

AGARICACEAE OF VANCOUVER DISTRICT.

by

Jean Elizabeth Davidson.

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AGARICACEAE OF VANCOUVER DISTRICT.

by

Jean Elizabeth Davidson.

A Thesis submitted for the Degree of  
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in the Department of  
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THE UNIVERSITY OF BRITISH COLUMBIA.

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Plates I to XXIII photographs of mushrooms.  
  "  XXIV to XXXI camera lucida drawings of spores.

## INTRODUCTION.

When this work was begun, it was intended to collect any kind of fleshy fungi (except those of the large and difficult order Pezizales), growing in Vancouver and the immediate vicinity, to identify and classify them, and to record their descriptions. However, when collecting was begun, there proved to be such an abundance of the Agaricaceae that dealing with them alone occupied all the available time. Consequently the subject has been limited, and the title changed from "Fleshy Fungi of Vancouver District" to "Agaricaceae of Vancouver District", with an appendix including some miscellaneous fleshy fungi also found here.

Fortunately, the season from the first of October to the end of March was comparatively mild, and proved to be real mushroom weather. The only snowfall of any importance occurred during the Christmas vacation, so collecting was unhampered. Even after the severest cold of the winter, a walk through the woods resulted in the collection of a few of the more resistant Mycenas.

Nearly all the species were found right on the University campus. There was such an abundance of forms on the campus during the Fall that it was more than one person could do to identify them all, and at the same time record all the data concerning them. Thus Stanley Park, which is an excel-

lent collecting ground, was left untouched until Spring, and undoubtedly there are numbers of species growing there that have not been included here.

In this work 27 genera have been recorded, of which 13 are of the white-spored group, 7 of the ochre-spored group, 4 of the purple-brown spored group, and 3 of the black-spored group. No rosy-spored forms were collected, probably due to the fact that most of them grow during the warmer months. The 27 genera comprised in all 64 species, which, according to their spore color are divided as follows: white, 34 species; ochre, 16 species; purple-brown, 11 species; black, 3 species.

The various species of Mycena proved to be more numerous than those of any other genus, 12 species being described here, although it is definitely known that others occur. The species of Clitocybe came second in number to the Mycenas in the white-spored group. In the ochre-spored group, Cortinarius outnumbered the other genera in the number of species, totalling 5, while Hypoholoma led the purple-brown spored forms with 6 species. The black-spored forms are comparatively few at this time of the year, and only one species of each black-spored genus was recorded.

#### METHOD OF WORK.

##### (a) COLLECTING.

Collecting was done throughout the time from Oct. 1st. to Mar. 31st. on an average of twice a week. Each kind of mushroom was wrapped by itself when collected to protect it, and to

prevent the various kinds from getting mixed up in the vasculum. Observations were made at the time of collection concerning the habit and habitat of the mushroom, and any other details that might help in its identification, such as its odor when freshly picked, or the nature of the pileus, i.e., whether viscid or not. Care was taken to bring in as varied forms as possible, showing the different stages in development.

(b) DESCRIPTION.

As soon as the mushrooms were collected, they were brought back to the laboratory, and descriptions of the various species were written immediately. This information was written on individual sheets with the necessary headings for complete description printed on them. A sample sheet is shown on the next page." In describing the color, an attempt was made to make the descriptions really useful by using standard colors. The color names used are those of "Ridgway's Color Standards and Nomenclature", with a few exceptions, which occur in descriptions made earlier in the term.

While the specimens were fresh, spore prints were made and fixed permanently by floating on very dilute collodion. Thin sections of the gills were also made, to show the structure of the trama, spores, presence or absence of cystidia and sterile cells, and these sections were mounted in a glycerine-eosin mounting fluid, and labelled. In connection with this it was noticed that in some species the cystidia took the eosin stain very deeply compared to the rest of the section, so that they

# FIELD STUDIES OF MUSHROOMS

No. ....

Name .....

Habitat and Habit .....

Locality .....

Date .....

Collector .....

**PILEUS** {

Width .....

Shape { When Young .....

          When Expanded .....

Color .....

Surface .....

Margin .....

**GILLS** {

Attachment .....

Number and Spacing .....

Shape, Width and Edge .....

Color .....

Texture .....

Spores .....

**PARTIAL VEIL** .....

**ANNULUS** .....

**STEM** {

Length and Thickness .....

Shape .....

Surface .....

Color .....

Substance .....

**UNIVERSAL VEIL** .....

**VOLVA** .....

**FLESH** {

Color .....

Changes .....

Consistency (incl. Juice) .....

Taste .....

Odor .....

NOTES:

Described by .....

Sample of the printed sheets which were filled in for each species of mushroom when it was brought into the laboratory.



(e) POISONING AND PRESSING.

When dry, the specimen was soaked in a poisoning solution of alcohol, carbolic acid, and mercuric bichloride, then placed in a moist chamber to relax, and when sufficiently pliable the stem was bent over so that the plant would lie flat. It was then laid between folds of paper towelling and pressed that way.

(f) PACKETTING.

For herbarium purposes these specimens were packetted, this method taking much less space than does boxing. In each packet was enclosed a slip of paper with the herbarium number, the name of the mushroom, its habit and habitat, the locality in which it was collected, the date, the collector's name, and any other necessary remarks. The number and name of the mushroom was also written on the outside of the packet. Two sizes of packets were used. One,  $5\frac{1}{4}$ " x  $3\frac{1}{4}$ " , served for the majority of forms, and another, 5" x 8" held the larger plants.

ACKNOWLEDGEMENTS.

In many of the keys used, the writer has followed those of Kauffman in his "Agaricaceae of Michigan", making alterations where such seemed necessary to accommodate our western forms.

The writer takes this opportunity to express her indebtedness to Mr. H. T. Gussow, (formerly Dominion botanist), Ottawa, for the use of both text and plates of Ricken's

"Blätterpilze", which proved very valuable in the determination of species; and to Prof. F. Dickson, who so kindly supervised this work, photographed the specimens as they came in, and constantly gave of his time in smoothing out problems which so frequently arose.

The writer's gratitude is also expressed to those interested friends who from time to time brought or sent in specimens to be identified.

AGARICACEAE OF VANCOUVER DISTRICT.

The family Agaricaceae is divided into five groups on the color of the spores when deposited in mass. In this work, each group will be treated in separate keys.

- Group I. Spores white in mass.
- Group II. Spores ochre in mass.
- Group III. Spores pink in mass.
- Group IV. Spores purple-brown in mass.
- Group V. Spores black in mass.

Group I. Spores white in mass.

- A. Gills of waxy consistency.....1. Hygrophorus.
- AA. Gills not waxy.
  - B. Fruit body toughish; thin plants shrivel on drying, revive when moistened.
  - C. Fruit body fleshy-leathery.
    - D. Edge of gills entire.....2. Panus.
    - DD. Edge of gills not entire.
      - E. Edge of gills serrate-torn..3. Lentinus.
      - EE. Edge of gills longitudinally split.....4. Schizophyllum.

- CC. Fruit body rather membranous; Shrivels when dried but revives when moistened.. 5. Marasmius.
- BB. Fruit body soft fleshy, decaying.
  - F. Trama of pileus vesiculose..... 6. Russula.
  - FF. Trama of pileus filamentous.
    - G. Stem eccentric lateral or wanting
      - 7. Pleurotus.
    - GG. Stem central.
      - H. Gills free, annulus present. 8. Lepiota.
      - HH. Gills not free.
        - I. Stem fleshy or fibrous.
          - J. Gills decurrent or broadly adnate, not sinuate at stem.
            - 9. Clitocybe.
          - JJ. Gills at length sinuate or emarginate on stem.. 10. Tricholoma.
        - II. Stem cartilaginous.
          - K. Gills decurrent, pileus convex to umbilicate..... 11. Omphalia.
          - KK. Gills not decurrent.
            - L. Pileus thin, remaining more or less bell-shaped, mostly small.
              - 12. Mycena.
            - LL. Pileus expanded when mature, somewhat fleshy, small, medium, or large..... 13. Collybia.

Group II. Spores ochre in mass.

- A. Gills separating easily from trama of pileus; margin of pileus involute.....14. Paxillus.
- AA. Gills not separating readily from pileus.
- B. Inner veil cobweb-like; gills at length dusted dark cinnamon or rusty; terrestrial.....15. Cortinarius.
- BB. Inner veil membranous, fibrous or floccose.
- C. Stem fleshy or fleshy fibrous.
- D. Gills at length yellow or yellow-rusty; lignicolous.....16. Flammula.
- DD. Gills alutaceous to sordid brown; terrestrial.
- E. Pileus fibrillose, silky, or innately scaly.....17. Inocybe.
- EE. Pileus smooth, more or less viscid when moist.....18. Hebeloma.
- CC. Stem cartilaginous or fragile.
- F. Pileus convex or plane, margin at first incurved, stem rather short.....19. Naucoria.
- FF. Pileus bell-shaped or conical; stem slender.....20. Galera.

Group III. Spores pink in mass.

No pink spored forms were collected during this work. They are apparently more common during the warmer months.

Group IV. Spores purple-brown in mass.

A. Annulus present, veil distinct.

B. Gills free.....21. Psalliota.

BB. Gills attached to stem.....22. Stropharia.

AA. Annulus lacking.

C. Veil present, remaining attached to margin of pileus,  
rarely forming an annulus.....23. Hypholoma.

CC. Veil, if at first present, quickly evanescent or none  
at all; slender-stemmed.....24. Psilocybe.

Group V. Spores black in mass.

A. Gills deliquescing into a black mass when mature.....  
.....25. Coprinus.

AA. Gills not deliquescing.

B. Pileus with striate or sulcate margin, fragile.....  
.....26. Psathyrella.

BB. Pileus not striate, rather fleshy, exceeding the gills,  
Gills variegated-dotted by the spores.27. Panaeolus.

1. Hygrophorus Fr.

Only one species of *Hygrophorus* was collected, and it presented several characters which made it hard to place definitely in any of the described species.

Hygrophorus sp.

Illustrations: Plate <sup>I</sup>xxiv, Fig. <sup>1</sup>9, of this work.  
Hard, Mushrooms, Fig. 171, p. 215.

PILEUS 1-3cm. broad, occasionally up to 5cm., convex becoming plane or sometimes depressed; cinnamon-buff (R) (see foot-note); surface finely granular, edge of pileus with tiny upright teeth; margin very slightly inrolled, entire. FLESH white, becoming orange-rust color on injury, consistency spongy. GILLS decurrent, distant, twice-inserted, intervenose; width 4mm., edge entire, color same as pileus, texture waxy; trama of interwoven hyphae. STEM 1.5-2.5cm. long 1.5-3mm. thick, sub-bulbous, finely pulverulent close to gills, elsewhere smooth, color same as pileus, fibrous. SPORES white, more or less lemon-shaped, smooth, 8.4u x 5.2u. CYSTIDIA none. ODOR and TASTE mild.

Gregarious. On mossy ground or humus in the woods. Collected on U.B.C. campus, Dec. 3rd. Common.

Note: For the most part in this work standard color names have been used, using Ridgway's Color Standards and Nomenclature. In all cases such colors shall have an (R) after them.

U.B.C. Myc.Herb.No.34.

This species comes near H.miniatus, but also bears some resemblance to H.marginatus. Kauffman says that the trama of H.miniatus is of parallel hyphae, while in this one the hyphae are distinctly interwoven. It is like H.marginatus in that the pileus fades on drying, the gills in some specimens retaining their color, in others, losing it, apparently depending on age of plant when collected. It differs from H.clorophanus in having trama of interwoven hyphae, no trace of citron in its color, and a non-viscid stem. H.ceraceus has a trama of interwoven hyphae, but its pileus is viscid and retains its color, both these characters differing from the specimens collected. This leaves it nearest to H.miniatus and H.marginatus.

2. Panus Fr.

Two species in this genus were collected, and may be separated as follows;

- A. Pileus with a gelatinous layer, taste mild, definite cystidia present.....(1) P.angustatus.
- AA.Pileus without gelatinous layer, finely pulverulent, taste harsh, definite cystidia absent...(2) P.stipticus.

(1) P. angustatus. Berk.

Illustrations: Pl. xxiv, Fig 3, of this work.

PILEUS 2.5-3.5cm. broad, spathulate to cuneiform, tawny ochraceous, whitens on drying, margin somewhat uneven, splitting radially. FLESH same color as pileus, no noticeable change on injury, thin and tough. GILLS close, decurrent, ventricose, 2-3mm. wide, edge entire, white, becoming yellowish-brown when dry, texture rather tough-fleshy. STEM 2cm. long by 2-3mm. thick, just a continuation of the pileus at one side, tapers toward base, striate, brownish-gray, tough, with a cartilaginous rind. SPORES white, small, apiculate, smooth, 4.272u x 2.67u. CYSTIDIA numerous, scattered regularly over the gills, like stiff spines, 74.48u x 11.748u. ODOR and TASTE mild. At least three layers showed up in the trama when fresh.

Caespitose. On decaying wood. Collected Dec. 3rd. on U.B.C. campus. Just collected once.

U.B.C. Myc. Herb. No. 40.

(2) P. stipticus. Fr.

Illustrations: Plate I, Fig. 2, of this work.

Ricken, Blätterpilze, Plate 26, Fig. 3.

Hard, Mushrooms, Fig. 173, p. 222.

PILEUS 0.4-2.5cm. broad, convex to slightly depressed when mature, pinkish-buff to cinnamon-buff(R), surface pulverulent to finely scaly, incurved at first, later expands and may become sulcate. FLESH creamy white, with dark layer on top, then layer of scales, darkens slightly on injury, ..

rather leathery in texture. GILLS Adnate but rounded behind, close, narrow, tending to be of same width all along, edge entire; ochre-colored, darker than pileus, texture fleshy-leathery. STEM lateral 4-12mm. long by 1-3mm. thick, broadens towards base, surface pulverulent-scaly, same as pileus in color, texture leathery, tough. SPORES white, smooth, narrowly oblong,  $6.23\mu \times 2.492\mu$ . CYSTIDIA none, but the ends of the hyphae stick out in bunches when the section is made, and at first sight look like cystidia. ODOR mild. TASTE slightly harsh.

Caespitose to imbricate. Found on fallen logs, these being on ~~Banglas~~ fir. Collected Feb. 16th. in the woods, U.B.C. campus, only on above date, though the same patch was in good condition at least two months later.

In Kauffman's description he says the taste is very disagreeable, while in our specimens the taste is not very marked. The gills are connected by very prominent ridge-like veins.

U.B.C. Myc. Herb. No. 104.

3. Lentinus. Fr.

There were two forms belonging to this genus collected, and although they differed in some minor points it seemed best to refer them both to the same species, namely L. ursinus. Descriptions of both forms will be included here.

L. ursinus Fr. - Bres.

Illustrations: Plate XXIV, Fig. 7, of this work.

PILEUS 2-4.2 cm. wide, convex becoming almost plane, shell- to kidney-shaped; moist forms are avellaneous to clay color when young, snuff brown when old, and tend to become pinkish buff (R) when dry; surface glabrous, delicately striate when moist, pulverulent when dry; margin at first entire, becoming unevenly lacerate. FLESH concolorous, goes creamy-white on drying, hygrophanous, GILLS close, four times inserted, narrowest at front, width 4-5 mm., edge lacerate; white, tinted with color of pileus; texture somewhat fleshy. STEM eccentric, very short, 2-3 mm. long by 2-3 mm. thick, covered with short yellow hairs, substance fleshy. SPORES white. CYSTIDIA none. ODOR pleasant, TASTE very peppery.

Gregarius, not imbricate; on dead wood. Collected March 17th. in the woods on U.B.C. campus. Not very common. U.B.C. Myc. Herb. No. 121.

L. ursinus Fr. - Bres. (second type collected).

Illustrations: Pl. II Fig 1.  
Pl. XXIV Fig 10

PILEUS 1.2-8.5 cm. broad, plane when young, slightly wavy when mature; color wood brown with disc of Mars brown (R) tomentose or velvety at point of attachment, margin tends to split radially. FLESH white, no noticeable change on injury, rather tough-fleshy, GILLS radiating fan-wise from point of attachment, close, ventricose, width 5 mm., edge serrate-torn,

white, fading to brownish-white, texture fleshy, STEM absent. SPORES white, small,  $3.204\mu \times 2.848\mu$ , almost globose. CYSTIDIA none. ODOR mild. TASTE peppery.

*V.B.C.Myc.Herb.No.42*? On rotten wood. Collected Dec.10th. in woods U.B.C. campus. Not very common.

U.B.C.Myc.Herb.No.42.

On the whole, this specimen looked as if it might have been an older form of the one described above. The abundance of the velvety hairs on the surface of the pileus near the point of attachment was the main difference, together with the lack of anything that might be considered a stem.

#### 4. Schizophyllum Fr.

Only one species collected here.

S.comune Fr. Pl. xxvii. Fig 3.

PILEUS 1-2.5cm., shell- to fan-shaped, greyish-white surface roughened by hairs, margin finely scalloped. FLESH dark brown or black, tough, leathery. GILLS radiating from point of attachment, sub-distant, rather narrow, longitudinally split along the edge, the split part turning back, color brownish tinged with mauve, texture tough-fleshy. STEM none. SPORES white, CYSTIDIA none. ODOR mild. TASTE unpleasant, woody.

Singly or gregarious on fallen wood, especially common on alder. Collected Nov.15th. in the woods on U.B.C. campus. Quite common.

U.B.C.Myc.Herb.No.23.

5. Marasmius Fr.

Two species of Marasmius were collected, but only one of them was satisfactorily identified.

M. magnisporus Murr.

Illustrations: Plate <sup>XXIV</sup> II, Fig. 2., of this work.  
Hard, Mushrooms, Fig. 107, p. 142, as M. candidus.

PILEUS 9-14mm. broad, broadly umbonate, white, smooth, margin entire. FLESH very thin, white, membranous. GILLS adnexed, distant, forking, intervenose, 0.5-1mm. wide, white, edge entire. STEM 7mm. long by 0.7-1mm. thick, narrowing toward base, white at top, almost black at base; slightly pulverulent at base, rest of stem smooth; substance fibrous. SPORES white, pointed at one end, contents granular, 9.4u x 4.3u. CYSTIDIA none. ODOR and TASTE mild.

Gregarious to sub-caespitose, on branches of dead Thimble berry (Rubus parviflorus). Collected Nov. 15th. in the woods on U.B.C. campus. Fairly common in the fall.

U.B.C. Myc. Herb. No. 25.

This Marasmius is exactly like the one pictured in Hard's book as M. candidus, but Kauffman points out that this picture does not agree with the M. candidus of Fries, being much too large. Kauffman suggests that it is possibly M. magnisporus Murr. Our specimens agree pretty well with the description given by Murrill, except that the spores are a little smaller.

6. Russula Fr.

Only one species of Russula was collected.

Russula veteriosa Fr.

Pl. III Fig. I  
Pl. XXIV Fig. IV

PILEUS 6cm. broad, rosy red, darker in center, subviscid, margin even but decidedly striate. FLESH white, pink immediately below cuticle, no noticeable change on injury, consistency spongy, juice watery, GILLS adnate, close, occasionally forking dichotomously near stem; ventricose, width 6mm., edge entire, straw color, texture fragile-fleshy, trama vesiculose. STEM 4cm. long, 1.5cm. thick, stout, equal, surface faintly striate, white, fleshy, stuffed. SPORES pale ochraceous globose, echinulate, 6.8u in diameter. CYSTIDIA present, ventricose below the prolonged tip, rough, 51.3u x 9.3u. ODOR mild, earthy. TASTE peppery.

Solitary. On ground in woods. Collected in Stanley Park Oct. 26th. Collected only once.

U.B.C.Myc.Herb.No.6.

This form seems to belong somewhere between R. veteriosa and R. tenuiceps, but is put in R. veteriosa because the evidence is more on that side.

7. Pleurotus Fr.

Only one species of Pleurotus was identified, but other species are known to occur in this vicinity.



white, no noticeable change on injury; consistency cheesy, GILLS free, close, ventricose, width 3-5mm., edge entire; white, becoming creamy-white with age, fleshy, ANNULUS present, not movable, rather fragile, may be evanescent. STEM 2-3.7cm, long by 3-6mm. thick, broad at top, then tapering slightly downwards, but swelling again into a mycelioid bulb at the base; surface with fine appressed hairs, almost smooth, color white on top, brown at base; stuffed, becoming hollow. SPORES white, ovoid-elliptical,  $6.1\mu \times 4.1\mu$ , smooth, apiculate. CYSTIDIA none. ODOR and TASTE mild.

Gregarious. In the woods, U.B.C. campus, collected Nov.8th., not seen again since then.

U.B.C.Myc.Herb.No. 20.

This species did not fit any of the descriptions on hand. The trama is not vesiculose, and the plant seems to be a *Lepiota* alright. The top is purple when dry. The annulus is not well developed, and no cystidia show on the gills. The annulus is not powdery.

9. Clitocybe Fr.

Seven species in this genus were collected, and the following key has been prepared to help distinguish them more readily.

- A. Pileus small, 1-2cm., olive-buff (R) to greenish blue-black  
.....(1) Clitocybe sp.

AA. Pileus larger, without blue-green shades.

B. Edge of gills serrate-toothed.....(2) Clitocybe sp.

BB. Edge of gills entire.

C. Pileus large, over 15cm.....(3) C. candida.

CC. Pileus smaller, under 15cm.

D. Pileus white or gray-white.

E. Pileus convex to planar, flesh thick.....

.....(4) C. nebularis.

EE. Pileus depressed to funnel-shaped, flesh thin..

.....(5) C. pithyophila.

DD. Pileus not white or gray-white.

F. Pileus cinnamon-buff to cinnamon (R).....

.....(6) C. inversa.

FF. Pileus wood brown (R) .....(7) Clitocybe sp.

(1) Clitocybe sp.

Illustrations: Plate V, Fig. 1  $\frac{1}{8}$  of this work.  
XXVI

PILEUS 1-2cm. broad, convex becoming umbilicate, some umbilicate from the first; most pilei dusky greenish-gray, but some are dark olive buff (R); slightly pulverulent; margin entire, incurved. FLESH dawn gray (R) or paler, silvery shining, no noticeable changes on injury; consistency spongy. GILLS decurrent, close to sub-distant, twice-inserted, width up to 2.5mm., edge entire, intervenose, occasionally forking; color storm gray to deep olive buff (R); fleshy, appearance somewhat water-soaked. (waxy ?) STEM 1.5-2.5cm. ..

long by 1.5mm. thick, equal or nearly so, slightly striate; color same as pileus; consistency very elastic, wont snap when bent double; stuffed. SPORES white. CYSTIDIA none. ODOR pleasant. TASTE none.

Gregarious. Resembling the color of the ground in a burned-over, mossy and grassy field. Collected March 30th. on U.B.C. campus.

U.B.C. Myc. Herb. No. 102.

Although this form has been described as a Clitocybe, it has characters which make it resemble the genera *Omphalia* and *Hygrophorus* as well. The general shape of the plant suggests *Omphalia*, but the stem is so tough and elastic that it seemed better to put it under *Clitocybe*. The somewhat waxy appearance of the gills made it resemble a *Hygrophorus*, so it is only tentatively recorded as a *Clitocybe*.

(2) *Clitocybe* sp.

Illustrations: none. Pl. xxvi Fig. 4.

PILEUS 1.5-3.5cm. broad, hemispherical becoming convex, color vinaceous tawny to pecan brown, margin buff pink (R); surface glabrous, margin entire, becoming torn with age, gills dont extend quite to the edge of the pileus. FLESH creamy white, no noticeable changes on injury, consistency tough. GILLS decurrent, extending in lines down the stem, close, narrowest in front, width 3.5mm., edge serrate-torn; creamy white, fleshy.

STEM 1.5-3cm. long, 2-5mm. thick; narrowing downwards, then slightly swollen at base; surface minutely white-pruinose, striae showing like extension of gill lines; whitish when fresh, fading to creamy yellow on top and dark chestnut brown below; consistency tough. SPORES white, somewhat bean-shaped, smooth,  $5.3\mu \times 2.7\mu$ . CYSTIDIA abundant. ODOR pleasant. TASTE mild.

Gregarious. On the sides of fallen Douglas firs. Collected Feb. 6th. and 27th. in Stanley Park. Infrequent.

U.B.C.Myc.Herb.No.101.

This plant is a typical Clitocybe in general stature, but no species described combined its characters with the serrate gills, which are ~~a~~ conspicuous on the plant even on the youngest specimens.

(3) C.candida Bres.

Illustrations: Plate  $\frac{IV}{XXVI}$ , Fig.  $\frac{1}{3}$ , of this work.

PILEUS 16-22cm. broad, slightly depressed, light drab at edge to fuscous in center, (R), silky smooth, reticulate through a hand lens; margin entire, narrow edge inrolled, gills barely extending to edge of the pileus. FLESH white, darkening slightly on injury, consistency spongy, GILLS crowded, decurrent, narrowing at both ends, width 7mm., edge entire; white becoming dingy white, fleshy. STEM 7cm. long, 2-3cm. thick, somewhat bulbous, striate with brown hairy lines, color light drab to Benzo brown (R), tough, fibrous-fleshy, stuffed.

SPORES white, ovoid-elliptical, apiculate,  $4.1\mu \times 3.0\mu$ . CYSTIDIA none. ODOR like old cauliflower greens, TASTE mildly acrid.

Gregarious. Amongst old leaves and humus. Collected on U.B.C. campus Nov. 19th.

U.B.C.Myc.Herb.No.26.

(4) C.nebularis Fr.

Illustrations: Plate V, Fig. 2., of this work.  
" XXVI 6

PILEUS convex, smoke gray (R) or darker, smooth, appressed fibrils in the center, margin entire and somewhat incurved. FLESH white, becoming pale brown on injury, consistency spongy. GILLS short-decurrent, close to crowded, narrowed at each end, width  $3.5\text{mm.}$ , edge entire; white, becoming yellowish white on drying; fleshy. STEM  $8.5\text{cm.}$  long,  $1.7-2.5\text{cm.}$  thick, sub-bulbous, faintly striate with fibrils, color slightly paler than pileus, substance fleshy-fibrous. SPORES white, ovoid-elliptical,  $5.3\mu \times 3.4\mu$ . CYSTIDIA none. ODOR mild. TASTE slightly acrid.

Single or gregarious. On ground in woods. Collected on U.B.C. campus Dec. 10th.

U.B.C.Myc.Herb.No. 43.

(5) C.pithyophila Fr.

Illustrations: Hard, Mushrooms, p. .  
Pl. XXXI Fig. 9. of this work.

PILEUS convex when young, infundibuliform when ma-

ture, whitish buff, smooth, glutinous when moist, shining when dry, margin entire, sometimes regular, sometimes very irregular. FLESH white tinged with buff, becoming rusty-brown on injury, consistency spongy. GILLS decurrent, readily separable from the pileus, close, at least four times inserted, ventricose, width up to 5mm., edge entire, color dingy white, water-soaked appearance when old. STEM 2-3.5cm. long, 3-10mm. thick, compressed laterally, smooth, sometimes pulverulent at top, color whitish buff, darkening towards the base; fibrous. SPORES white, ovoid-elliptical, smooth. CYSTIDIA none. ODOR and TASTE mild.

Caespitose. On lawns. Collected in Grandview and in Point Grey, Nov. 5th. Common.

U.B.C.Myc.Herb.No.18.

(6) C. inversa Ricken.

Illustrations: Ricken, Blatterpilze, Pl. , Fig. .  
Pl. XXVI Fig. 5. of this work.

PILEUS 4-6cm., depressed to infundibuliform, color cinnamon buff to cinnamon (R), smooth, margin even, FLESH creamy white, no noticeable changes on injury, consistency spongy. GILLS decurrent, close, intervenose, narrowest at outer edge, width 5mm., edge entire, lighter tint of pileus color, fleshy. STEM 10cm. long, 5mm. thick, gradually broadening towards base; lower half has mycelioid hairy covering, rest smooth; color same as pileus; fleshy-fibrous. SPORES white with pale ochraceous tinge, globose, echinulate, 3.9u in diameter. CYSTIDIA none. ODOR and TASTE mild.

Gregarious to sub-caespitose. In humus in the woods.  
Collected on U.B.C. campus Dec. 3rd. Common in the fall.

U.B.C.Myc.Herb.No.33.

(7) Clitocybe sp.

Illustrations : none.

PILEUS 10.2cm. broad, slightly depressed; wood brown (R), surface smooth, margin entire, slightly incurved. FLESH dingy white, darkens slightly on injury, consistency spongy. GILLS decurrent, close, ventricose, width 5mm., edge entire, undulate; color drab, slightly lighter than pileus; fleshy. STEM 12cm. long, 2.5-3.5cm. thick; swollen towards base, then narrowing again downwards; striate with grayish-brown appressed fibrils; color grayish-white; fibrous. SPORES white. CYSTIDIA none. ODOR slightly unpleasant. TASTE mild.

Solitary. In leaf mould in woods. Collected on U.B.C. campus, Nov. 15th. Infrequent.

U.B.C.Myc.Herb.No.24.

10. Tricholoma Fr.

A single species of this genus was collected, and only one specimen of the species, consequently identification was a little difficult.

Tricholoma sp. Pl. xxiv. Fig 11 of this work.

PILEUS 11mm. broad, hemispherical; dark plumbago slate (R), covered with moderately small dark scales, margin

entire, but slightly scalloped. FLESH white, very thin, becoming blue on injury, fleshy, GILLS adnexed, seceding, sub-distant, narrowest at outer edge, width 1.8mm., edge entire; white; fleshy. STEM 5.5cm. long, 1.5mm. wide, equal except for bulbous base, smooth, faintly white-pulverulent up by gills, color plumbago slate (R); fibrous, with a cartilaginous rind. SPORES white, somewhat lemon-shaped, rough, 9.6u x 5.9u. CYSTIDIA none. ODOR and TASTE slightly unpleasant.

Solitary. In humus in woods. Collected on U.B.C. campus, Dec. 3rd. Infrequent.

U.B.C. Myc. Herb. No. 32.

The stem of this plant exuded a clear watery juice when broken. ( It looks as if it might be T. ionides in Ricken.)

11. Omphalia Fr.

Three species have been recorded in this genus, although, as was stated in the description of the first species under Clitocybe, that species perhaps belongs here.

A. Pileus wax-yellow to citron-yellow, edge of pileus scalloped  
.....(1) O. umbellifera.

AA. Pileus orange yellow to reddish brown, edge of pileus not scalloped.

BB. Pileus 3-15mm., russet to auburn (R)..(2) O. (hepatica ?)

BB. Pileus 1-3cm., orange brown,.....(3) O. (campanella ?)

(1) Q.umbellifera Linn.

Illustrations: Plate VI, Fig. 1, of this work.

PILEUS 5-15mm. broad, convex when young, umbilicate when mature; color clay-color to tawny olive and old gold (R), surface glabrous, moist, not viscid, margin beautifully scalloped. FLESH color same as pileus, becomes creamy white on drying, hygrophanous, GILLS decurrent, distant, once-inserted, sometimes forking, narrowed at each end, width 1-1.5mm., edge entire, color pinkish buff (R), semi-translucent, somewhat waxy. CYSTIDIA none. STEM 1.2-2.5cm. long, 1.5-2mm. thick, equal, or with a slight swelling at base, minutely pulverulent to glabrous, white hairs at base; top half snuff brown, lower half fading to pinkish buff (R), somewhat fragile, but not cartilaginous. SPORES white. ODOR none. TASTE slightly farinaceous.

Densely gregarious to sub-caespitose on old logs and stumps. Collected March 17th. in woods on U.B.C. campus. Very common from then till time of writing.

U.B.C.Myc.Herb.No.120.

(2) Q.(hepatica ?) Batsch.

Illustrations: Plate VI, Fig. 2, of this work.  
" XXIV, " 8

PILEUS 3-15mm. broad, convex, with incurved edge when very young, but very soon umbilicate; color russet to auburn (R), surface minutely creamy pulverulent when young,

soon glabrous, margin striate when moist, splitting slightly, radially, in older specimens. FLESH same color as pileus, somewhat hygrophanous, no noticeable changes on injury, consistency fleshy. GILLS short decurrent, sub-distant, twice inserted, width 2mm., narrowed behind, edge entire; color ochraceous, sometimes with a flesh tint, fleshy. STEM 7-13mm. long, 1-1.5mm. thick, narrows towards base, then dilates into small bulblet, surface creamy white pulverulent down to yellow-hairy base, color auburn or darker; cartilaginous rind, fibrous inside, stuffed, becoming hollow. SPORES white, ovoid elliptical, 5.2u x 2.8u, smooth. CYSTIDIA few and not very noticeable on the sides of the gills, more abundant on the edge, ventricose, smooth, 33.1u x 8.0u. ODOR and TASTE none.

Gregarious to caespitose on sides of decaying Douglas fir,. Collected in woods, U.B.C. campus, Feb.22nd. Not very common.

U.B.C.Myc.Herb.No.106.

As nearly as could be judged from the literature on hand, this little Omphalia belongs somewhere near O.hepatica, but the gills are not distant, but vary from sub-distant to close. Ricken uses the proximity of the gills to each other to separate some of the species from others, and if it is placed in the "gills almost crowded" group, it falls in O.pyxidata, and Ricken's description of this species does not fit it at all, especially when he emphasizes the point that in O.pyxidata the gills are the darkest part of the whole plant. In our specimens

the gills are the lightest part of the whole plant.

(3) O. (campanella?) Fr.

Illustrations: Plate <sup>XXVII</sup>~~VII~~, Fig. 1<sup>2</sup>, in this work.

Hard, Mushrooms, Plate 17, p. 131.

Kauffman, Agaricaceae of Michigan, Pl. CLXXII.

PILEUS 1-3 cm. broad, hemispherical with small umbilicus when young, later convex but retaining umbilicus; orange brown, covered with very fine hairs appressed to pileus; margin entire. FLESH white tinged with orange, becoming orange on injury and in age, consistency cheesy. GILLS decurrent, subdistant, twice inserted, intervenose, occasionally forked near stem; same width throughout length, 4 mm., edge entire; color orange-yellow; fleshy. STEM 1-3.5 cm. long, .5-3 mm. thick, equal, smooth, with a few striae, orange brown to brown, tough, with a cartilaginous rind. SPORES white in mass, decidedly ochre under microscope, lemon-shaped, rough, 7.6u x 5.2u. CYSTIDIA none. ODOR mild. TASTE acrid.

Gregarious to caespitose. On moss-covered decaying firs in the woods. Collected in the woods on U.B.C. campus, Oct. 29th. Frequent in the fall.

U.B.C. Myc. Herb. No. 14.

O. campanella is reported to have smooth spores, and nothing is said about the yellow appearance of the spores under the microscope, and is not reported as large as the forms of this species. Hard has a photograph of Hygrophorus miniatus which would pass for a photo of this species, so it

is possible that the watery characteristic of the pileus of O.campanella has been confused with the waxy nature of a Hygrophorus. The description of H.miniatus as given in Kaufman's work, fits this plant very well, except that it does not describe the spores as in this species, but says "spores variable". Thus more work is needed on this species before it can be satisfactorily identified.

12. Mycena Fr.

More species of this genus were found than of any other, and more difficulty was experienced in separating them into definite species. In a few cases, specimens were obtained in such small numbers at a time that there was not sufficient material to identify with certainty. This includes a dainty minute pink form, and a slappery greenish-yellow one, which were collected once or twice in ones or twos at the most. The following species do not include such forms as M.haematopa which is known to occur here, but has not been collected while this work has been in progress. The following key will serve to show the distinguishing features of the 12 species recorded in this genus.

- A. Exuding a reddish juice when broken; edge of gills dark-colored.....(1).M.sanguinolenta.
- AA. Juice and edge of gills not colored.
  - B. Pileus minute, whole plant pure white.(2).M.minutula.
  - BB. Pileus not as above.

C. Gills assuming flesh-color in age..(3) M. galericulata.  
CC. Gills usually grayish in age.

D. Stem markedly firm, rigid.

E. Pileus gray or almost white.

F. Odor nitrous; pileus white to pearl-gray.

.....(4) M. (polygramma Fr. var. albida.?)

FF. Odor not nitrous; pileus and gills gray.

.....(5) M. parabolica.

EE. Pileus dark fuscous or dark brown.

G. Gills sub-distant, narrowly adnexed; pileus convex, but not deeply so..(6) M. excisa.

GG. Gills crowded; pileus deeply convex to conical, tending to undulate between umbo and margin.....(7) M. inclinata.

DD. Stem not markedly firm or rigid.

H. Odor alkaline or nitrous in fresh plants.

I. Stem lubricous.....(8) M. alcalina.

II. Stem not lubricous.

J. Gills unciniate.

K. Odor strong; stem dry.(9) M. summonisaca.

KK. Odor weak; stem pseudo-viscid.....

(10) Myceus sp.

JJ. Gills not unciniate....(11) M. leptocephalus.

HH. Without nitrous or alkaline odor.....

.....(12) M. atroalba.

(1) M. sanguinolenta Fr.

Illustrations: Plate <sup>XXVI</sup> VII, Fig <sup>1</sup> 2., of this work.  
Ricken, Blätterpilze, Pl. 110, Fig. 7.

PILEUS 5-12mm. broad, mostly about 8mm., conic-campanulate, usually with definite umbo; color Diamine brown when young, becoming Mikado brown to cinnamon brown <sup>(R)</sup> when mature; surface glabrous, faintly striatulate; margin entire. FLESH color same as pileus, bleeds profusely when cut, spongy, juice dull red, GILLS adnate, in some specimens with a decurrent tooth, sub-distant to distant, ventricose, width 1-1.5mm., edge dark purplish-red; white; texture fragile fleshy. STEM 2.5-4cm. long, 1-2mm. thick; equal, though sometimes slightly swollen at base; glabrous for the most part, whitish hairs at base; color pale cinnamon brown (R); cartilaginous. SPORES white, ovoid, apiculate, 6.9 $\mu$  x 3.7 $\mu$ , smooth. CYSTIDIA numerous on edge of gills, colored dark reddish-purple when fresh, color soon fades when mounted; size 32.2 $\mu$  x 5.7 $\mu$ ; shape ventricose below the narrowed tip. ODOR mild. TASTE slightly bitter.

Gregarious. Usually amongst fallen needles under conifers, occasionally on old wood. Collected in Stanley Park, Feb. 27th., and subsequently.

U.B.C. Myc. Herb. No. 107.

The only way this plant differs from Kauffman's forms is in the size, and here we find them up to twice as large as the Michigan forms, although this increase is in the pileus rather than in the stem.

(2) M. minutula Pk.

Illustrations: Plate <sup>xxv</sup> VIII, Fig. 1<sup>5</sup>, of this work.

PILEUS 2-5.5mm. broad, convex to campanulate when young, becoming broadly umbonate; color white, surface finely pulverulent; margin entire. FLESH white, membranous, no noticeable changes on injury. GILLS broadly adnate to short-decurrent distant, irregularly once-inserted; comparatively wide, 1-1.5mm edge entire; color white, membranous. STEM 10-15mm. long, 0.5mm. thick, filiform, gradually tapering downwards; surface pulverulent-pruinose; white; fragile, cartilaginous, though not brittle. SPORES white. CYSTIDIA none. ODOR and TASTE not recorded owing to scarcity of specimens.

Gregarious. In mossy crotch of living maple tree. Collected in the woods on U.B.C. campus, Mar. 17th.

U.B.C. Myc. Herb. No. 119.

This species differs from Peck's description only in the lack of the little veinlets which he says are found between the gills.

(3) M. galericulata Fr.

Illustrations: Plate <sup>xxv</sup> VIII, Fig. 2<sup>6</sup>, of this work.  
Hard, Mushrooms, Pl. 16, Fig. 89, p. 121.

PILEUS .7-3.2cm. broad, conic, almost cylindrical, expanding to broadly conic or umbonate; color mummy brown to bister (R); Surface smooth, glutinous when moist, somewhat glaucous; margin entire, striate to umbo. FLESH grayish, no noticeable changes on injury; consistency hygrophanous.

GILLS adnate to adnexed, seceding, leaving a small decurrent portion next the stem, sub-distant, thrice-inserted, inter-venose, ventricose, width 3mm., edge entire; color white, becoming gray with age, tinged pink, and here and there stained reddish brown; texture fleshy-fragile. STEM 3-6.5cm. long, 1.5-2.5mm. thick, mostly equal, though some are grooved longitudinally and twisted; surface smooth, fibrillose at base; color same as pileus; cartilaginous, hollow. SPORES white, ovoid elliptical, smooth. CYSTIDIA none or very few. STERILE CELLS found along edge of gill, but few in number. ODOR nitrous, TASTE none.

Caespitose. On decaying wood. Collected in the woods, U.B.C. campus, March 9th. Common.

U.B.C. Myc. Herb. No. 111.

This Mycena seems to come nearest M. galericulata, although the color is pretty dark for it. The sterigmata of the basidia are very prominent, and the sterile cells can be found along the sides of the gills as well as on the edge. They are sac-shaped, some are roughened by short protruberances. A few colorless structures like short stout cystidia were found on the sides of the gills.

(4) M. (polygramma Fr. var. albida)

Illustrations: Plate <sup>XXV</sup> IX, Fig. 1, of this work.

Atkinson, Studies of American Fungi, p. 94.

PILEUS 2.5cm. broad, broadly conical, pale smoke-gray, almost white, with drab umbo (R), surface glaucous,

soon becoming glabrous, margin entire. FLESH white, no noticeable changes on injury, consistency spongy. GILLS sinuate-annexed, with small decurrent tooth, sub-distant, once-inserted, almost equal, ends slightly narrowed, width 1.5-2mm. wide, edge entire; white; fragile-fleshy. STEM 14cm. long, 1.5-2mm. thick, filiform, lower half grooved down one side so that it looks like two stems at the base; surface glabrous; color white above, light drab below; substance cartilaginous. SPORES white, ovoid, smooth. CYSTIDIA none. STERILE CELLS inversely pear-shaped to globose, covered with small rod-like projections. ODOR mildly nitrous, TASTE mildly acrid.

Caespitose. Growing on decaying wood. Collected in the woods, U.B.C. campus, March 9th.

U.B.C. Myc. Herb. No. 113.

This specimen was found under a slab of loose bark in comparative darkness, which may account for its tall, slender growth. The gills remain pure white, but the specimens do not fit any of the species described under Kauffman's group *Adonidae*. It fits Hard's description of *M. stannea* pretty well, but the specimens were much more slender than his plate of it. This might be due to the moist, dark place in which it was growing. In Kauffman's book it fits the description of *M. polygramma* fairly well, except for the lack of fusiform cystidia which he says are abundant. In Atkinson's "Studies of American Fungi", p. 94, he has a plate which looks exactly like our specimens.

(5) M. parabolica Fr.

Illustrations: Plate <sup>XXVI</sup>IX, Fig. <sup>2</sup>2., of this work.

PILEUS up to 3.5cm. broad, conical when young, becoming broadly umbonate with a recurved margin; color drab to fuscous (R); surface glabrous, moist; margin entire, striate to umbo. FLESH same color as pileus, no noticeable changes on injury, consistency somewhat hygrophanous. GILLS narrowly adnixed, close, twice-inserted; shape almost equal, squarish cut at outside edge; width 4-5mm.; edge entire; color smoke-gray (R); fleshy. STEM 15cm. long, 5mm. thick; slightly swollen towards base; glabrous, white fibrillose at base, twisted., splitting longitudinally on pressure; color drab to smoke-gray (R); cartilaginous, though somewhat fleshy. SPORES white, smooth, ovoid-elliptical, narrowed at one end. CYSTIDIA none. STERILE CELLS on edge of gills inversely pear-shaped to globose, covered with short spines. ODOR mild, like iodine. TASTE mild.

Gregarious. In humus in woods. Collected in the woods on U.B.C. campus, March 9th. Frequent.

U.B.C. Myc. Herb. No. 112.

This specimen appears more like a Collybia than a Mycena in size and general proportions, but no species described under Collybia fitted it. In the descriptions it seems to be between M. parabolica and M. galericulata. It has more gray in it than in Kauffman's description of M. galericulata, and it has a noticeable odor. It has wider gills than he reports for M. parabolica, and our specimen is considerably larger. No cystidia

were seen, but sterile cells are present. It seems to fit M. parabolica better than anything else.

(6) M. excisa Fr.

Illustrations: Plate <sup>XXV</sup>X, Fig. 1<sup>4</sup>, of this work.

PILEUS 1.5-2.7cm. broad, convex when young and when expanded; color cinnamon brown to natal brown with fuscous shades (R); surface glaucous when fresh; margin slightly wavy, almost scalloped. FLESH grayish, when fresh, whitish when dry; no noticeable changes on injury; consistency hygrophanous. GILLS narrowly adnexed; sub-distant; twice- to thrice-inserted; broadly ventricose, surface white-pulverulent; width 4mm., edge entire; intervenose; white, tinged gray next to pileus; texture fleshy. STEM 3-4cm. long, 2-3mm. thick; equal with small bulb-like dilation at the base; glaucous at first, becoming subglutinous; color same as pileus; cartilaginous, stuffed, becoming hollow. SPORES white. CYSTIDIA fairly numerous, quite long and slender. ODOR somewhat nitrous. TASTE mild.

Caespitose. On decaying wood. Collected in the woods, U.B.C. campus, March 14th. Common.

U.B.C. Myc. Herb. No. 115.

(7) M. inclinata Fr.

Illustrations: Plate <sup>XXV</sup>X, Fig. 2<sup>2</sup>, of this work.  
Kauffman, Agaricaceae, of Michigan, Plate CLXX.

PILEUS .7-2.3cm. broad, conic, deeply so, remaining conic-campulate; color fuscous in center to bister at margin,

(R), surface striate to umbo, undulate from umbo to margin, margin entire at first, becoming finely scalloped. FLESH color like pileus or slightly lighter; becoming white on drying; consistency hygrophanous. GILLS adnexed (with a small decurrent tooth in a few cases), close to sub-distant, thrice-inserted; ventricose, comparatively narrow, 1-2mm., edge entire; white, becoming gray; texture fleshy, fragile. STEM 4.9cm. long, 1-1.5mm. thick, equal, smooth, white strigose at base; color same as pileus; cartilaginous. SPORES white. CYSTIDIA none. STERILE CELLS on the edge of the gills short stout, papillate. ODOR decidedly nitrous. TASTE none.

Caespitose. On rotten wood. Collected in the woods, U.B.C. campus, March 14th. Common.

U.B.C.Myc.Herb.No.116.

(8) M.alcalina Fr.

Illustrations: Plate XXV, Fig. 1, of this work.

PILEUS 1.5-2.5cm. broad, conic to hemispherical, becoming broadly conic or campanulate,; color drab on the umbo, fading to light drab at the edge; surface glabrous, striate to umbo, in many cases with a darker ring half way between umbo and margin; margin entire. FLESH grayish white, translucent; no noticeable changes on injury, somewhat hygrophanous. GILLS adnexed, occasionally with a decurrent tooth; sub-distant, twice-inserted; almost equal, width 2mm., edge entire; intervenose; white, slowly graying, tinged flesh color; texture

fragile-fleshy. STEM 5-6.5cm. long, 1.5-2mm. wide; filiform, equal; glabrous, hardly glutinous but moist; white fibrillose at base; color light drab (R); cartilaginous. SPORES white, ovoid elliptical, granular. CYSTIDIA none. STERILE CELLS on edge of gills short, stout, papillate. ODOR mildly nitrous. TASTE slightly bitter.

Caespitose. On decaying, moss-covered logs. Collected in the woods, U.B.C. campus, March 9th. and later.

U.B.C.Myc.Herb.No. 110.

(9) M.ammoniaca Fr.

Illustrations: Plate XXV, Fig. 10, of this work.

PILEUS 5-7mm. broad, conic, gray, smooth, faintly striate, margin entire. FLESH color same as pileus, becoming pale gray when dry, hygrophanous, GILLS adnexed with very striking decurrent tooth, rather close, once-inserted, narrowly ventricose, scarcely 1mm. wide, edge entire; color grayish white, texture fleshy. STEM 3-4.5cm. long, .7-1mm. thick, equal, almost filiform; glabrous, not viscid; grayish-fawn, cartilaginous. SPORES white, pip-shaped. CYSTIDIA none. STERILE cells on sides and edge of gills, inversely pear shaped, covered with short rod-like projections, very numerous on the edges of the gills. ODOR decidedly alkaline. TASTE like its odor.

(10) Mycena sp.

Illustrations: Plate XI, Fig. 1, of this work.

XXI " 7.

PILEUS 2-3.4cm. broad, conic to campanulate; umbo fuscous, margin drab (R); surface smooth, striatulate; margin entire, splitting radially in some of the older specimens. FLESH very thin, color same as pileus, somewhat hygrophanous, no noticeable changes on injury, consistency spongy. STEM 9-13cm. long, 2-3.5mm. thick; equal, with base slightly swollen, or compressed laterally; glutinous to lips, slippery when collected; base fibrillose; color light fuscous (R); cartilaginous, slightly fibrous-elastic; hollow. SPORES white, ovoid elliptical, pointed at one end, 10.1u x 5.3u. CYSTIDIA none. STERILE CELLS inversely pear-shaped to globose, covered with short, rod-like projections; sterile cells most noticeable at edge of gills.

Gregarious to caespitose amongst fallen leaves in the woods. Collected in the woods, U.B.C. campus, and in Stanley Park, Jan. 31st. and later.

U.B.C.Myc.Herb.No.47.

This Mycena seems to fit the species M.metata better than any other, but it does not fit it in all points. It has a sub-viscid stem like M.alcalina, but its sterile cells are different. Its habit is like that of M.ammoniaca, and the gills at least in some specimens are uncinata, stem is slippery, but general size is larger, and odor is nitrous but not strongly so. The gills of this species are peculiarly attached to the stem, the hymenium of one gill being continuous with the hymenium of the next, and a somewhat collar-like structure is formed,

attached to stem, yet stem can be pulled out and collar left intact. It differs from *M. metata* in the uncinata gills.

(11) *M. (leptocephala ?) Fr.*

Illustrations: Plate XXV, Fig. 3, of this work.

PILEUS 1-2.7cm. broad, conic, becoming umbonate, avellaneous to wood brown, darker on umbo (R); smooth, somewhat striate; margin slightly incised in young specimens, becoming fimbriate in older ones. FLESH dingy white, becoming darker, with a water-soaked appearance on injury; consistency spongy. GILLS adnexed, sub-distant, twice to thrice inserted, intervenose; ventricose, width 3mm., edge entire; white; fleshy. STEM 2-3.5cm. long, 1-3mm. thick, slightly swollen at base; smooth, white-hairy at base; color same as pileus; cartilaginous. SPORES white, ovoid, apiculate, smooth, 6.4u x 4.8u. CYSTIDIA none. ODOR somewhat like iodine. TASTE slightly astringent.

Caespitose. On decaying logs in woods. Collected in the woods, U.B.C. campus, Dec. 3rd.

U.B.C. Myc. Herb. No. 39.

(12) *M. atroalba Fr.*

Illustrations: Plate XXV, Fig. 9, of this work.

PILEUS .5-2.5cm. broad, hemispherical, becoming conic-campanulate; smoke-gray (R); smooth, somewhat striate, margin entire. FLESH smoke gray (R); darkens, with a water-

soaked appearance on injury; consistency spongy. GILLS adnexed, sub-distant, twice inserted, narrowly ventricose, width 2mm., edge entire, white, slightly dingy, texture fleshy. STEM 2.5-5.5cm. long, 1-2.5mm. thick, equal, smooth; color same as pileus at top, steadily darkening towards base; cartilaginous or slightly fibrous. SPORES white, ovoid elliptical, smooth, 9.3u x 5.0u. CYSTIDIA none. ODOR mild. TASTE acrid.

Gregarious. On humus in woods. Collected in the woods on U.B.C. campus Dec. 3rd.

U.B.C. Myc. Herb. No. 35.

13. Collybia Fr.

Only two species of this genus were collected, and neither of the species was satisfactorily determined.

A. Pileus avellaneous to wood brown, flesh thin.....

.....(1) Collybia sp.

AA. Pileus red or slightly brownish-red, flesh thick.....

.....(2) C. (conflaens ?).

(1) Collybia sp.

Illustrations: Plate KI, Fig. 2, of this work.  
XXIV 2

PILEUS 2-5cm. broad, conical, becoming broadly umbonate, margin of pileus recurving; avellaneous to wood brown (R); surface smooth; striate; margin entire, becoming fimbriate. FLESH dingy white to concolorous with the pileus; becomes darker on injury; very thin; consistency spongy.

GILLS subdistant, three to four times inserted; ventricose, width up to 4mm., edge entire; color grayish-brown, lighter than pileus; water soaked appearance, fleshy. STEM 6-8cm. long, 2-4mm. thick; almost equal, base slightly swollen; glabrous except for long soft hairs extending up to 2cm. from base; color same as pileus, fading dark brown; substance cartilaginous. SPORES white, lemon-shaped, 7.8u x 4.1u. CYSTIDIA none. ODOR mild, rather pleasant. TASTE mild or none.

Gregarious to caespitose. On humus in woods. Collected in the woods on the campus, Nov. 16th. Infrequent.

U.B.C.Myc.Herb.No. 21.

The trama of this species is filamentous, and the gills are intervenose. It does not fit any species described in our literature.

(2) C. (confluens ?)

Illustrations: Plate <sup>XII</sup>XXIV, Fig. 1, in this work.  
Hard, Mushrooms, p. 114.

PILEUS 5.5cm. broad, hemispherical becoming broadly umbonate, red or brownish-red; surface smooth, somewhat glutinous; margin entire. FLESH white, with brownish-red tinge under cuticle; darkens when bruised; consistency cheesy. GILLS adnexed; broader next stem; width 7mm.; edge decidedly undulate; white; fleshy. STEM 4.5cm. long, 6-8mm. thick, slightly broader towards base; covered with fine hairs at top, rest smooth, somewhat striate; white to pale brown; fleshy-fibrous. SPORES white, globose, 2.8u in diameter. CYSTIDIA none. ODOR and TASTE mild.

Gregarios to caespitose. On humus in the woods. Collected in the woods, U.B.C. campus, Oct. 29th. Infrequent.

U.B.C.Myc.Herb.No.13.

The basidia of this species have very prominent sterigmata, and are worthy of mention in the description.

GROUP II. SPORES OCHRE IN MASS.

14. Paxillus Fr.

Several Paxillus-like forms were collected, but only one was definitely determined.

Paxillus involutus Fr.

Illustrations: Plate XXV, Fig. 5, of this work.

Ricken, Blatterpilze, Pl.28, Fig.2.

Atkinson, Mushrooms, Fig.155, p.166.

Hard, Mushrooms, Fig.232, p.287.

PILEUS 3-9cm. broad, slightly umbonate, becoming depressed, color yellowish brown, surface smooth, somewhat glutinous, margin entire. FLESH creamy white, changes little or none, darkening only slightly on bruising; consistency cheesey. GILLS adnexed to slightly decurrent, close; width 3-5mm., slightly narrower at outer edge; edge entire; color tawny brown; texture fleshy. STEM 2-5cm. long, 4-10mm. thick, equal; surface covered with very fine hairs; color same as pileus; texture fibrous, hollow. SPORES ochre, ovoid-elliptical, smooth,  $6.9\mu \times 3.7\mu$ . CYSTIDIA present, ventricose below a cylindrical upper half, not abundant. ODOR mild, TASTE mildly acrid.

Gregarious. In grass and bracken. Collected along the edge of the boulevard on the campus, Nov. 3rd.

U.B.C.Myc.Herb.No. 16.

Partial veil cobwebby, very fine.

15. Cortinarius Br.

Five species of this genus were recognized as distinct forms, and these may be separated with the aid of the following key:

A. Pileus and stem very scaly.....(1) C.squarrosus.

AA.Pileus and stem not scaly.

B. Pileus violet or purplish,,.....(2)C(alboviolaceous?)

BB.Pileus not violet or purple.

C. Pileus ochraceous orange to tawny (R),.....

.....(3).Cortinarius sp., (117)

CC.Pileus hazel (R) or darker.

D. Spores rough, over 10u long..(4) Cortinarius sp.(7)

DD.Spores smooth, under 10u long.(5) C.rigidus.

(1) C. squarrosus Clem.

Illustrations: Plate XIII, Fig. 1, of this work.  
" XXVIII " 1

PILEUS 1-3cm. broad, conical to hemispherical, becoming less deeply convex; color chocolate brown; surface covered with scales; margin fringed with remnants of cobwebby partial veil. FLESH creamy white, becoming brown on injury, consistency cheesy and dry. GILLS adnate to adnexed; close to crowded; width 3mm, narrower at outer edge; edge entire; color light brown

texture fleshy. PARTIAL VEIL present, cobwebby, remaining as a fringe on cap. ANNULUS suggested by presence of shreds of the veil, soon disappearing. STEM 1.5-6cm. long, 3-7.5mm. thick, equal, densely scaly, especially below the point where the partial veil reaches stem; almost white at top, steadily darkening to brown at base; texture rather tough-fibrous. SPORES light brown, ovoid-elliptical, smooth, 6.1u x 4.2u. CYSTIDIA present, rough, short and blunt, 16.4u x 8.4u, abundant. ODOR mild. TASTE mild.

Densely caespitose. On lawn. Collected on the boulevard, U.B.C. campus, Nov. 3rd. Common in the Fall.

U.B.C.Myc.Herb.No.15.

(2) C.(alboviolaceous ?)

Illustrations: Plate XIII, Fig. 2, of this work.  
XXVIII 7.

PILEUS 1.6cm, broad, almost spherical at first, becoming conical then broadly umbonate; color purplish, violet; surface smooth, with long soft hairs adhering close; margin of pileus persistently incurved, with fragments of veil adhering. FLESH creamy white, no noticeable changes on injury, consistency cheesy. GILLS adnate to adnexed, seceding, close, width 3mm., edge fimbriate with cystidia; color at first dingy white, then light brownish; texture fleshy. PARTIAL VEIL white, cobwebby. STEM 5cm. long, 5mm, thick; almost equal, very slightly larger at the base; surface smooth, slightly striate, color violet, becoming brownish with age; fleshy-fibrous. SPORES ochre, ovoid-

elliptical. CYSTIDIA abundant, upper half cylindrical, lower half ventricose, tips crystalline. ODOR mild. TASTE slightly bitter.

Gregarious. On mossy ground in the woods. Collected in Stanley Park Oct. 26th. Infrequent.

M.B.C.Myc.Herb.No. 9.

Just like the picture of C. ionioides in Kauffman's "Agaricaceae of Michigan", but more like Marshall's C. albo-violaceus as far as descriptions go.

Spores 7.7u x 5.3u. Cystidia 56.1 x 13.3u.

(3) Cortinarius sp.

Illustrations: Flgte<sup>xxvii</sup> Fig. 4, of this work.

PILEUS 2cm. broad, conic campanulate, becoming umbonate; color ochraceous orange to tawny (R); surface very smooth almost polished; margin persistently incurved, entire, veil remaining as a fringe when young, soon disappearing. FLESH creamy white, becoming yellow on injury or exposure; consistency spongy, thick at umbo. GILLS adnate, seceding, rounded behind; close; width 3-4mm., edge entire; color chamois to cinnamon buff (R), texture fleshy. PARTIAL VEIL cobwebby, chocolate brown, forming an annulus. ANNULUS present, of chocolate brown hair-like fibrils. STEM 4-5cm. long, 3.5-4.5mm. thick; equal to slightly attenuated downwards; surface faintly striate, a few shreds of veil here and there; creamy white above brownish below; substance fleshy-fibrous. SPORES ochre.

CYSTIDIA none. ODOR mild. TASTE slightly astringent.

Caespitose, not densely so. On very rotten wood.

Collected on the campus, March 15th.

U.B.C.Myc.Herb.No.117.

(4) Cortinarius sp.

Illustrations: Plate XIV, Fig. 1, of this work.  
XXVIII 8

PILEUS 3.5cm. broad, plane, slightly convex, or becoming slightly depressed; color dark brown; surface covered with fine, slender hairs; margin even, somewhat striate. FLESH color dark brown, becoming darker and juicier with age, consistency spongy. GILLS adnate to adnexed, sub-distant, twice inserted; width 6mm., narrower at outer edge, edge entire; color dark brown, texture fleshy. STEM 3.5cm. long, 5mm. thick, comparatively slender, broader at base; smooth, slightly striate; color dark brown; substance fleshy-fibrous. SPORES rusty brown or a little darker, almost pip-shaped, rough, 11.0u x 6.1u. CYSTIDIA none. Trama filamentous.

Single, hardly gregarious. In mossy earth in the woods. Collected in Stanley Park, Oct. 26th.

U.B.C.Myc.Herb.No.7.

(5) C.rigidus (Sacc) Ricken.

Illustrations: Plate XIV, Fig. 2, of this work.  
XXVIII 9  
Ricken Blatterpilze.

PILEUS 1.5-2.3cm. broad, convex, hazel (R), when moist becoming lighter on drying; surface appears glabrous when moist,

and is striate, becoming whitish pulverulent on drying; margin entire. FLESH same color as pileus, becoming creamy white on drying; consistency hygrophanous. GILLS adnate to short decurrent, close to sub-distant, two to three times inserted; width up to 3.5mm. narrower at front, edge fimbriate; color light ochraceous buff (R) to concolorous with pileus; texture fleshy. PARTIAL VEIL cobwebby, remnants on edge of pileus soon disappear. ANNULUS seen in very young specimens, evanescent. STEM 3.5cm. long, 3mm. thick, equal, or slightly swollen towards base and apex; Glabrous (moist) striate with appressed fibrils (dry); color same as pileus; substance fibrous with a cartilaginous rind. SPORES ochre, ovoid-elliptical, smooth. CYSTIDIA none. STERILE CELLS present on the edge of the gills. ODOR fungoid.

Gregarious. On plant material, mostly cat-tail leaves and elder twigs. Several were found on living elder as high as three feet off the ground. Collected in Stanley Park (Beaver Lake) March 19th.

U. B. C. Myc. Herb. No. 123.

16. Flammula Fr.

Two species have been included here, one definitely known to belong to this genus, the other placed here tentatively, as it seems to fit here better than anywhere else.

(1) Flammula echinulisporus Murr.

Illustrations: Plate XXVII, Fig. 6., in this work.

PILEUS 13.5cm. broad, convex, golden yellow, smooth, •

with slender hairs appressed; margin entire, slightly inrolled. FLESH orange yellow, no noticeable changes on injury, consistency spongy. GILLS adnate to sub-decurrent, close to crowded, four to five times inserted, width 5mm. or more, color same as pileus; texture fleshy. STEM 11.2cm. long, 2.5cm thick; equal, striate with dark hairs appressed in streaks; color golden yellow; substance fleshy fibrous. SPORES ochre, lemon-shaped, rough, 8.2u x 5.2u. CYSTIDIA none. ODOR mild. TASTE acrid.

Single. On root of an old cedar tree. Collected in Point Grey, Nov. 22nd. Infrequent.

U.B.C. Myc. Herb. No. 28.

(2) Flammula sp. ?.

Illustrations: Plate XXVII, Fig. 7, of this work.

PILEUS 1.5-2.5cm. broad, convex at first, becoming plane then cup- or bowl-shaped, scarcely infundibuliform; color clay color to tawny olive, becoming Saccardo's umber when old (R) glabrous, margin entire, becoming markedly striate in old specimens. FLESH creamy white, no noticeable changes on injury, spongy. GILLS adnate becoming emarginate, close to sub-distant, width 5mm., edge entire; cinnamon buff to clay color (R); texture fleshy. STEM 2-3.5cm. long, 4-5mm. thick, terete when young, compressed laterally when old; smooth, faintly striate; concolorous with pileus or lighter when dry; fibrous, tearing in longitudinal strips; hollow. SPORES ochre, pip-shaped, smooth, 8.7u x 5.0u. CYSTIDIA none. ODOR mild. TASTE mildly farinaceous.

Gregarious. On wood in soil. Collected in Grandview, Feb. 18th. Infrequent.

In this form the stem is confluent with the pileus and the trama is filamentous.

17. Inocybe. Fr.

Two species placed here tentatively.

A. Pileus up to 2cm. broad, stem at first annular; single or gregarious.....(1) I. (hystrix ?)

AA. Pileus 2-4cm. broad; stem not annular; densely caespitose..  
.....(2) I. (lacera ?)

(1) I. (hystrix ?).

Illustrations: Plate <sup>XXVII</sup>~~XVI~~, Fig. 1<sup>5</sup>, in this work.

PILEUS Wcm. broad, convex, wood brown to Natal brown (R), very scaly with more or less appressed scales, margin even, though in parts a web-like to membranous veil adheres. FLESH creamy white, no noticeable changes on injury, consistency spongy. GILLS sinuate-adnexed, close, width 3.5mm., narrowing towards outer edge, edge entire; color buffy ochraceous, fleshy. PARTIAL VEIL present, web-like to membranous. ANNULUS present in young specimens, left as scales of the veil, soon disappears. STEM 4cm. long, .5-.6cm. thick, equal, very scaly, scales more or less in rows around stem, scales markedly recurved; color of stem wood brown to buff (R); fleshy fibrous. SPORES smooth, ochre, 5.9 u x 3.9u. CYSTIDIA present, ventricose, 25.5u x 7.8u. ODOR mild.

Gregarious, In humus in woods. Collected on the campus, U.B.C., Dec. 10th. Infrequent.

U.B.C.Myc.Herb.No. 44.

(2) I. (lacera ?)

Illustrations : Plate <sup>XXVII</sup>~~XXV~~, Fig. 1+2<sup>4</sup>, in this work.

PILEUS 2-4cm. broad, convex becoming plane, edge pinkish buff, disc Saccardo's umber (R), surface slightly scaly with scales appressed except at edge; margin entire. FLESH white at first, becoming yellowish brown with a water-soaked appearance; no noticeable changes on injury; spongy. GILLS adnexed, close to crowded, three to four times inserted, width 5-6mm., almost equal, slightly narrower at outer edge, edge entire; color snuff brown to cinnamon brown (R), fleshy but fragile. PARTIAL VEIL membranous, remnants clinging to edge of pileus. ANNULUS none. STEM 3-6cm. long, 3-6mm. thick; equal or slightly swollen towards base; scaly, especially when young; color almost same as pileus; fibrous, with a cartilaginous rind. SPORES ochre, smooth, 5.9u x 3.6u. CYSTIDIA present, ventricose with a narrowed tip, rough, 31.9u x 17.4u. ODOR mild. TASTE a little like raw turnip.

Densely caespitose. On lawns. Collected on the U.B.C. boulevard, Nov. 16th. Common in the Fall.

U.B.C.Myc.Herb.No. 2.

18. Hebeloma Fr.

Only one species of this genus was collected.

Hebeloma colvini Pk.

Illustrations Plate XXIV, Fig. 5, of this work.

PILEUS 1.5cm. broad, convex, drab grayish brown,

smooth, margin entire. FLESH color same as pileus, no noticeable changes on injury, consistency spongy. GILLS free, close, broadly ventricose, width 5mm., edge entire; white at first, later yellowish brown, fleshy. STEM 7cm. long, 2mm. thick, equal except that it broadens slightly at base; surface smooth, shining; color dingy white; stuffed or solid. SPORES ochre, ovoid, smooth, 8.2u x 6.2u. CYSTIDIA very few. ODOR mild. TASTE rather pleasant.

Gregarious. In woods. Collected on the campus,

Dec. 3rd. Infrequent.

U.B.C. Myc. Herb. No. 41.

Only two specimens of this were collected, and in one of these the earth had stuck in a bulb at the base of the stem. In the other one there was no such bulb, but whether the stem had been broken or not could not be decided. The plant fits Kauffman's description of Hebeloma colvini fairly well, so it was placed there.

19. Naucoria Fr.

Two species of this genus were determined, and may be separated as follows:

A. Pileus up to 5mm. broad, habitat in moss on living trees....

.....(1) N. lignicola.

AA. Pileus 8-13mm. broad, habitat grassy roadsides.....

.....(2) N. semiorbicularis.

(1) N. lignicola Pk.

Illustrations: Plate XXVI, Fig 8, of this work.

PILEUS 4-5mm. broad, hemispherical becoming convex, tawny olive to Buckthorn brown (R), surface smooth, slightly glutinous when moist; margin somewhat scalloped in mature pilei. FLESH concolorous, no noticeable changes on injury, membranous, GILLS adnate, few, distant; ventricose, width 1mm., edge white pruinose; color same as pileus; fragile. STEM 7-15mm. long, .3-.5mm. thick, filiform, equal; pulverulent pruinose at top, rest glabrous; color like pileus and darker; fragile, cartilaginous. SPORES ochre, narrowed at one end, smooth,  $10.3\mu$  x  $6.9\mu$ . CYSTIDIA none. Sac-shaped cells along edge of gills are probably sterile cells. ODOR none. TASTE unpleasant, astringent, affects roof of mouth.

Gregarious. Amongst moss on living tree trunks. Collected in Stanley Park, Feb. 27th. Comparatively common.

U.B.C.Myc.Herb.No. 109.

(2) N. semiorbicularis Fr.

Illustrations: Plate XXVII, Fig. 6, of this work.

PILEUS 8-13mm. broad, hemispherical to conical, Buckthorn brown, with umbo and striae of Dresden brown (R); glabrous, slightly viscid when moist; margin at first incurved; later becoming crenulate, and striate to umbo. FLESH very thin, same color as pileus, fragile. GILLS adnate, seceding, sub-distant, ventricose, width 3mm., edge whitish pulverulent;

color same as pileus; fragile. STEM 3-6cm. long, 1-2mm. thick, equal, but swollen at base into spongy, mycelioid bulblet, surface minutely white pulverulent, color same as pileus; somewhat cartilaginous, though fibrous, hollow. SPORES ochre, ovoid, smooth, 11.2u x 5.3u. CYSTIDIA none. STERILE CELLS on edge of gills, capitate, ventricose, 30.4u x 7.3u. ODOR mild. TASTE slightly acrid.

Gregarious. Along ditch at edge of the road.

Collected near the campus, Feb.3rd.

U.B.C.Myc.Herb.No. 48.

20. Galera Fr.

Three species of Galera were found, one identified as G.tenera, the other two not fitting any of the descriptions on hand.

- A. Basidia 2-spored, no capitate sterile cells..<sup>(1)</sup>Galera sp.(118)
- AA.Basidia 4-spored, capitate sterile cells present.....
- B. Cystidia scattered on sides of gills..(2)G.tenera.
- BB.No cystidia on sides of gills.....(3) Galera sp.(124)

(1) Galera sp.

Illustrations: ~~XXVII~~ Fig. 2. , in this work.

PILEUS 5mm. broad, conic to campanulate, sayal brown (moist), cinnamon buff (R) when dry; striate, margin entire; FLESH creamy white, darkening on injury, consistency spongy. GILLS adnate to sinuate adnexed, once-inserted, distant; ventricose, 1mm. wide, surface and edge minutely pulverulent; color

same as pileus; fragile. STEM 3cm. long, 1.5mm. thick, equal, glabrous, pulverulent under pileus; concolorous; cartilaginous. SPORES ochre, ovoid elliptical, smooth. CYSTIDIA none. ODOR and TASTE none .

Gregarious. On moss-covered log. Collected near the campus, March 14th . Infrequent.

U.B.C.Myc.Herb.No.118.

This Galera does not seem to fit any of the Michigan species. Its 2-spored basidia are very noticeable, but cystidia or sterile cells are not readily seen. The cells which look like pointed sterile cells at the edge of the gill, are probably basidia in side view. It looks like the picture of G. spartea in Ricken, but it does not agree with his description of this form.

(2) G.tenera Fr.

Illustrations: Plate <sup>XXVIII</sup> XVI, Fig. 2, in this work.

PILEUS 5-12mm. broad, conical, Buckthorn brown (R), surface glabrous, slightly glutinous when moist; margin striate to umbo, scalloped in mature pileus. FLESH concolorous with pileus, becoming creamy white when dry; spongy, hygrophanous. GILLS adnate, seceding, sub-distant; ventricose, 2.5mm. wide, edge pulverulent; color same as pileus, texture fragile. STEM 4-6.5cm. long, 1-1.5mm. thick, filiform, equal or very slightly swollen at base; minutely pruinose, especially under cap; concolorous right under pileus to Vandyke brown or chestnut (R) at

base; cartilaginous. SPORES ochre, unequally elliptical, somewhat pip-shaped,  $8.7\mu \times 5.3\mu$ . CYSTIDIA on sides and edges of gills capitate in some cases, but not in all,  $60.9\mu \times 10.3\mu$ . ODOR fungoid. TASTE farinaceous.

Gregarious. On roadsides. Collected near the campus and in Stanley Park, Feb. 27th.

U.B.C.Myc.Herb.No. 108.

(3) Galera sp.

Illustrations: Plate XXVIII, Fig. 3, of this work.

PILEUS 10-16mm. broad, convex campanulate, Buckthorn brown (R), glabrous, striate, moist but scarcely glutinous, margin entire. FLESH concolorous, becoming creamy white on drying, hygrophanous. GILLS adnate seceding, rounded behind, sub-distant, twice inserted; broadly ventricose, 2-3mm. wide, edge entire; concolorous or lighter, fleshy. STEM 5-6cm. long, 1.5-3mm. thick, terete, slightly swollen at base; glabrous except for pruinosity at very top; concolorous; cartilaginous. SPORES ochre. CYSTIDIA none. STERILE CELLS on edge of gills capitate, but not very numerous. ODOR mild. TASTE slightly astringent.

Gregarious. In grassy places. Collected in Stanley Park, March 19th.

U.B.C.Myc.Herb.No. 124.

Another Galera-like form which was collected but which was not included in the key is described as follows;

PILEUS 5-10mm. broad, conical becoming umbonate or convex; tawny brown, surface smooth, margin entire. FLESH slightly lighter than pileus in color, no noticeable changes on injury, very thin. GILLS sinuate adnate, rather distant, twice inserted;  $1\frac{1}{4}$ mm. broad, narrowing slightly to outside, edge entire; color same as pileus; rather fragile. STEM 2-3.5 cm. long, 1-1.5mm. thick, equal, glabrous except for a slight pulverulence under the cap; color dark brown, lighter at top; fibrous. SPORES ochre, lemon-shaped, rough,  $6.4\mu \times 4.3\mu$ . CYSTIDIA none. ODOR mild. TASTE unpleasant.

Gregarious. Amongst bracken and grass, Collected along the boulevard on the campus, Nov. 3rd.

U.B.C.Myc.Herb.No.17.

GROUP III. SPORES PINK IN MASS.

No representatives of this group were collected.

GROUP IV. SPORES PURPLE-BROWN IN MASS.

21. Psalliota. Fr.

Three species were collected, to separate which the following key was made:

- A. Flesh becoming red on injury.....(1) P. haemorrhodaria.
- AA. Flesh not becoming red on injury.
  - B. Annulus double.....(2) P. placomyces.
  - BB. Annulus single.....(3) Psalliota sp.

(1) P. haemorrhodaria Fr.

Illustrations: Plate XXIX, Fig. 8, of this work.

PILEUS 5cm. broad, convex, vinaceous buff at edge, mottled with vinaceous drab (R); surface covered with brownish, appressed, fibrillose scales; margin slightly incurved. FLESH rosy white, becoming red on injury, consistency spongy. GILLS free, close to crowded, ventricose, width 5mm., edge entire; color vinaceous brown to sorghum brown (R), fleshy. PARTIAL VEIL remains on edge of pileus as thin line. ANNULUS present, moderately fleshy, pendulous. STEM 6.5 cm. long, 8mm. thick; equal to slightly narrower at base; surface slightly fibrillose scaly; color much like pileus; fleshy-fibrous, stuffed. SPORES dark brown, oval, smooth, 5.7u x 3.7u. CYSTIDIA none. STERILE CELLS on edge of gills infrequent, 38.7u x 9.8u. ODOR mild. TASTE mild, somewhat pleasant.

Solitary. In woods. Collected in the woods on the campus Dec. 3rd. Rare.

U.B.C. Myc. Herb. No. 38.

(2) P. placomyces Pk.

Illustrations: Plate XXIX, Fig. <sup>6</sup> 2, of this work.  
Hard, Mushrooms, 255-257, pp. 314-316.

PILEUS 9.5-16cm. broad, conical to sub-hemispherical, becoming plane, color brownish drab on edge, with disc and scales of Vandyke brown (R); surface covered with appressed fibrillose scales, margin entire. FLESH white, no change on injury, spongy. GILLS free, close to crowded, ventricose, up

to 14mm. wide, edge entire; pale pink at first, becoming dark brown and powdery with spores; texture fleshy. PARTIAL VEIL fleshy membranous. Annulus present, double. STEM 5-17cm. long, 5-18mm. thick, equal, surface somewhat striate with long appressed fibrils, color brownish drab (R), darker near gills, substance fleshy fibrous, stuffed. SPORES purple-brown, 6.4u x 3.0u.

CYSTIDIA none. ODOR and TASTE mild.

Gregarious. In the woods. Collected in the campus Dec. 9th.

U.B.C.Myc.Herb.No. 1.

(3) Psalliota sp.

Illustrations: Plate XXXI, Fig. 5, of this work.

PILEUS 7cm. broad, convex, white to brownish white, covered with very fine hairs lying close to pileus, margin entire, slightly inrolled. FLESH dingy white, no change when injured, spongy. GILLS free, crowded, ventricose, width 7mm., color chocolate brown, texture fleshy. PARTIAL VEIL present, rupturing close to margin of pileus. ANNULUS wide, flabby, single. STEM 9cm. long, 1.5cm. thick, swollen at base, surface flocculent, especially the lower part under the annulus; color white, brownish inside; fleshy fibrous. SPORES dark brown, ovoid elliptical, 6.4u x 4.4u. CYSTIDIA none. ODOR and TASTE mild.

Solitary. In the woods. Collected in Stanley Park, Oct. 26th.

U.B.C.Myc.Herb.No. 8.

22. Stropharia Fr.

Two forms were collected, and although rather different in appearance, one might pass for an older form of the other. Both seemed to agree with the description of S. albonitens pretty well. Both forms are described here.

(1) S. albonitens Fr. (young plants ?).

Illustrations: Plate <sup>xxx</sup><sub>xvii</sub>, Fig. 2., of this work.

PILEUS 3.2cm. broad, conic to sub-hemispherical, Tilleul buff with avellaneous disc (R), surface finely velvety, somewhat striate to umbo. FLESH dingy white, becoming darker, with a water-soaked appearance on injury, spongy. GILLS adnexed, close, ventricose, 5mm. wide, edge white, beaded with cystidia; color smoky grayish brown, fleshy. ANNULUS present, upper side bearing marks of gills. STEM 3cm. long, 6mm. thick, gradually swelling towards base, squamous above annulus, smooth and shining below; color dingy white, somewhat fibrous, especially the rind. SPORES purple-brown, smooth, oblong-elliptical, 9.3u x 4.5u. CYSTIDIA numerous, ventricose, 53.0 u x 11.9u. ODOR and TASTE mild.

Gregarious. In the woods. Collected on the campus Dec. 3rd. Infrequent.

U.B.C.Myc.Herb.No. 36.

(2) S. albonitens Fr. (older plant ?)

Illustrations: Plate <sup>xxx</sup>, Fig. 1, of this work.

PILEUS 6cm. broad, broadly umbonate or campanulate, .

color avellaneous (R), surface glabrous, faintly rugulose at edge with striae, margin striate. FLESH same color as pileus, becoming lighter on drying, hygrophanous. GILLS adnate to adnexed, close, thrice inserted; ventricose, width 7mm., edge minutely fimbriate, color light cinnamon drab to cinnamon drab (R), fleshy. ANNULUS delicate, hanging down against stem. STEM 8cm. long, 7mm. thick; terete, thicker towards base, surface floccose above annulus, faintly striate below, and shining; color creamy white; substance brittle, cartilaginous. SPORES purple-brown.

Single, in the woods. The small forms fit the species better than does the large one. Collected on campus, Mar. 31.

U.B.C. Myc. Herb. No. 129.

23. Hypholoma Fr.

Six species of this genera were recognized, and may be separated with the aid of this key:

- on young specimens  
A. Pileus viscid; veil very noticeable, white, floccose.....  
..... (1) H. capnoides.
- AA. Pileus not viscid; veil cobwebby, usually leaving only a brown line at edge of pileus.  
B. Gills and pileus with marked olivaceous shades.....  
..... (2) H. fasciculare.
- BB. Gills and pileus not as above.  
C. Spores rough..... (3) H. velutinum.  
CC. Spores smooth.  
D. Pileus decidedly hygrophanous; Buckthorn brown to

- Prout's brown (R).....(4) H. hydrophilum.
- DD. Pileus not hygrophanous; chamois to Saccardo's  
umber (R).....
- E. Pileus silky shining, chamois, (R).....  
.....(5) H. epixanthum.
- EE. Pileus dull; tawny olive to Saccardo's umber  
(R).....(6) H. sublateritium  
var. Schaefferi.

(1) H. capnoides Fr.

Illustrations: Plate  $\frac{XXIX}{XX}$ , Fig.  $\frac{7}{1}$ , of this work.

PILEUS 2.7-8cm. broad, convex to umbonate, becoming plane, cracknel yellow to golden brown, surface glutinous, very smooth when dry, margin even with remnants of white pendulous veil. FLESH white, becoming pale yellow when injured, cheesy. GILLS slightly decurrent, later sinuate adnexed; fairly close; narrowing to outer edge, width 3.5-5mm, edge serrate and wavy; color pale brownish gray at first to dark taupe; fleshy. STEM 9-15.5cm. long, 7-10mm. thick, very slightly swollen at base; surface covered with white downy scales when young, later smooth; white at first, becoming pale brownish; fleshy fibrous. SPORES purple brown, elliptical, 13.2u x 7.3u. CYSTIDIA present 33.8u x 11.5u. ODOR and TASTE like raw potato.

Gregarious and singly, in woods. Collected Oct. 28.  
on the campus.



Buckthorn brown to Prout's brown (R), becoming ochraceous when dry; surface very finely pulverulent, margin entire. FLESH Prout's brown (R), semi-transparent, firm, jelly-like, hygroph-anous. GILLS adnexed, close, ventricose, 2-4mm. wide; edge white, beaded; color smoky grayish brown, fleshy. PARTIAL VEIL distinct, cobweb-like. ANNULUS none. STEM 4-7cm. long, 3.5-5.5mm. thick, slightly swollen at base; surface smooth, & shining, base villose; color creamy brown, top in some colored dark brown with spores; fibrous rind, partly cartilaginous. SPORES purple brown, ovoid elliptical, smooth, 5.3u. x 3.2u. CYSTIDIA abundant, 37.0u x 11.0u. ODOR mild. TASTE farin-aceous.

Sub-caespitose. On bark of fallen tree, in woods.

Collected on the campus, Dec. 3rd. Infrequent.

U.B.C.Myc.Herb.No.37.

(5) H. epixanthum Fr.

Illustrations: Plate XXI, Fig. 2, of this work.  
" XXIX, " 9.

PILEUS 1.5-4cm. broad, convex, with the edge incurv-ed at first; color chamois in center, creamy buff at edge (R), edge silky shining; surface glabrous; margin entire, with rem-nants of veil forming a dark line along the edge. FLESH creamy white, thick on disc, becoming yellow on injury, spongy to cheesey consistency. GILLS adnexed, seceding, rounded behind, close, twice inserted, broad, 3-4mm. thick, edge entire; color creamy white becoming grayish brown; fleshy. PARTIAL VEIL fine,

whitish, membranous, soon becoming dark brown. ANNULUS none, though dark traces of the veil are left on the stem, they soon disappear. STEM 3-8cm. long, 2-7mm. thick; equal, somewhat striate with appressed hairs; color creamy buff on top, darkening to rusty tinge at base; tough-fibrous; hollow. SPORES purplish brown. CYSTIDIA none. ODOR and TASTE mild.

Caespitose. On wood. Collected on the campus and in Stanley Park, March. 23rd.

(6) H. sublateritium var. Schaefferi.

Illustrations: Plate XXXIX, Fig. 1, of this work.

PILEUS 1.5-5cm. broad, hemispherical, becoming broadly umbonate to plane; color cinnamon buff with umbo of tawny olive (R) when young, becoming Saccardo's umber (R) when mature; surface almost glabrous, some glutinous to almost viscid, edge faintly whitish downy pulverulent; margin entire, incurved at first, with brownish remnants of veil like a line along the edge. FLESH Saccardo's umber when moist, white when dry, darkening slightly on injury, hygrophanous. GILLS broadly adnate, sessile; close; bow-shaped, width 5mm., edge entire; color white at first, then grayish, becoming streaky with the spores; fleshy. PARTIAL VEIL finely web-like, small particles remaining on pileus. Annulus none. STEM 3-7.5cm. long, 3-5mm. thick, equal, smooth, slightly striate, twisted; white shining above, yellow to brown below; fleshy-fibrous, stuffed. ~~SPORES~~ purple brown. CYSTIDIA fairly abundant on sides and edges of gills, ventricose, some with blunt tips, others with a slender

beak-like structure on the tips. ODOR and TASTE mild.

Caespitose. On decaying wood or around old stumps. Collected in Stanley Park Feb. 6th. Common in the Spring.

U.B.C.Myc.Herb.No. 5.

The mild taste of this mushroom does not agree with McIlvaine's key if we put it in this species and variety. However, since we found *Panus stipticus*, (which is reputed to have a very astringent or peppery taste) with a rather mild taste, yet leaving no doubt as to its identity, the same has been done with this form, namely putting it where it seems to belong.

24. Psilocybe Fr.

One species.

Psilocybe subviscida Pk.

Illustrations: Plate <sup>XXIX</sup><sub>XXX</sub>, Fig. 1 <sup>4</sup>, of this work.

PILEUS 11-15 mm. broad, hemispherical, becoming broadly sub-umbonate, color Bay to Auburn (moist) cinnamon buff (R) (dry); surface striate when moist, slightly viscid, becoming glabrous and shining when dry; margin incurved at first. FLESH same color as pileus, hygrophanous. GILLS adnate with small decurrent tooth, seceding in some cases; close to sub-distant, twice-inserted; broad, almost rectangular, width 3mm., edge whitish, entire; color Bay brown (R), fleshy. STEM 3-3.5cm. long 1.5-2mm. thick, equal, pulverulent under gills, smooth and shining when dry; color same as pileus; cartilaginous. SPORES •

purple-brown. CYSTIDIA none. STERILE CELLS present. ODOR slightly unpleasant.

Gregarious. In grassy and mossy burned-over field. Collected on the campus March 30th. Common.

U.B.C.Myc.Herb.No. 127.

GROUP V. SPORES BLACK IN MASS.

25. Goprinus Pers.

One species.

C. comatus Fr.

Illustrations: Plate XXX, Fig. 5, of this work. Atkinson, Mushrooms, Fig. 31-38.

PILEUS 3cm. broad, cylindrical, color grayish white except tip which is brown and scaly; surface covered with scales, brownish, larger at tip; margin fimbriated. FLESH dingy white, spongy. GILLS free with age, crowded, width 7mm., gradually narrower towards edge; color white, becoming pink, then brownish black; fleshy. ANNULUS present, somewhat movable. STEM 10cm. long, 12mm. thick, swelling towards base; covered with soft, fibrillose scales; white, brownish gray at base; hollow, but stuffed with web-like material; fibrous. SPORES black, deliquesce when mature into inky mass, 10.0u x 6.6u. CYSTIDIA none. ODOR And TASTE mild.

Gregarious. In grassy places. Common in the Fall. Collected on the campus Nov. 8th.

U.B.C.Myc.Herb.No. 19.

26. Psathyrella Fr.

*Psathyrella* *eremata*.

Illustrations: Plate XXXIII, Fig. 1, in this work.  
" XXX " 3.

PILEUS 2-3.5 cm. broad, cylindric to conical, becoming campanulate with a recurving edge, brownish in center, grayish towards edge; surface striate, covered with very short hairs, margin even or slightly wavy when young, fimbriate when mature. FLESH thin, fragile, pale brown. GILLS adnate, close, lanceolate-ventricose, 2-5mm. wide, edge entire; color at first grayish white, later almost black; fragile-fleshy. STEM 6-10cm. long, 2-4mm. thick, equal, very slightly broader at base; surface smooth, finely granular at apex; white to pale straw color, fleshy-fibrous, hollow. SPORES black in mass, dark brown under microscope, ovoid-elliptical, 8.5u x 5.5u., smooth. CYSTIDIA none. ODOR and TASTE mild.

Caespitose. In humus in woods. Collected on the campus, Oct 29th.

U.B.C.Myc.Herb.No.10.

27. Panaeolus Fr.

One species, name not determined.

Illustrations: Plate XXXIII, Fig. 2., of this work.  
" XXX " 6.

PILEUS 4.5cm. broad, hemispherical, cinnamon brown to dresden brown (R), surface glabrous, polished, a little wrinkled in places, feels very satiny; margin entire, cuticle wrinkled. FLESH white, becoming yellow on injury, spongy. GILLS adnate, seceding, close, broadly ventricose, 10mm., edge

entire; black; fleshy. PARTIAL VEIL remaining in a few shreds attached to margin of pileus. Annulus none. STEM 8.5cm. long, 6-7mm. thick, swollen at base with whitish mycelium around it, smooth, shining, striate from imprint of gills at top; color chestnut brown (R); fleshy-fibrous, stuffed then hollow. SPORES black, very large, approximately  $30\frac{1}{2}$   $\times$   $35\mu$  long by 13-15 $\mu$  wide. (These measurements given from rough comparison of *Camera lucida* drawings). CYSTIDIA none. ODOR slightly unpleasant. TASTE slightly astringent.

Gregarious, sparsely. On manure heap. Collected on the campus, March.30th. Infrequent.

U.B.C.Myc.Herb.No. 126.

SUPPLEMENT.

CONTAINING A FEW MISCELLANEOUS FLESHY FORMS NOT IN THE  
AGARICACEAE.

A. Fruit body gelatinous.

B. Upper surface regular, convex to plane; solid; up to one  
cm. wide.....DITIOLA.

BB. Upper surface convoluted; fruit body becoming hollow....  
larger than one cm. wide.....DACRYOMYCES.

AA. Not gelatinous.

C. Hymenium inside fruit body.

D. Outer coat of fruit body splitting radially and turn-  
ing back like a star.....GEASTER.

DD. Outer coat not as above.

E. Fruit body like nest with eggs in it..NIDULARIA.

CRUCIBULUM etc.

EE. Fruit body spherical to pyriform, opening by a  
small hole at the top at maturity; inside full of  
brown hairs and spores when mature..LYCOPERDON etc.

CC. Hymenium outside fruit body.

F. Hymenium on upper side of fruit body.

G. Fruit body pileate.....CUDONIA

GG. Fruit body clavate to greatly branched..CLAVARIA.

FF. Hymenium on under side of fruit body.

H. Hymenium on outside of teeth.....HYDNUM.

HH. Hymenium lining narrow tubes.

I. Fruit body thick and fleshy.....BOLETUS.

II. Fruit body thin and leathery....POLYPORUS.

The following descriptions only, were recorded.

Cudonia ochroleuca.

Pl. xxxi Fig. 1.

Group: Ascomycetes.

Family: Geoglossaceae.

Fruit body definitely pileate, ochraceous tawny to tawny olive (R), 6-10mm. across; convex to plane or slightly uneven. Stalk whitish, 2-5mm. in diameter, swelling toward base. Whole plant somewhat gelatinous-fleshy. Odor mild. Spores filiform,  $15.7\mu \times 2.5\mu$ . Asci club-shaped.

Gregarious, on moss-covered log. Collected in Stanley Park, Feb. 13th. Infrequent.

Hydnum caput-ursi.

Pl. xii Fig. 2.

Pl. xxx Fig. 3.

Group: Basidiomycetes.

Family: Hydnaceae.

Color white throughout, length of teeth 6-8mm.

Polyporus fissus.

Pl. xxxi Fig. 2.

Group: Basidiomycetes.

Family: Polyporaceae.

PILEUS 2.5-7.5cm. broad, leathery, plane to somewhat funnel-shaped, snuff brown to (dark) chestnut (R), surface

smooth, closely radially striate, becoming wrinkled with age; margin entire, becoming wavy or split with age, fertile.

PORES Buckthorn to cinnamon brown (R), slightly angular, 4 or 5 to a mm., edge even, length about one half millimeter. STALK 4cm. long or less, about 2mm. thick, sub-central to lateral, almost black, tough, leathery.

Gregarious, on dead wood in mixed woods. Collected Stanley Park, Feb.6th.

ERRATA.

Plate XXIV Fig.5, *Hebeloma colvini* should be on ochre spored plate.

PLATE I.



Fig. 1. *Hygrophorus* sp.



Fig. 2. *Panus stipiticus* Fr.

PLATE II.

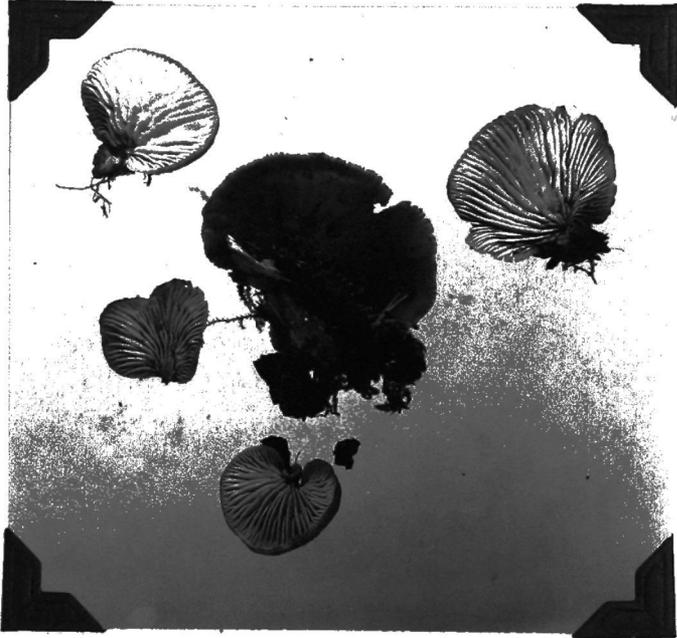


Fig 1. *Lentinus ursinus* Fr.-Bres.

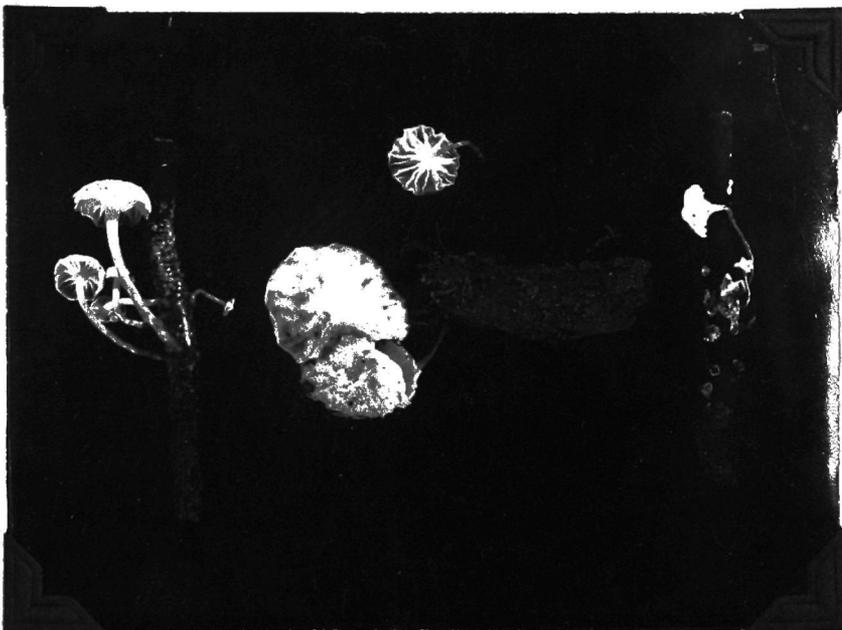


Fig 2. *Marasmius magnisporus* Murr.

PLATE III

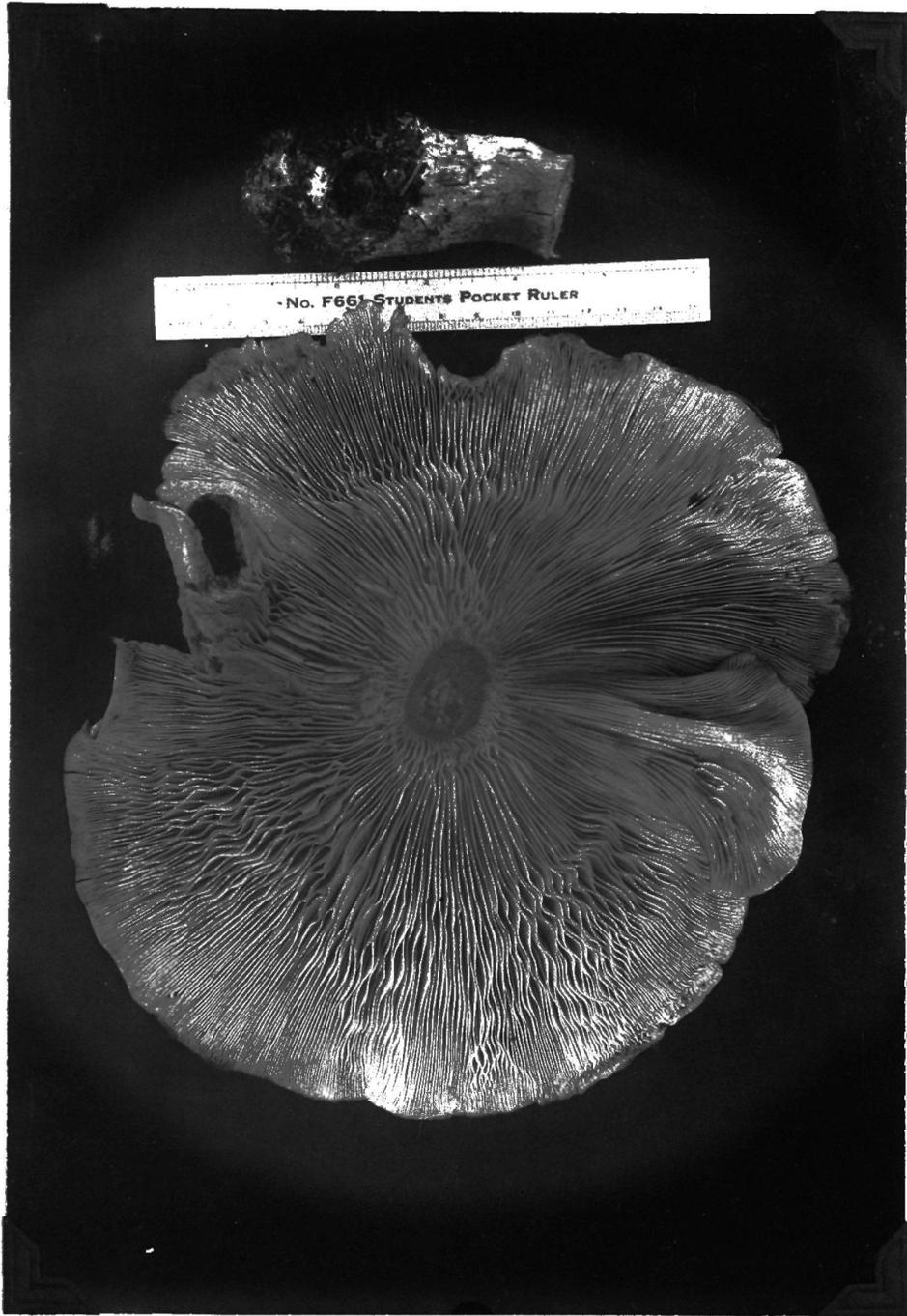


Fig. 1. *Russula veteriosa* Fr.



Fig 2. *Pleuratus serotinus* Fr.

PLATE IV.



*Clitocybe candida*. Bres.

PLATE V.

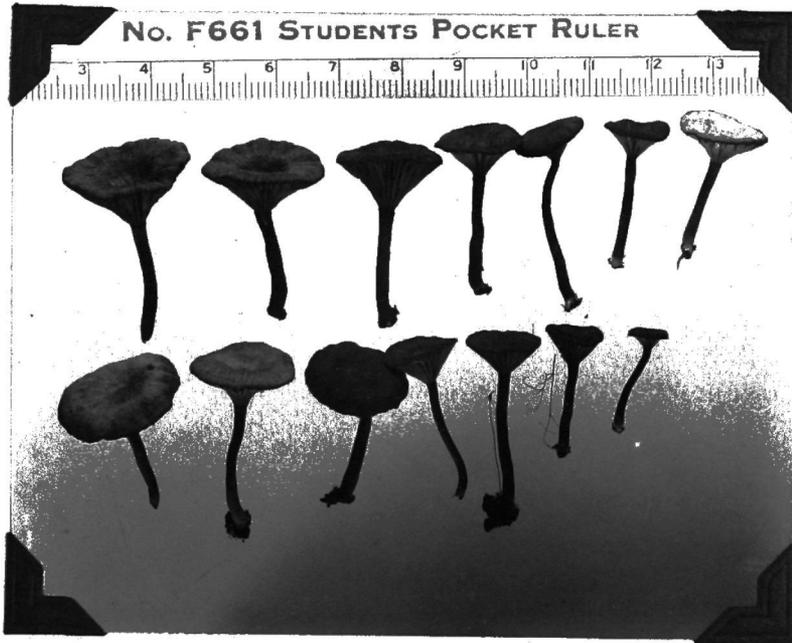


Fig 1. *Clitocybe* sp.



Fig. 2. *Clitocybe nebularis* Fr.

PLATE VI



Fig. 1. *Omphalia umbellifera* Linn.

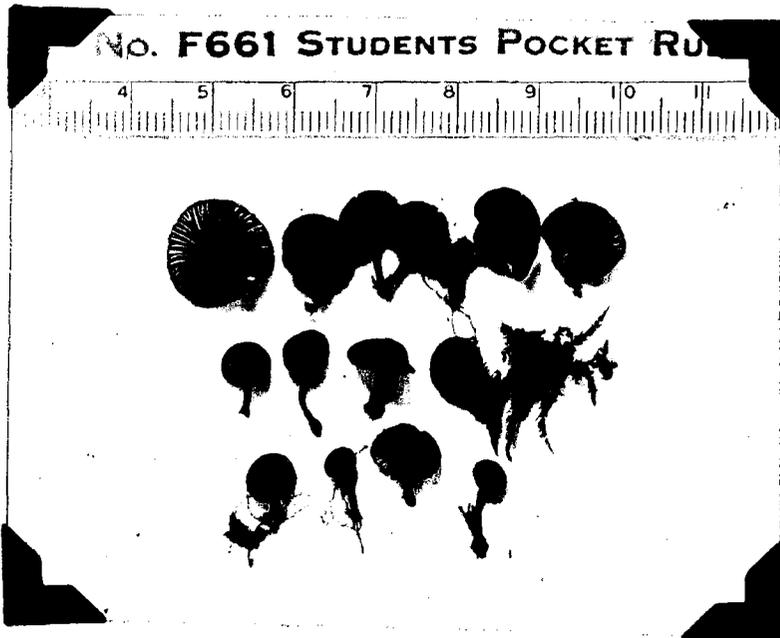


Fig. 2. *Omphalia (hepatica)* Batsch. ?

PLATE VII

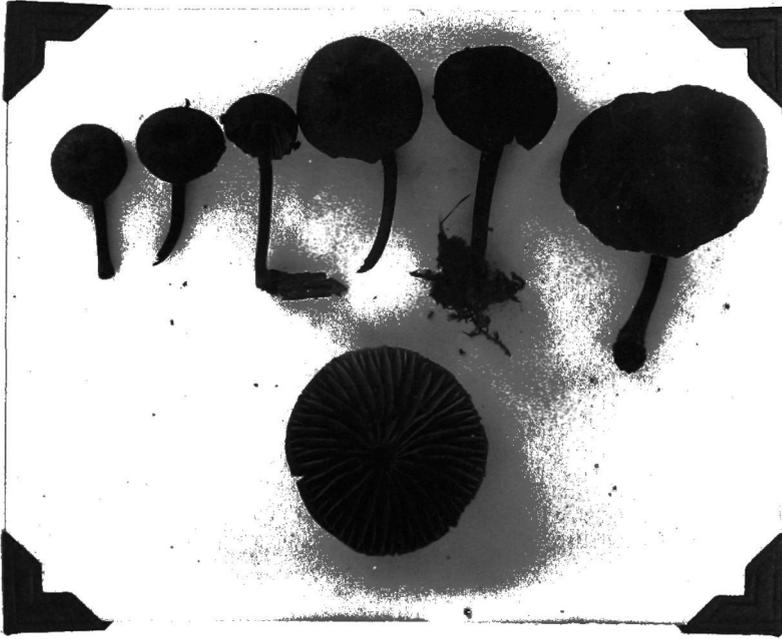


Fig. 1. *Omphalia* (*campanella* Fr.?)

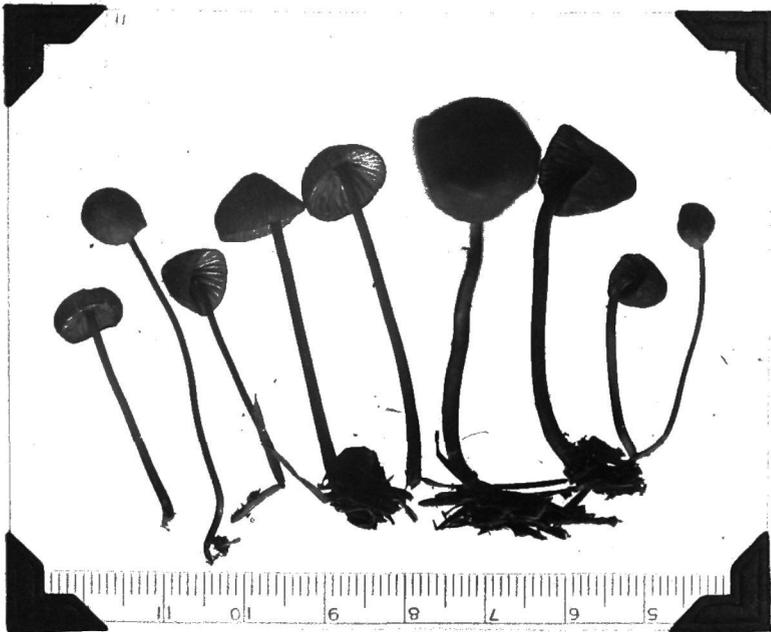


Fig. 2. *Mycena sanguinolenta* Fr.

PLATE VII



Fig.1. *Mycena minutula* Pk.



Fig.2. *Mycena galericulata* Fr.

PLATE IX

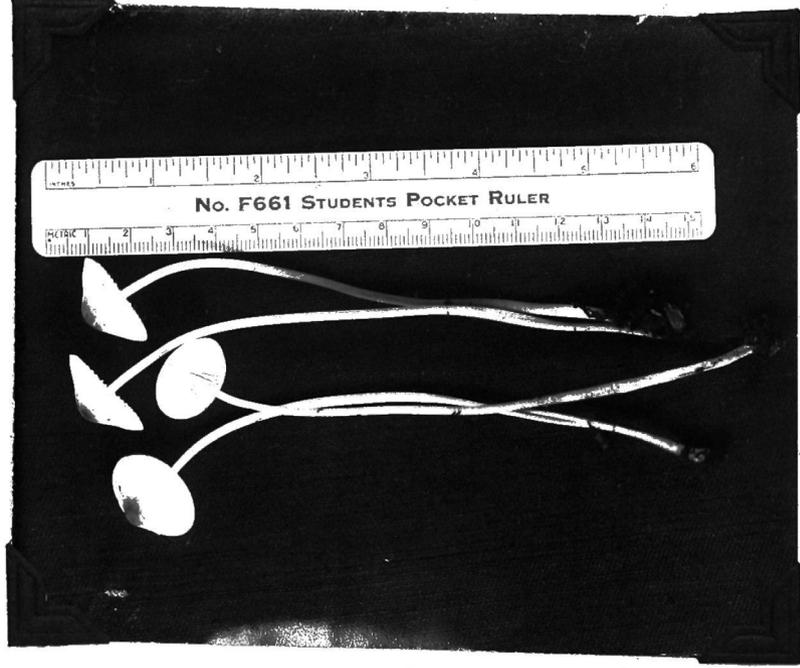


Fig. 1. *Mycena (polygramma) Fr. var. albida ?*

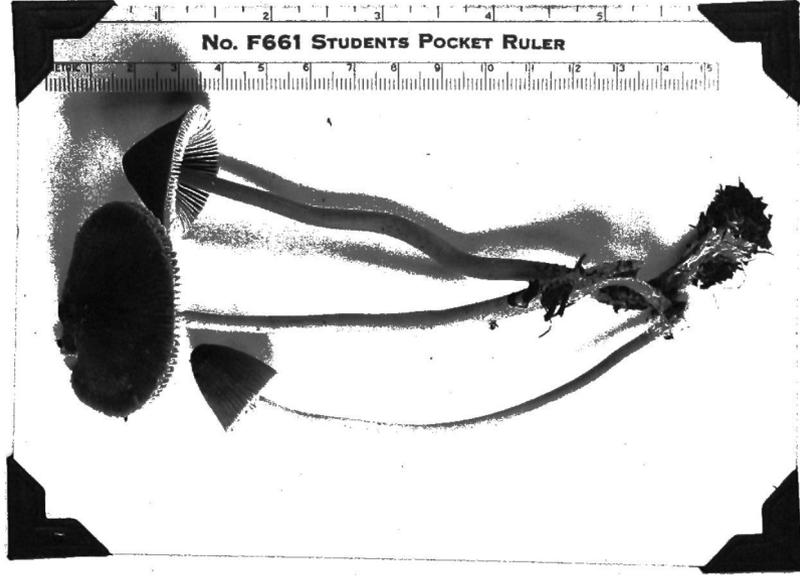


Fig. 2. *Mycena parabolica Fr.*

Fig. 2. *Mycena inclinata* Fr.

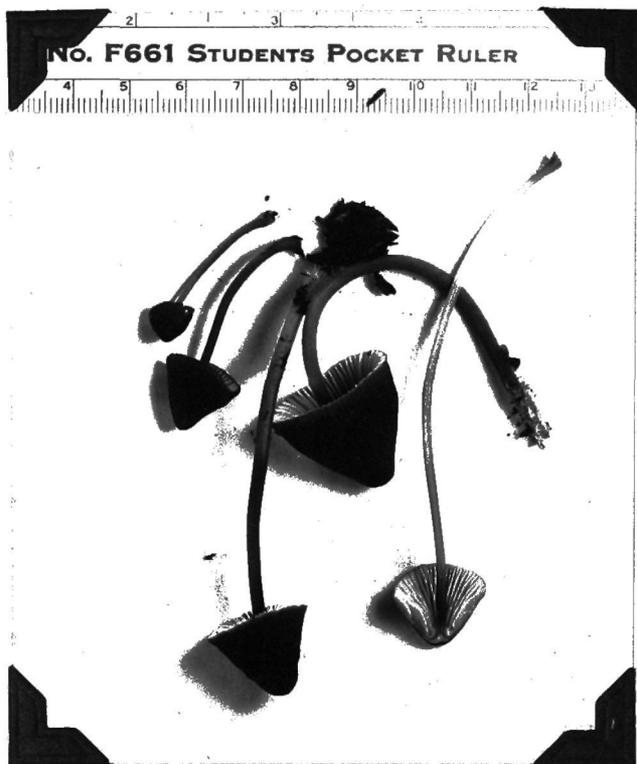


Fig. 1. *Mycena excisa* Fr.

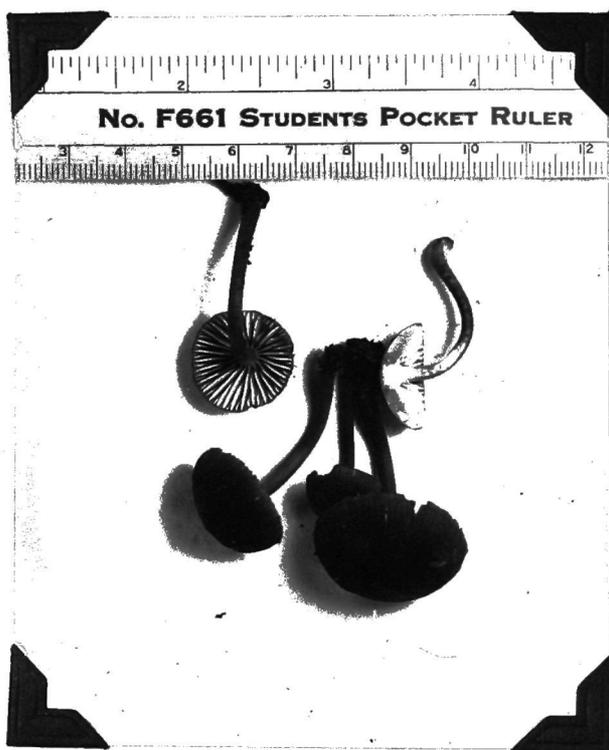


PLATE XI



Fig. 1. *Mycena* (metata Fr. ?)



Fig. 2. *Collybia* sp.

PLATE XII

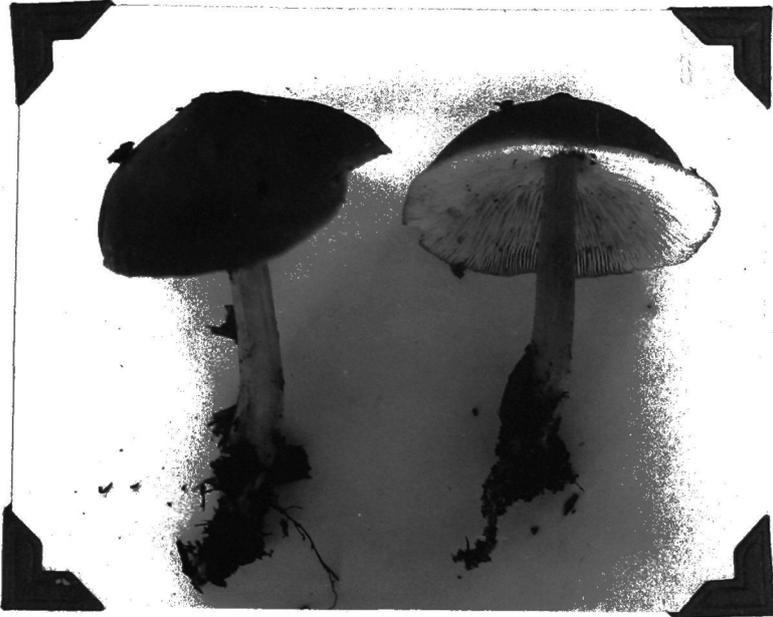


Fig. 1. *Collybia (confluens Pers.?)*



Fig. 2. *Hydnum caput-ursi*.

PLATE XIII



Fig. 1. *Cortinarius squarrosus* Clem.



Fig. 2. *Cortinarius* (*albviolaceus* Fr. ?)

PLATE XIV



Fig. 1. *Cortinarius*. sp.

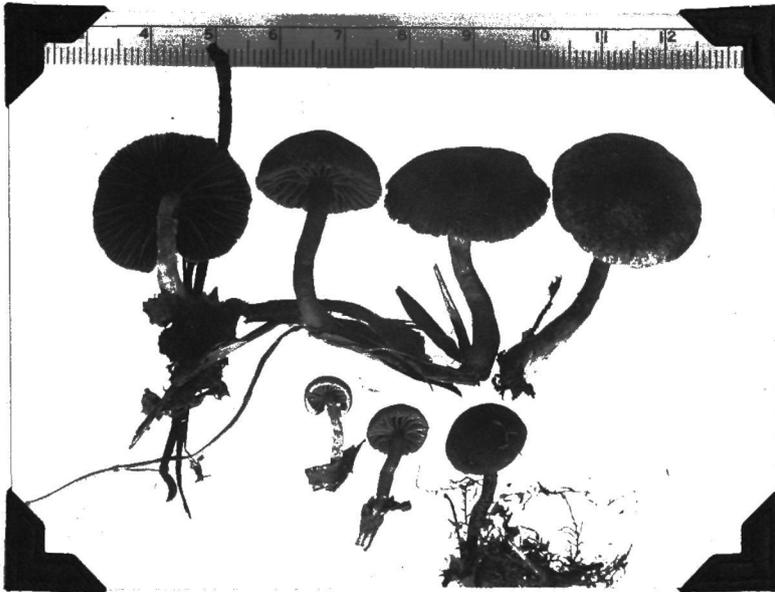


Fig. 2. *Cortinarius rigidus* (Scop) Ricker.

PLATE XV



Fig.1. *Inocybe* (*lacera* ?) Fr.



Fig.2. *Inocybe* (*lacera* ?) Fr.

PLATE XVI



Fig. 1. *Inocybe (hystrix Fr.?)*



Fig. 2. *Galera tenera Fr.*

PLATE XVII

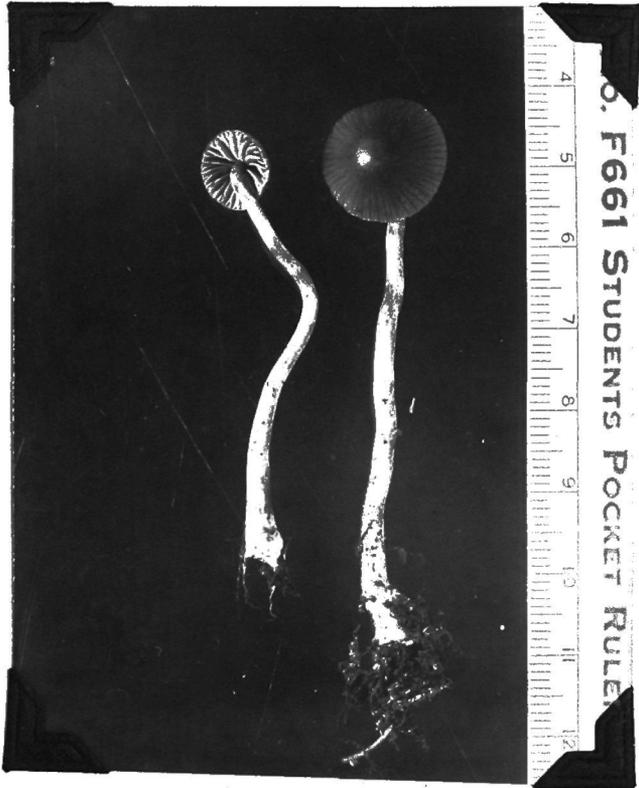


Fig. 1. *Galera* sp.



Fig. 2. *Psalliota placomyces* Pk.

PLATE XVIII



Fig. 1. *Stropharia albonitens* Fr.



Fig. 2. *Hypholoma fasciculare* Fr.

PLATE XIX



*Hypholoma capnoides* Fr.

PLATE XX



*Hypholoma caproides* Fr.

PLATE XXI



Fig 1. *Hypholoma hydrophilum* Fr.-Sacc.



Fig. 2. *Hypholoma epixanthum* Fr.

PLATE XXII



Fig. 1. *Psilocybe subviscida*. Pk.

PLATE XXIII



Fig. 1. *Psathyrella crenata* Fr.



Fig. 2. *Panaeolus* sp.

PLATE XXIV

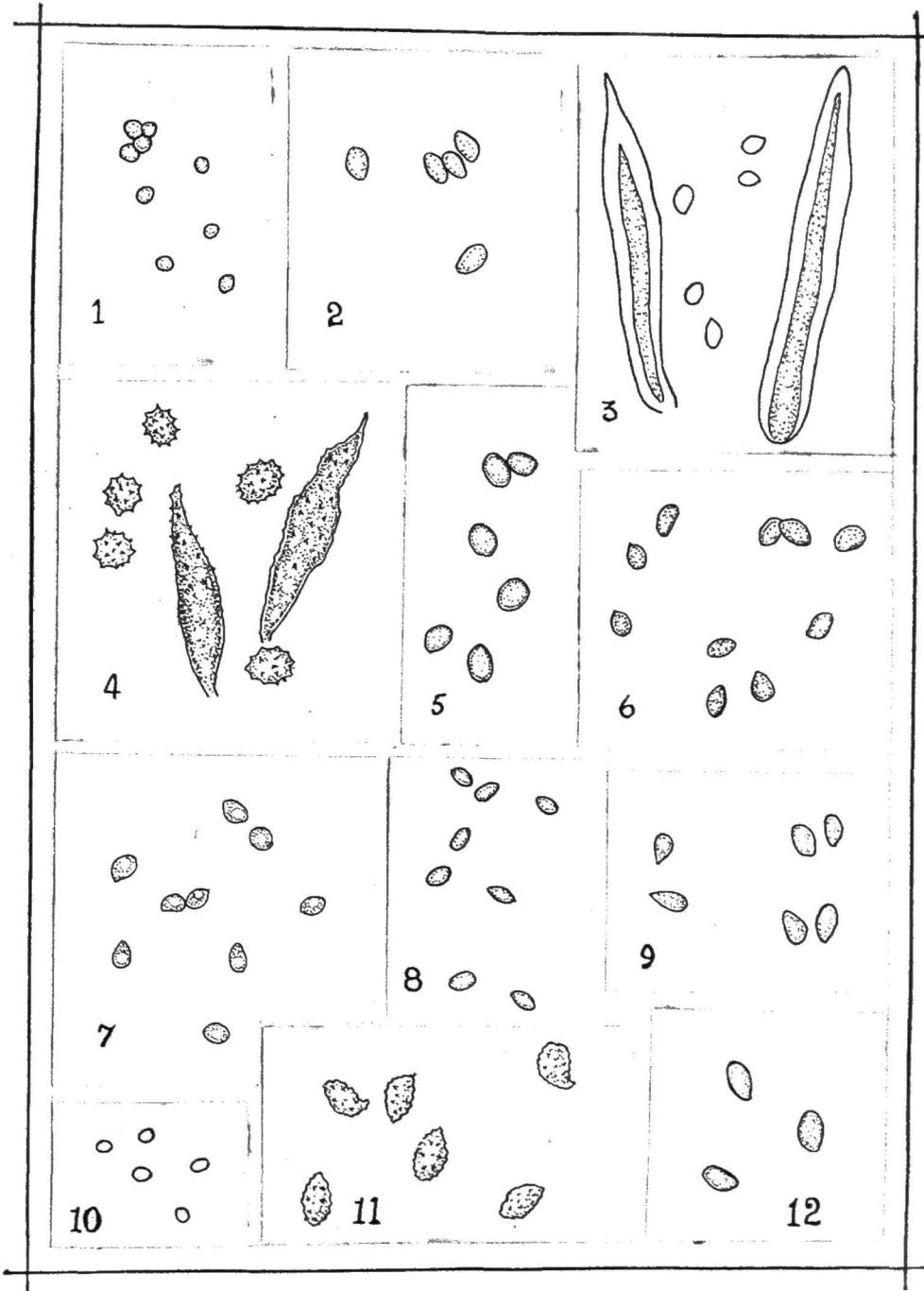


Fig.1. *Collybia confluens*, spores. Fig.2. *Collybia* sp. spores.  
 Fig.3. *Panus angustatus*, spores and cystidia. Fig.4. *Russula  
 veternosa*, spores and cystidia. Fig.5. *Heboloma colvini*, spores.  
 Fig.6. *Lepiota* sp., spores. Fig.7. *Lentinus ursinus* (type 1) spores.  
 Fig.8. *Omphalia* (hepatica?). Fig.9. *Hygrophorus* sp., spores. Fig.10.  
*Lentinus ursinus* (type 2) spores. Fig.11. *Tricholoma* (ionides?) Fig.12.  
*Marasmius magnisporus*, spores.

Camera lucida drawings, x 700.

PLATE XXXV

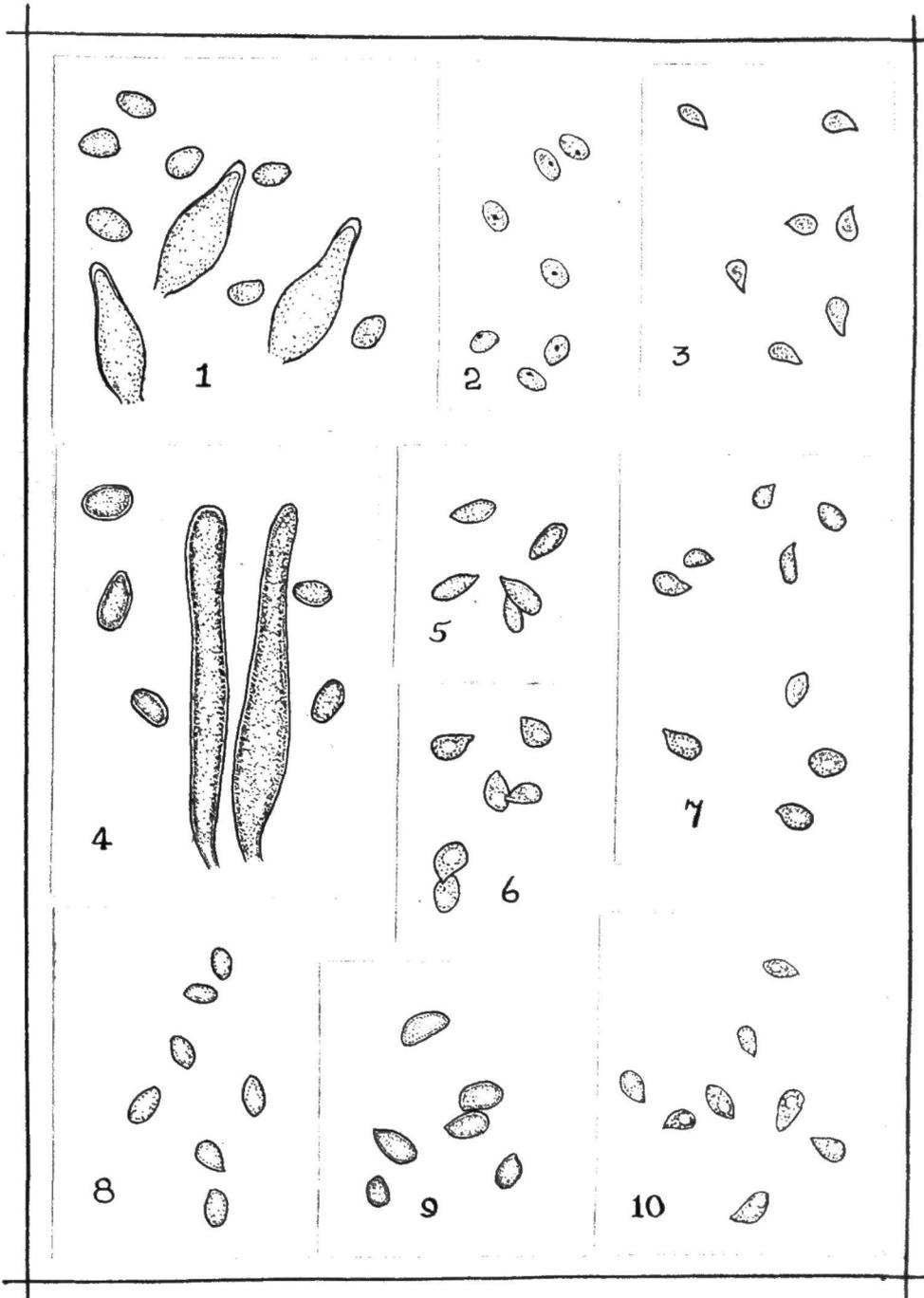


Fig. 1. *Mycena alcalina*, spores and sterile cells. Fig. 2. *Mycena inclinata*, spores. Fig. 3. *Mycena leptocephalo*, spores. Fig. 4. *Mycena excisa*, spores and cystidia. Fig. 5. *Mycena minutula*, spores. Fig. 6. *Mycena galericulata*, spores. Fig. 7. *Mycena* sp. spores. Fig. 8. *Mycena* (*polygramma* var. *albida*?) spores. Fig. 9. *Mycena atroalba*, spores. Fig. 10. *Mycena ammoniaca*, spores.

Camera lucida drawings x700.

PLATE XXVI



Fig. 1. *Mycena sanguinolenta*, spores and cystidia. Fig. 2. *M. parabolica*, spores and sterile cells. Fig. 3. *Clitocybe candida*, spores. Fig. 4. *Clitocybe* species (101). Fig. 5. *C. inversa*, spores. Fig. 6. *C. nebularis*, spores. Fig. 7. *Clitocybe* sp. (22), spores. Fig. 8. *Clitocybe* sp. (102), spores. Fig. 9. *C. <sup>pithyophila</sup> inversa*, spores.

Camera lucida drawings, x 700.

PLATE XXVII

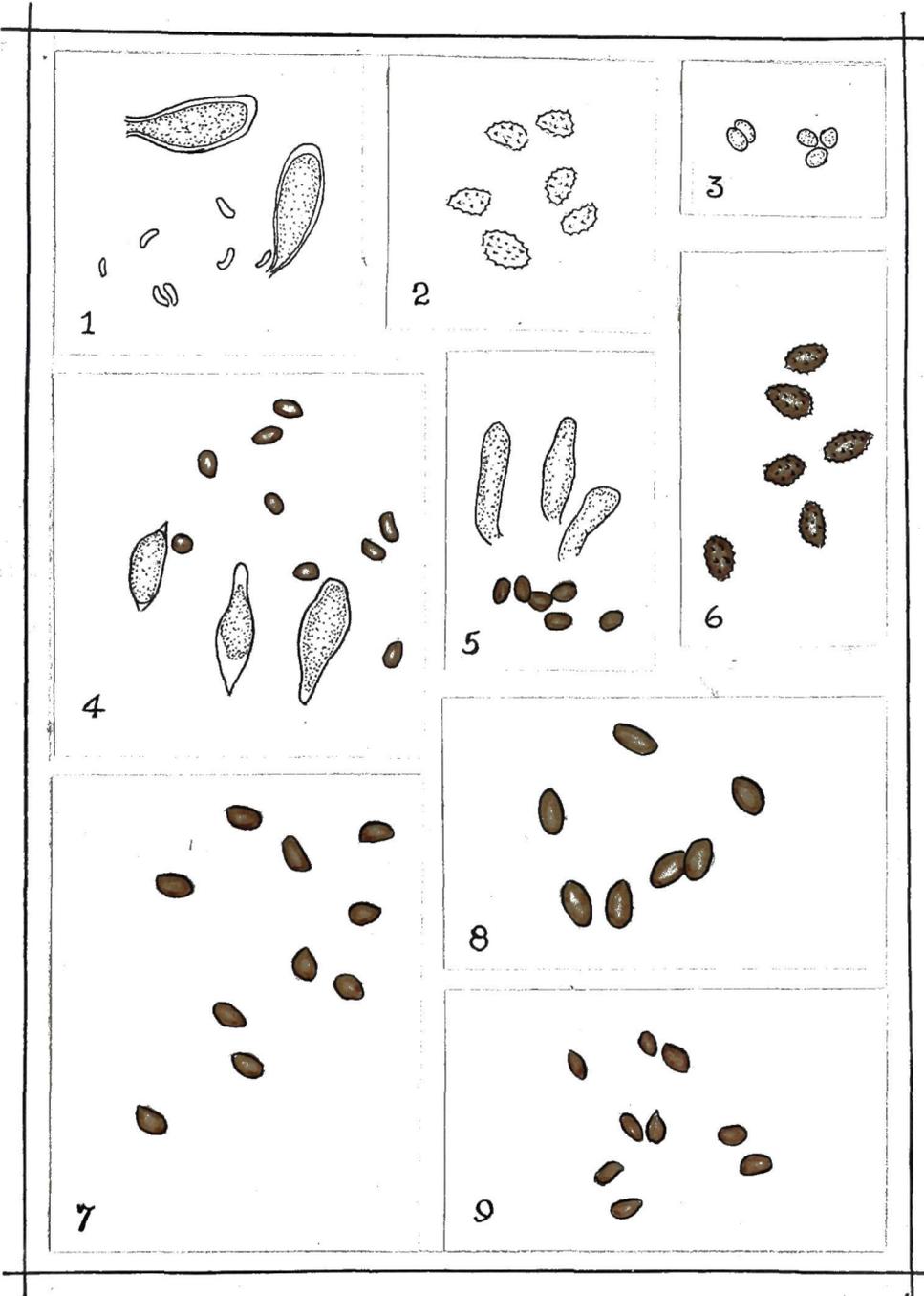


Fig.1. *Pleurotus serotinus*, spores and cystidia. Fig. 2. *Omphalia (campanella?)*. Fig. 3. *Schizophyllum commune*, spores. Fig. 4. *Inocybe (lacera?)* spores and cystidia. Fig. 5. *I. hystrix*, spores and cystidia. Fig. 6. *Flammula echinulisporus*, spores. Fig. 7. (*Flammula ? sp. (105)*) spores. Fig. 8. *Nauconia (lignicola?)* spores. Fig. 9. (*Galera ? sp. (17)*)

Camera lucida drawings. x 700.

PLATE XXVIII

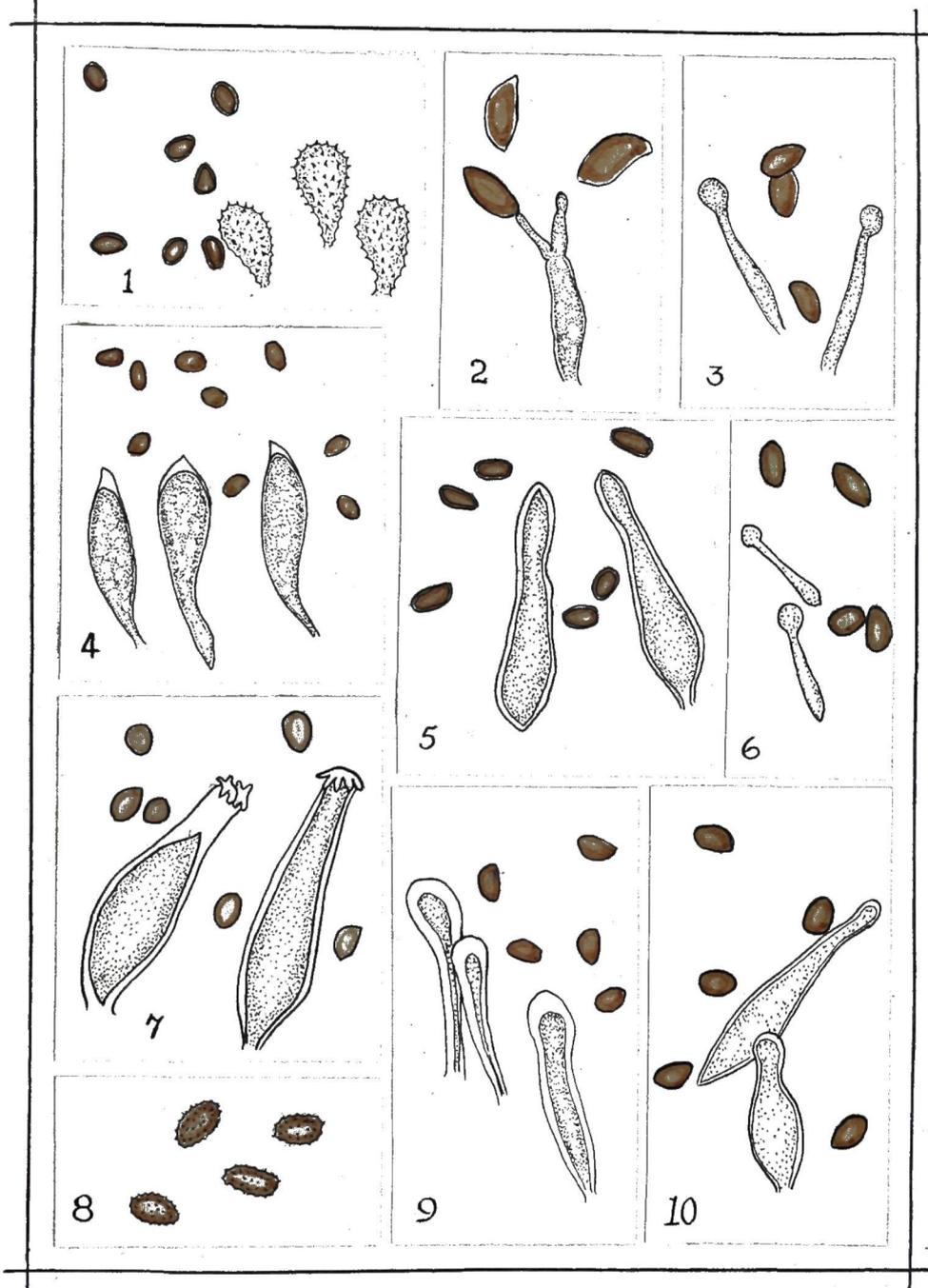


Fig 1. *Cortinarius squarrosus*, spores and cystidia. Fig. 2. *Galera* sp. (118), two-spored basidium, and spores. Fig 3. *Galera* sp. (124) spores and sterile cells. Fig. 4. *Cortinarius* sp. (117) spores and cystidia. Fig. 5. *Paxillus involutus*, spores and cystidia. Fig. 6. *Naucoria semiorbicularis*, spores and sterile cells. Fig. 7. *Cortinarius alboviolaceus*, spores and cystidia. Fig. 8. *Cortinarius* sp. (7), spores. Fig. 9. *C. rigidus*, spores and sterile cells. Fig. 10. *Galera tenera*, spores and sterile cells.

Camera lucida drawings.

x 700.

PLATE XXIX

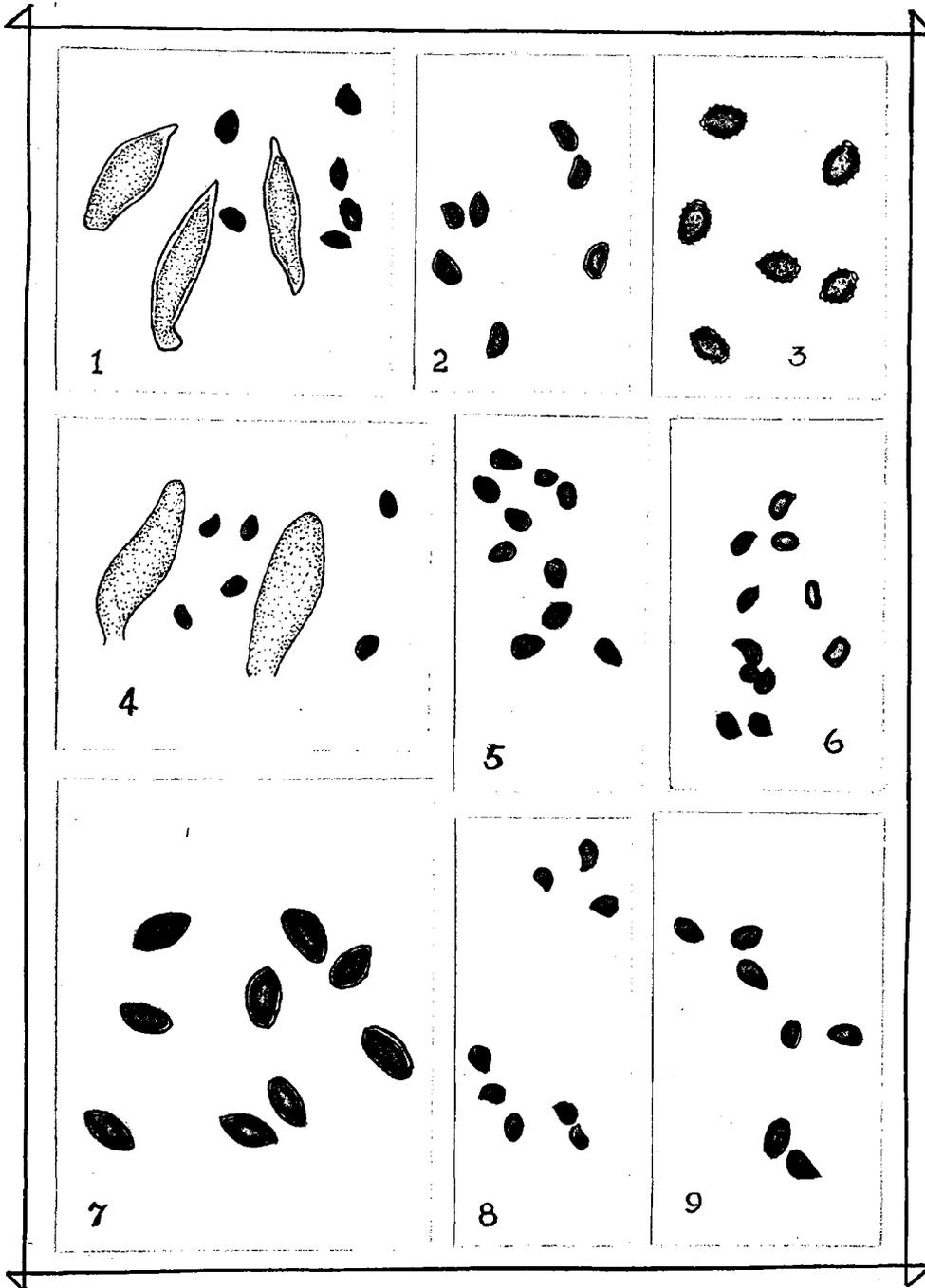


Fig. 1. *Hypholoma sublateritium* var. *Schaefferi*, spores and cystidia. Fig. 2. *H. fasciculare*, spores. Fig. 3. *H. velutinum*, spores. Fig. 4. *H. hydrophilum*, spores and cystidia. Fig. 5. *Psalliota* sp. (8), spores. Fig. 6. *Psalliota placomyces*, spores. Fig. 7. *Hypholoma capnoides*, spores. Fig. 8. *Psalliota haemorrhodaria*, spores. Fig. 9. *Hypholoma epixanthum*, spores.

Camera lucida drawings. X700.

PLATE XXX

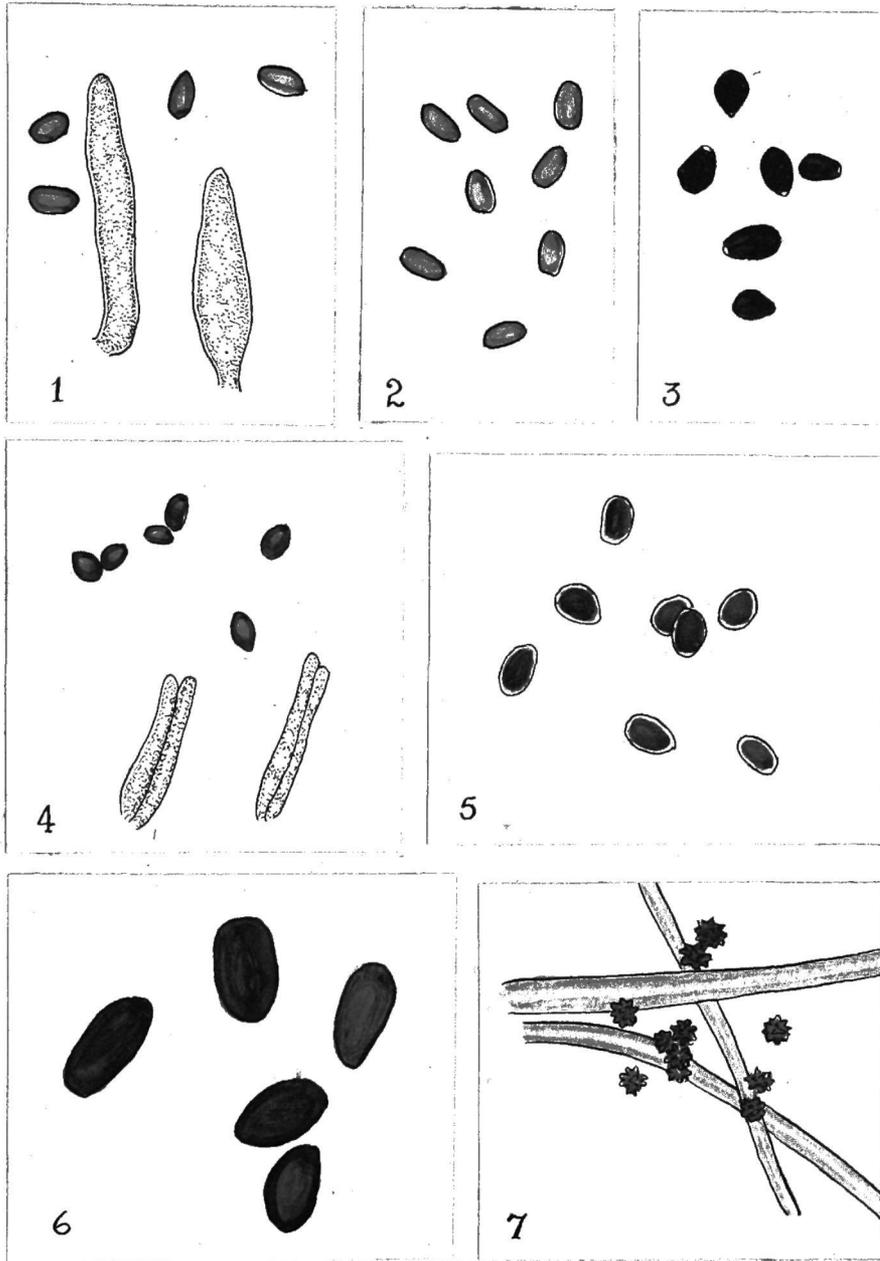


Fig. 1. *Stropharia* sp. (129), spores and cystidia. Fig. 2. *S. albo-nitens*, spores. Fig. 3. *Psathyrella crenata*, spores. Fig. 4. *Psilocybe subbriscida*, spores and sterile cells present. Fig. 5. *Coprinus comatus*, spores. Fig. 6. *Panaeolus* sp., spores. Fig. 7. *Geaster* sp., spores and capillitium threads.

Camera lucida drawings, x 700.

PLATE XXXI

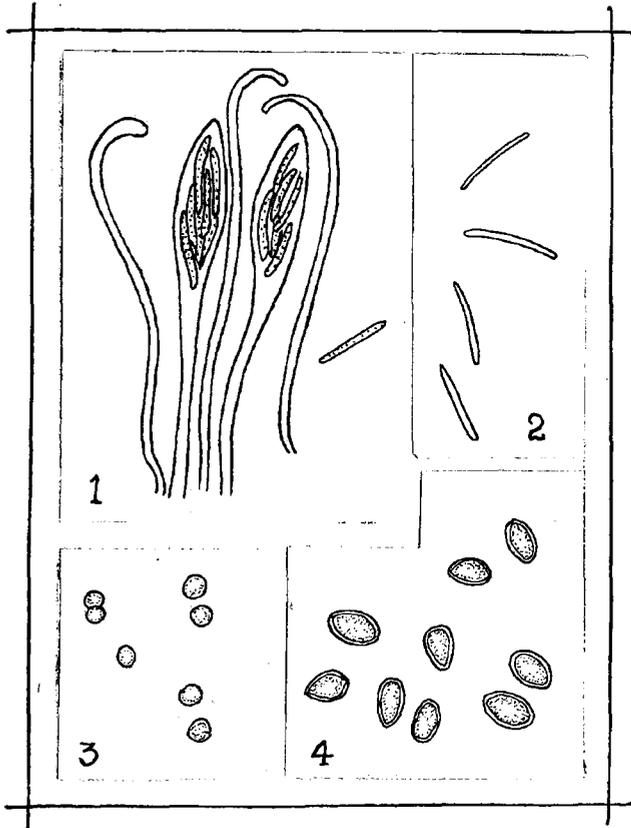


Fig. 1. *Cudonia ochroleuca*, asci, paraphyses, and spores. Fig. 2. *Polyporus fissus*, spores. Fig. 3. *Hydnum caput-ursi*, spores. Fig. 4. *Crucibulum*, sp., spores.  
Camera lucida drawings,  
x 700.

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