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New Species of Fungi.

BY CHAS H. PECK.

AMANITA CANDIDA.

Pileus thin, broadly convex or nearly plane, verrucose with numerous small erect angular or pyramidal easily separable warts, often becoming smooth with age, white, even on the margin, flesh white; lamellae rather narrow, close, reaching to the stem, white; stem solid, bulbous, floccose-squamose, white, the annulus attached to the top of the stem, becoming pendent and often disappearing with age, floccose-squamose on the lower surface, striate on the upper, the bulb rather large, ovate, squamose, not margined, tapering above into the stem and rounded or merely abruptly pointed below; spores elliptical, .0004 to .0005 in. long, .0003 in. broad. Pileus 3 to 6 in. broad; stem 2.5 to 5 in. long, 5 to 8 lines thick, the bulb 1 to 1.5 in. thick in the dried specimens.

Woods. Auburn, Alabama. October. L. M. Underwood and F. S. Earle.

This is a fine large species related to *A. solitaria*, but differing from it in the character of its bulb and of its annulus. The bulb is not marginate nor imbricately squamose. Its scales are small and numerous. Nor is it clearly radicating, though sometimes it has a slight abrupt point or mycelioid-agglomerated mass of soil at its base. The veil or annulus is large and well developed, but it is apt to fall away and disappear with age. Its attachment at the very top of the stem brings it closely in contact with the lamellae of the young plant and the striations of its upper surface appear to be due to the pressure of the edges of these upon it. It separates readily from the margin of the pileus and is not

lacerated. In the mature plant the warts have generally disappeared from the pileus and sometimes its margin is curved upward.

AMANITA ABRUPTA.

Pileus thin, broadly convex or nearly plane, verrucose with small angular or pyramidal erect somewhat evanescent warts, white, slightly striate on the margin, flesh white; lamellae moderately close, reaching the stem and sometimes terminating in slightly decurrent lines upon it, white; stem slender, glabrous, solid, bulbous, white, the bulb abrupt, subglobose, often coated below by the white persistent mycelium, the annulus membranous, persistent; spores broadly elliptical or subglobose, .0003-.0004 in. long, .00025-.0003 broad. Pileus 2-4 in. broad; stem 2.5-4 in. long, 3-4 lines thick.

Woods. Auburn, Alabama. July. Underwood.

The chief distinguishing mark of this species is its abrupt nearly globose bulbous base of the stem. This is somewhat flattened above and is sometimes longitudinally split on the sides. The small warts of the pileus are easily separable, and in mature specimens they have often wholly or partly disappeared. The remains of the volva are not present on the bulb in mature dried specimens, which indicates that the species should be placed in the same group with *A. rubescens*, *A. spissa*, etc. The latter species has the bulb of the stem similar to that of our plant, but the color of the pileus and other characters easily separate it.

AMANITA PRAIRIICOLA.

Pileus thin, convex, slightly verrucose, white, more or less tinged with yellow, even on the margin, flesh white; lamellae rather broad, subdistant, reaching the stem, white; stem equal or slightly tapering upward, somewhat squamose toward the base, white or whitish, the annulus persistent; spores large, broadly elliptical, .0005-.00055 in. long, .0003-.00035 broad. Pileus 1.5-3 in. broad; stem 2-2.5 in. long, 2-4 lines thick.

Bare ground on open prairies. Kansas. September. E. Bartholomew.

This species belongs to the same tribe as the preceding one. The only evidence of the presence of a volva shown by the dried specimens is found in a few inconspicuous, but separable warts on the pileus. There is no well marked bulb to the stem and no evident remains of a volva at its base.

LEPIOTA SUBLILACEA.

Pileus thin, convex, obtuse or umbonate, dry, floccose-squamulose, brownish tinged with lilac, flesh white; lamellae rather broad, free, subdistant, whitish; stem short, solid, colored like the pileus, but paler at the top, the annulus slight, evanescent; spores elliptical, .0004 in. long, .0002 broad, commonly containing a single large shining nucleus. Pileus 6-12 lines broad; stem 6-12 lines long, 1-2 lines thick.

Bare ground in pastures. Kansas. September. Bartholomew.

This plant appears to have some points of resemblance to *L. lilacea*, from which it may be separated by its solid stem and larger spores.

TRICHOLOMA ACRE.

Pileus fleshy, but rather thin, broadly convex, nearly plane or even slightly depressed in the center, often wavy on the margin, dry, innately fibrillose, whitish or pale gray, flesh white or whitish, taste acrid; lamellae close, adnexed, subventricose, white; stem equal or slightly tapering downward, short, slightly fibrillose, stuffed or hollow, white; spores subglobose, .0002-.00025 in. long, .00016-.0002 broad. Pileus 1.5-2.5 in. broad; stem 1-2 in. long, 3-5 lines thick.

Thin woods of deciduous trees. Worcester, Massachusetts. October. Dr. G. E. Francis.

The species is closely related to the European *T. impolitum*, from which it appears to differ in its paler pileus not becoming rimose-squamose, and in its stem, which is not at all squamose and which is stuffed or hollow rather than solid. Besides, its taste is only hot or peppery and not at all salty as in that species.

TRICHOLOMA PALLIDUM.

Pileus fleshy on the disk, thin towards the margin, convex or nearly plane, obtuse, glabrous, sometimes obscurely spotted on the disk with thin appressed brownish squamules, somewhat shining, whitish tinged with yellow or brownish-yellow, flesh white, sometimes slowly assuming a faint pinkish hue where cut or broken, taste mild; lamellae broad, subdistant, rounded behind or adnexed, often eroded on the edge, white; stem equal or slightly thickened at the base, glabrous, white; spores elliptical, .0002-.00025 in. long, .00016 broad. Pileus 1-2.5 in. broad; stem 1-2 in. long, 3-6 lines thick.

Thin wood of deciduous trees. Worcester, Massachusetts. October. Francis.

ARMILLARIA APPENDICULATA.

Pileus broadly convex, glabrous, whitish, often tinged with ferruginous or brownish-ferruginous on the disk, flesh white or whitish; lamellae close, rounded behind, whitish; stem equal or slightly tapering upward, solid, bulbous, whitish, the veil either membranous or webby, white, commonly adhering in fragments to the margin of the pileus; spores subelliptical, .0003 in. long, .0002 broad. Pileus 2-4 in. broad; stem 1.5-3.5 in. long; 5-10 lines thick.

Auburn, Alabama. October. C. F. Baker.

The general appearance of this species is suggestive of *Tricholoma album*, but the presence of a veil separates it from that fungus and places it in the genus *Armillaria*. The veil, however, is often slight lacerated or webby and adherent to the margin of the pileus.

CLITOCYBE TARDA.

Pileus fleshy but rather thin, easily splitting when old, but firm when young and fresh, convex becoming nearly plane or somewhat centrally depressed, sometimes slightly umbonate, glabrous, hygrophanous, brown when moist, grayish or grayish-brown when dry, the margin at first deflexed or incurved, flesh white, inodorous; lamellae subhorizontal, moderately close, rather fragile, adnate or slightly decurrent, often eroded on the edge, at first with a pale violaceous tint, becoming whitish; stem short, equal or tapering downwards, solid, fibrillose, colored like the pileus; spores elliptical, .0003 in. long, .00016 broad. Pileus 1-3 in. broad; stem about 1 in. long, 1-3 lines thick.

Ground in greenhouses. Lynn, Massachusetts. December. Mrs. A. P. Doughty.

The species is referable to the second section of the tribe Orbiformes. The stem, when viewed by the aid of a lens, appears to be longitudinally and interruptedly rimulous from the separation of the fibrils. These are somewhat reticulately connected as in the stem of *C. cyathiformis*. The lamellae easily split transversely, and sometimes separate from the pileus at their inner extremity.

There are two forms. The darker colored one may be taken as the typical form. It is firmer, more regular, and under a lens sometimes appears to be minutely innately fibrillose. The other may be designated as

CLITOCYBE TARDA PALLIDIOR.

Pileus paler, more fragile and irregular, more apt to be cen-

trally depressed, somewhat striate on the margin when dry, sometimes eccentric; lamellae of the young plant with a flesh-colored tint.

The species is separated from *C. diatreta* by its darker and differently colored pileus and by its solid stem.

HYGROPHROUS CUSPIDATUS.

Pileus thin, subcampanulate, glabrous, cuspidate, bright red; lamellae broad, ventricose, yellow; stem slender, equal, glabrous, hollow; spores elliptical, .00045-.0006 in. long, .00025-.0003 broad. Pileus 6-10 lines broad; stem 1-2 in. long, about 1 line thick.

Ottawa, Canada. September. J. Macoun.

This fungus is closely allied to *H. conicus*, of which it might easily be taken to be a variety, but its more slender habit, its strongly cuspidate pileus and its longer and comparatively more narrow spores lead me to separate it. As in that species the plants are apt to turn more or less black in drying.

COLLYBIA LUXURIANS

Pileus thin, convex or subcampanulate, often irregular from its mode of growth, obtuse or umbonate, glabrous, moist, brown; lamellae narrow, close, whitish; stems caespitose, equal, flexuous, hollow, brown, thinly clothed above with a minute grayish pulverulent villosity which is often more dense and tomentose toward the base; spores elliptical, .00025-.0003 in. long, .00016 broad. Pileus 2-4 in. broad; stem 3-4 in. long, 2-3 lines thick.

Under brush heaps. Auburn, Alabama. July. Underwood.

This is a large caespitose and luxuriant appearing species, but as the specimens were not accompanied by notes of the characters of the fresh plant it can only be imperfectly described. The pileus was said to be very moist when fresh and it was probably hygrophanous. In the dried state it is a dull, reddish brown, closely approaching Mars' brown. Its margin is more or less wavy, lobed and striate. The species is apparently related to *C. confluens*, but it is a much larger plant with a darker colored pileus. Its place is probably among the Confertipedes.

OMPHALIA PUBESCENTIPES.

Pileus thin, convex, umbilicate, glabrous, reddish-tawny, sometimes paler on the margin; lamellae moderately close, decurrent, whitish; stem slender, pubescent, tawny with a tawny mycelioid tomentum at the base; spores elliptical, .00025 in. long, .00016 broad. Pileus 2-4 lines broad; stem about 1 in. long, .5 line thick.

Decaying wood and vegetable mold. Alabama. December. Earle.

The downy or pubescent stem is the distinguishing character of this species.

MARASMIUS PLICATULUS.

Pileus submembranous, convex or subcampanulate, glabrous, even when moist, commonly sulcate or striate when dry, dark vinous red inclining to bay brown; lamellae subdistant, narrowed behind, adnexed, whitish; stem slender, hollow, glabrous above, shining, blackish-brown, red at the top, radicating and clothed at the base with a copious dense whitish villosity or tomentum; spores subelliptical, apiculate at one end, somewhat narrowed toward the other, .0004-.0005 in. long, .0002-.00025 broad. Pileus 6-12 lines broad; stem 2.5-5 in. long, about 1 line thick.

Among fallen leaves and other decomposing vegetable matter. Common in Southern California. A. J. McClatchie.

The colors of this plant are very similar to those of *Marasmius pulcherripes*, but it is a much larger plant and differs in the attachment of its lamellae and in the character of the base of the stem. In the dried specimens the stem is striate and the pileus has a velvety appearance, but it is glabrous.

I find that the name *Marasmius badius*, Bull. Torr. Club, 22: 487, 1895, was preoccupied and I would substitute for it MARASMIUS BADICEPS.

FLAMMULA EDULIS.

Pileus fleshy, convex, obtuse, glabrous, moist, brown, grayish-brown or alutaceous-brown, sometimes rimose, flesh whitish; lamellae rather broad, close, decurrent, bright tan color, becoming brownish-ferruginous; stems caespitose, equal, stuffed or hollow, brown; spores subelliptical, .0005 in. long, .0002-.00025 broad. Pileus 2-3 in. broad; stem 2-3 in. long, 3-6 lines thick.

Grassy ground, along pavements, in gutters and by the side of wooden frames of hotbeds. Haddonfield, New Jersey. October. C. McIlvaine.

The collector of this species informs me that the flavor of the fresh plant is slightly bitter, but that this disappears in cooking and the fungus furnishes a very good and tender article of food. Successive crops continued to appear for a month. In the dried specimens the stem is striate.

GALERA ANGUSTICEPS.

Pileus thin, narrowly and irregularly conical or subcylindrical, obtuse acute or abruptly acuminate at the apex, even, glabrous, viscid and dark ochraceous when young and moist, nearly white when old and dry, the margin somewhat incurved and appressed to the stem; lamellae close, narrow, adnate, somewhat white-margined, more or less anastomosing, brownish-ferruginous when mature; stem slender, glabrous, hollow, equal or slightly thickened at the base, whitish or tinged with yellow, shining when dry; spores elliptical, .0004-.0005 in. long, .0003 broad. Pileus 8-15 lines long, 4-6 lines wide; stem 1.5-3 in. long, 1-1.5 lines thick.

Grassy ground in streets and pastures. Pasadena, Los Angeles and Compton, California. McClatchie.

This species is closely allied to *G. lateritia* and *G. semilanceata*, from both of which I have separated it because of its viscid pileus the absence of striations and the darker color of its mature lamellae. The pileus also scarcely expands, so far as shown by the specimens seen, and the notes of the collector say that the margin is "permanently incurved."

GALERA ALBA.

Pileus submembranous, campanulate, very fragile, moist, striate, splitting on the margin, white; lamellae narrow, close, white, becoming brownish-ferruginous; stem fragile, hollow, glabrous, white; spores elliptical, .0005-.0006 in. long, .0003-.0004 broad, commonly containing one to three nuclei. Pileus 8-12 lines broad; stem 1.5-2.5 in. long, 1-2 lines thick.

Rich ground in the shade of weeds. Brookings, South Dakota. Summer. T. A. Williams.

It occurs after rains in warm weather. It is more fragile when fresh than when dried.

GALERA VERSICOLOR.

Pileus thin, fragile, convex or subcampanulate, moist or slightly viscid, glabrous, striate on the margin, whitish pale-yellow or brownish tan color; lamellae close, white or pale yellow, becoming reddish-ferruginous; stem equal, fragile, hollow, slightly mealy or pruinose, often tomentose at the base, white; spores very unequal in size, .0005-.0008 in. long, .0003-.0005 broad, generally containing one to three nuclei. Pileus 1-2.5 in. broad; stem 2-4 in. long, 1-2 lines thick.

Manure and other decaying vegetable matter. Brookings, South Dakota. Spring and early summer. Williams.

The species is remarkable for the variability in the color of the pileus and in the size of the spores. These vary in the same individual. The prevailing color of the pileus is pale yellow.

GALERA FRAGILIS.

Pileus submembranous, very fragile, broadly campanulate, glabrous, dull flesh color; lamellae ascending, adnate, subdistant, dark yellow or subochraceous, becoming ferruginous; stem slender, flexuous, hollow; spores elliptical, .0004 in. long, .0002 broad. Pileus 3-5 lines broad; stem 10-15 lines long, .5 line thick.

Among short grasses in pasture. Kansas. Bartholomew.

A very small and very fragile plant.

PSILOCYBE SABULOSA.

Pileus convex, subumbonate, glabrous, yellow; lamellae broad, subdistant, ventricose, adnate, becoming purplish-brown, whitish on the edge; stem equal, hollow, pallid or straw-color; spores elliptical, .0005-.0006 in. long, .0003 broad. Pileus 8-12 lines broad; stem 1-1.5 in. long, about 1 line thick.

Sandy soil in pastures. Kansas. August. Bartholomew.

The pileus in the dried specimens has a somewhat shining appearance. The umbo in some specimens is quite prominent, in others it is wholly wanting. The species is quite distinct from *P. arenulina*, which is hygrophanous and has smaller spores.

PSILOCYBE OBSCURA.

Pileus thin, convex, hygrophanous, striate, more or less flecked or scurfy with a white floccose tomentum, brown or reddish-brown; lamellae broad, subdistant, adnate, brown, becoming almost black, white flocculent on the edge; stem slender, hollow, a little paler than the pileus, whitish tomentose at the base; spores elliptical, .0004-.0005 in. long, .00025-.0003 broad. Pileus 4-9 lines broad; stem 1-1.5 in. long, about 1 line thick.

Rich leaf mold in woods. Kansas. August. Bartholomew.

BOLETUS FISTULOSUS.

Pileus convex, viscid, glabrous, yellow, the margin at first incurved or involute, flesh yellow; tubes plane or subventricose, medium size, round with thin walls, adnate or sometimes depressed around the stem, yellow; stem rather slender, subequal, viscid, glabrous, hollow, yellow, with a white mycelioid tomentum at the base; spores elliptical, .0005 in. long, .00025 broad. Pileus about 1 in. broad; stem 2-4 in. long, about 3 lines thick.

Grassy woods. Auburn, Alabama. July. Underwood.

A small but pretty species of a yellow color throughout. It is remarkable for its hollow stem, which is suggestive of the specific name. It is referable to the tribe Viscipelles.

BOLETUS FRATERNUS.

Pileus convex, becoming plane or depressed, slightly tomentose, deep red when young, becoming dull red with age, flesh yellow, slowly changing to greenish-blue where wounded; tubes rather long, becoming ventricose, slightly depressed about the stem, their walls sometimes slightly decurrent, the mouths large, angular or irregular, sometimes compound, bright yellow, quickly changing to blue where wounded; stem short, caespitose, often irregular, solid, subtomentose, slightly velvety at the base, pale reddish yellow, paler above and below, yellow within, quickly changing to dark green where wounded; spores .0005 in. long, .00025 broad. Pileus 1-1.5 in. broad; stem 1-1.5 in. long, 3-6 lines thick.

Shaded streets. Auburn, Alabama. July. Underwood.

The species is apparently allied to *R. rubeus*, but is very distinct by its small size, caespitose habit, color of the flesh of the stem and by the peculiar hues assumed where wounded. When the pileus cracks the chinks become yellow as in *B. subtomentosus*. The species belongs to the tribe Subtomentosi.

BOLETUS UNDERWOODII.

Pileus rather thin, convex, becoming nearly plane, slightly velvety, bright brownish-red, becoming paler with age, flesh yellow, changing to greenish-blue where wounded; tubes adnate or slightly decurrent, greenish-yellow, becoming bluish where wounded, their mouths very small, round, cinnabar red, becoming brownish orange; stem equal or slightly tapering upward, somewhat irregular, solid, yellow without and within; spores .0004-.0005 in. long, .0002 broad. Pileus 2-3 in. broad; stem 3-4 in. long, 4-6 lines thick.

Grassy woods. Auburn, Alabama. July. Underwood.

The species is remarkable for its adnate or subdecurrent tubes in which it departs from the character of the tribe to which it belongs according to the colors of the tubes.

BOLETUS PARVUS.

Pileus convex, becoming plane, often slightly umbonate, subtomentose, reddish, flesh yellowish white, slowly changing to

pinkish where wounded; tubes nearly plane, adnate, their mouths rather large, angular, at first bright red, becoming reddish-brown; stem equal or slightly thickened below, red; spores oblong, .0005 in. long, .00016 broad. Pileus 1-2 in. broad; stem 1-2 in. long, 2-3 lines thick.

Grassy woods. Auburn, Alabama. July. Underwood.

This is one of the smallest species of the tribe. It is referable to the tribe Luridi.

BOLETUS FRUSTULOSUS.

Pileus thick, convex or nearly plane, subglabrous, rimosely areolate, white or whitish, flesh whitish; tubes equal to or a little longer than the thickness of the flesh of the pileus, depressed about the stem, whitish, becoming pale brown; stem equal, solid, whitish, reticulated above; spores .0006-.0007 in. long, .0002-.00025 broad. Pileus 3-5 in. broad; stem 1-2 in. long, 6-10 lines thick.

Open ground and clay banks. Ocean Springs, Mississippi and Akron, Alabama. May and June. Underwood.

The deeply cracked surface of the pileus is the most notable feature of this species. This sometimes is seen even in quite young plants. The areolae are quite unequal in size. The deep chinks with sloping sides cause them to appear like frustra of polygonal pyramids. In some specimens the reticulations of the stem extend nearly or quite to its base, and make the place of the species ambiguous between the Calopodes and Edules.

BOLETUS ISABELLINUS.

Pileus convex, firm, minutely tomentose, whitish, becoming darker and smoother with age, flesh isabelline; tubes adnate, minute, sometimes larger near the stem, nearly round, whitish; stem nearly equal, subglabrous, hollow, whitish; spores subelliptical, .0003-.00035 in. long, .0002-.00025 broad. Pileus 2-3 in. broad; stem 1-2 in. long, 4-6 lines thick.

Woods. Ocean Springs, Mississippi. June. Underwood.

The species belongs to the Cariosi.

POLYPORUS BURTII.

Pileus dimidiate, 1-2 in. broad, tough, sessile or effuso-reflexed, minutely tomentose, smoky whitish or pallid, flesh 1-2 lines thick, pallid; pores .5-1 line long, unequal, angular, extending to the margin, smoky black, their dissepiments thin.

Yellow birch, *Betula lutea*. Middleburg, Vermont. December. E. A. Burt.

This fungus is closely allied to *Polyporus adustus*, of which it might easily be considered a mere variety, but from which it differs as *P. fragrans* does from *P. fumosus*. Its unequal angular pores with thin dissepiments and the absence of a sterile margin to the pileus separate it from *P. adustus*. Its colors are nearly the same as in that species.

CRYPTOPHALLUS *gen. nov.*

Receptacle consisting of a stem and pileus bearing the gleba on its external surface but covered by the persistent remains of the upper part of the volva.

A genus of Phalleae differing from *Ithyphallus* simply in having a volva which ruptures in a somewhat circumscissile manner, the upper part of it being carried up and remaining on the pileus and persistently concealing the stratum of spores.

It is with some hesitation that I have given generic value to this plant, it seemed at first so probable that the persistency of the remains of the volva on the pileus was an accidental circumstance. But having received two specimens of the same kind, one collected in Kansas and the other in Canada, the probability of its being a mere accident seemed greatly lessened and I have concluded to recognize the fact in a formal manner. The sporiferous stratum is sandwiched between the surface of the pileus and the continuous covering formed by the remains of the volva. What purpose in nature is subserved by this arrangement is not clear, except that perhaps the spores are less exposed to the rapid and sudden washing of heavy rains and are better reserved for dissemination and dispersion by the agency of insects.

CRYPTOPHALLUS ALBICEPS.

Pileus subcampanulate, about one inch high and nearly as broad, obtuse or rounded at the apex, covered by the whitish remains of the ruptured volva whose surface is minutely tomentose; stem cylindrical, hollow, $2\frac{1}{2}$ -4 in. long, 5-8 lines thick, whitish or pallid, inserted at the base in the cup-like remains of the lower part of the volva; veil none; spores narrowly elliptical, .00016-.0002 in. long, about .0001 broad.

In a cornfield. Kansas. June. Bartholomew. At the base of a stump. Canada. J. Macoun.

The species is similar to *Ithyphallus impudicus*, except in the covering of the pileus.