M. Williamson Co.: Doyle XI-24-84/3.

DISCUSSION: This species is characterized by a typically small (usually around 1 cm broad) broadly convex to nearly plane brownish-yellow pileus; a tough, radicating, long and relatively thin pubescent stipe (up to 10 cm long) which is often brownish below and yellowish above; and lacking lamellar diverticulate cells.

15. *Marasmius rotula* (Scop.: Fr.) Fr. Epicr. Mycol., p. 385. 1838.

For a recent description see Gilliam (1976: 122).

HABIT AND HABITAT: Gregarious on rotting dicotyledonous wood in mesic deciduous woods. June-November. Common.

COUNTY DISTRIBUTION: Cook Co.: (Routien, 1936). Jackson Co.: (Bankson and Gilman, 1963); Burton 164; Connor 5; Nickles *s.n.* (6-1-74); Sundberg 2208 and 2295; West 404. Johnson Co.: Sundberg 3304. McDonough Co.: (Johnson, 1952). Randolph Co.: West 306. Williamson Co.: Doyle VI-10-85/1. County not recorded: (Gilliam, 1976); (northern Illinois and vicinity): (Moffatt, 1909; Graham, 1933).

DISCUSSION: *Marasmius rotula* is quite similar both macro- and micromorphologically to *M. capillaris*. *Marasmius rotula* generally occurs on rotting wood, and has a somewhat shorter and thicker stipe. For additional comparisons see Gilliam (1976).

16. *Marasmius scorodonius* (Fr.) Fr. Epicr. Mycol., p. 379. 1838.

For a recent description see Gilliam (1975: 29).

HABIT AND HABITAT: Scattered to gregarious on conifer needles in woods; occasionally parasitic on grasses in woods or fields; and the bark of living trees. June-September (Graham, 1944). Not common.

COUNTY DISTRIBUTION: Cook Co.: Shaffer 787 (MICH) (Gilliam, 1975). Jackson Co.: (French, 1907). Madison Co.: (Tehon, 1924b). County not recorded (northern Illinois and vicinity): (Routien, 1940).

DISCUSSION: This species is characterized by having a distinct garlic odor when the pileus is crushed and spores 6-10 μ m long. *Marasmius scorodonius* has an exceptionally wide range of substrates (Gilliam, 1975). This species has been reported as a parasite of some grasses, including wheat (Tehon, 1924b).

17. *Marasmius siccus* (Schw.) Fr. Epicr. Mycol., p. 382. 1838.

For a recent description see Gilliam (1976: 85).

HABIT AND HABITAT: Scattered to gregarious (often in troops) on decaying leaf litter in mesic deciduous woods. June-October. Common.

COUNTY DISTRIBUTION: Cook Co.: (Moffatt, 1909; Routien, 1936). Jackson Co.: Doyle VIII-12-84/1 and IX-13-84/2; Jacobs 23; Heil 55 and 61; Smith 10. Lake Co.: (Routien, 1936). McDonough Co.: (Johnson, 1952). McLean Co.: (Cooke, 1969). Randolph Co.: West 303. Williamson Co.: Doyle X-13-84/9 and X-7-84/1. County not recorded: (Gilliam, 1976); (northern Illinois and vicinity): (Graham, 1933).

DISCUSSION: This species is easily recognized by its bright orange, sulcate-plicate campanulate pileus. *Marasmius siccus* often occurs in great numbers on the forest floor after moderate to heavy rains. It is one of the most common and conspicuous members of Illinois deciduous forest agaric mycota.

18. *Marasmius strictipes* (Pk.) Sing. Ann. Mycol. 41: 130. 1943.

For a description see Gilliam (1976: 50).

HABIT AND HABITAT: Scattered to gregarious on decaying leaf litter in mesic deciduous woods. September. Not common.

COUNTY DISTRIBUTION: Jackson Co.: Sundberg IX-25-84/1.

DISCUSSION: This species is characterized by an orange-yellow to yellowish-buff pileus up to 6.5 cm broad, closely spaced lamellae, and abundant caulocystidia.

19. *Marasmius sullivanii* Mont. Syll. Crypt., p. 143. 1856.

For a recent description see Gilliam (1976: 70).

HABIT AND HABITAT: Gregarious on hardwood leaf litter in mesic woods. June-Sept. Not common.

COUNTY DISTRIBUTION: Jackson Co.: Orr s.n. (5-12-74). County not recorded: Shaffer 842 (MICH) (Gilliam, 1976).

DISCUSSION: This species is distinguished by a deep orange to brownish plano-convex pileus up to 3 cm broad. Apparently, Morgan (1905) interpreted *M. sullivanii* to be a saffron red agaric, growing among mosses. For synonymy, and a discussion of *M. sullivanii*, see Gilliam (1976).

Excluded Taxa

1. *Marasmius dichrous* Berk. & Curt.
Reported from northern Illinois and vicinity (Moffatt, 1909).
= *Collybia dichrous* (Berk. & Curt.) Gilliam
2. *Marasmius erythropus* (Pers.: Fr.) Fr.
Reported by Graham (1944), County not reported.
= *Collybia erythropus* (Pers.: Fr.) Lange
3. *Marasmius foetidus* Sow.: Fr.
Reported from northern Illinois and vicinity (Roberts, 1943).
= *Micromphale foetidum* (Sow.: Fr.) Sing.
4. *Marasmius magnisporus* Murr.
Reported from northern Illinois and vicinity (Routien, 1940), and from Cook Co. (Routien, 1936).
= *Marasmiellus candidus* (Fr.) Sing.
5. *Marasmius nigripes* Schw.
Reported from northern Illinois and vicinity (Moffatt, 1909).
= *Marasmiellus nigripes* (Schw.) Sing.
6. *Marasmius nucicola* McDougall
Reported from Champaign Co. (McDougall, 1924).
= *Mycena luteopallens* (Pk.) Sacc.
7. *Marasmius ramealis* Fr.
Reported from northern Illinois and vicinity (Routien, 1940), and from Cook Co. (Routien, 1936).
= *Marasmiellus ramealis* (Fr.) Sing.
8. *Marasmius semihirritipes* Pk.
Reported from Cook Co. (Routien, 1936), McDonough Co. (Johnson, 1952), and from northern Illinois and vicinity (Routien, 1940).
= *Collybia spongiosa* (Berk. & Curt.) Sing.
9. *Marasmius subnudus* (Ell.) Pk.
Reported from Lake Co. (Routien, 1936).
= *Collybia subnuda* (Ell.: Pk.) Gilliam
10. *Marasmius urens* (Fr.) Fr.
Reported from northern Illinois and vicinity (Moffatt, 1909).
= *Collybia subnuda* (Ell.: Pk.) Gilliam

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