MYCOLOGICAL NOTES.

BY G. G. LLOYD.

CINCINNATI, O. FEBRUARY, 1899.

15—THE SMALL VOLVARIAS.

Since the appearance of the "Volvae" we have received alcoholic specimens through the kindness of E. Bartholomew of the plant from which the description of V. striatula was drawn. It is entirely different from the little plant we have around Cincinnati, and which we had thought was the one covered by the description. We therefore have four at least (not three as stated in the Volvae) small species of Volvaria growing in the ground, which from our present knowledge of them we would class as follows:

16—VOLVARIA PUBESCENTIPES,

A small plant about 2½–4 cm. high, distinguished by the spreading hairs on the stipe. (Vide "Volvae" p. 11 and 17.) Evidently very close to V. plumulosa now considered in Europe a hairy form of parvula, (vide Pat. Tab. No. 333.)

17—VOLVARIA STRIATULA.

About the same size as the preceding and resembling most European plates of parvula in shape and size, but distinguished from the plates in being striate. (vide "Volvae" p. 11 and 16.)

18—VOLVARIA PUSILLA.

Pileus explanate, white, fibrillose, dry, striate, center slightly depressed when mature. Gills white, becoming flesh color, free, distant. Stipe white, glabrous. Volva split to the base into four, nearly equal, segments. Spores broadly elliptical (almost globose,) 5-6 mc.

This is our **very smallest** species not more than one-third the size of our other "small" species and rarely over a cm. high. It grows on the ground usually among weeds, and requires close hunting to find it. We have met it several seasons. The volva almost equally four parted to the base resembles the petals of a cruciferous flower. We adopt Persoon's name believing it is his species, and well named, and we think Fries is in error in refering Persoon's plant to parvula. Cooke's plate of V. temperata and Cordier's plate of V. parvula we take for the same thing, and having no good photograph of the plant from nature we reproduced Cordier's drawing which is an exact picture, size, shape, volva and all particulars of the plant as we find it.

19—VOLVARIA UMBONATA.

Pileus white, campanulate, at length plane, when moist slightly viscid, but silky and not viscid when dry, *strongly striate* to the umbo, furnished with a *decided prominent umbo.* Gills free, remote from the stipe. Stipe *solid,* smooth, white, slightly thickened below, (flesh white.) Volva white, irregularly split into segments. Spores varying in size, 5-7 mc. broadly elliptical or globose.

The plant usually grows in lawns. We have met it two seasons. Stipe 5-6 cm. high, 4 mm. thick. Pileus 3 cm. broad. It is about the same size as parvula and we were inclined to refer it to that species, especially as Fries underscores *umbonate* as a character. But it seems clearly distinct in its *solid* stem. Prof. Peck to whom we sent photograph, notes and dried specimens, considers it undescribed and we adopt the name he suggests for it.

20—A STANDARD OF COLORS.

There has recently been issued a little book that will find frequent use by every student in natural history, namely, the Prang's Standard of Colors, published by Louis Prang, Boston, Mass. We advise every one who is engaged in the study of the fungi to send 50 cts., to the publishers for this work. It contains plates showing 1176 distinct shades of color, arranged in a scientific series by a color expert, and on scientific principles. It is almost impossible to find a color in nature that cannot be very closely matched in the work.

We admit that there is no other one single subject that has caused us so much trouble in the study of mycology as the determination of colors. Not that we are color blind, but that we do not know the colors. In fact, there is no subject on which we feel there is so much general lack of knowledge as that of colors. If you do not believe it, take an agaric to three or four people, ask them what color it is, and you will find that hardly two of them will give it the same name. The general terms such as red, brown, etc., used in describing agarics do not convey any distinct idea.

We can now cite colors with the knowledge that we can convey the same to anyone else who is studying the subject by citing them according to the system in this Standard of Colors. It would seem to us that Prang could have adopted a better system of nomenclature, giving a distinct name to each shade of color illustrated, which name would convey an impression of the color better than the present citation. For instance "20Y03" is simply a formula conveying an accurate

knowledge in relation with the Standard, but conveying no idea whatever in the absence of the same. In future, colors will be cited by us in keeping with the system adopted in Prang's Standard.

21—SHORT NOTES.

Dr. Geo. E. Francis, of Massachusetts, reports the finding of the rare Amanita russuloides abundantly in September, 1897, also adnata, a species which heretofore had not been very satisfactorily reported.

Sarah B. Fay, Conn., also described a species she has met which we take to be adnata. She also records strangulata abundant in July, 1897.

Prof. Dearness records Volvaria gloiocephala from Canada. I am obliged to Prof. Dearness for correcting an error in the pamphlet, viz. Volvaria Loveiana was found on Clitocybe nebularis, not monadelpha as stated.

Capt. McIlvaine has called my attention to another mistake. Amanita "sperta" on page 3, should be Amanita spreta.

C. F. Wheeler, sends photograph of Lepiota Morgani, which he has found at several stations in Michigan, thus extending the range of this species.

Hollis Webster and Geo. B. Fessenden have sent specimens of what we take to be true Lepiota rachodes, Vitt. and Prof. Bresadola confirms the determination. We hope to receive fresh specimens of this next season, so that we can photograph and describe it in these "Notes." The species has been much confused with others.

Our edition (1000) of the "Volvæ" have all been distributed. We regret being unable to supply the frequent requests for the pamphlet.

22—CALVATIA AUREA.

IMMATURE PLANT.

Peridium compressed globose, the upper surface even, underside prominently and irregularly wrinkled. Cortex light brown, thin, minutely tomentose, cracked into small areolæ. Root white, cord-like, branched. Subgleba about as thick as the capillitium, white but *quickly turning* golden yellow when cut. Young capillitium white, turning yellow when bruised and in maturing.

In cutting an immature specimen the subgleba *quickly* turns yellow, the capillitium remaining white except when bruised by the knife. In drying it slowly turns yellow.

MATURE PLANT.

Peridium thin, breaking up and falling off. Capillitium dark olivaceous, subgleba much lighter, leather color. Spores globose, 4mc. smooth, short pedicellate. Threads long, branching, slightly thicker than the spores.

This plant I first found in 1896 in a garden at Pleasant Ridge, O. Additional specimens were brought in August, 1898, by Henry J. Koch, which grew in a hot house at Walnut Hills, O., and which agreed in every particular with the specimens I had found. It differs much in shape from C. rubroflava, Cragin, the only *yellow* species heretofore described and there is no suggestion of "red" in our plant. Lycoperdon xanthospermum, Berk, described from India, we judge is not a Calvatia.

23—THE GENUS PLUTEUS.

(OF CINCINNATI.)

We have collected ten species and varieties of Pluteus in the vicinity of Cincinnati, of which three are common, viz: cervinus, longistriatus, and admirabilis and the others rare, having been met only a few times and most of them only once. In addition Berkeley determined chrysophæus from this locality on dried specimens sent by Lea and Prof. Morgan determined leoninus. As neither author mentions admirabilis the only and common *yellow* species which we find here, we presume all determinations were made on the same plants. Prof. Morgan also notes two species phlebophorus and creatophyllus which we have never met.

The students of the genus will find the following characters assist in distinguishing the species.

Fries divides the genus into three divisions:

1st. Cuticle of the pileus fibrillose or sometime pubescent or tomentose. Here we would place cervinus (and its varieties,) granularis, longistriatus, tomentosulus,

2nd. Pileus pruinate with atoms–nanus and tortus (granularis notwithstanding its name does not belong in this section, if we have correctly determined it.)

3rd. Pileus smooth–umbonatus, and admirabilis.

The following points also should be observed, our notes of course, refer only to the species we have met.

Color. Most of the species are fuliginous, cinereous or umber, varying to quite light shades, one admirabilis, is yellow.

Striation. Prominent striations are characteristic of two species, longistriatus and umbonatus; tortus, nanus and admirabilis are sometimes faintly striate; granularis, tomentosulus and cervinus are not striate.

Rugulose pilei; the character of the pileus being rugulose (well shown in our photographs of nanus and granularis,) is a feature rather rare among agarics in general. It is marked in granularis, nanus, tortus and admirabilis, though the absence of the feature is not of importance as it seems to depend largely on moisture and conditions of growth and frequently we find specimens even.

Stipe; solid in all species save admirabilis which has hollow stipe; smooth or fibrillose in all species excepting, granularis with velvety stipe, and tomentosulus somewhat pubescent; tortus has a conspicuously twisted stipe, (see photograph.)

Habitat; admirabilis, granularis and longistriatus grow on logs; cervinus both on logs and in the ground, usually the latter; the remainder of the species grew in the ground. Peck gives the habitat of tomentosulus and nanus "decaying wood" The only specimens we ever met grew in the ground.

Spores; the spores do not afford any good character to distinguish the species we have met, as in all they are globose or almost globose and about 5 mc. in diameter.

24—PLUTEUS CERVINUS.

Pileus fleshy, convex then expanded, obtuse, even, glabrous, but appearing fibrillose, the cuticle at first continuous and sometimes slightly viscid. Gills free, white then flesh colored. Stipe stout, solid, fibrillose or smooth. Spores subglobose, 5–6 mc.

This is the most frequent species we have, not only at Cincinnati, but it seems to be common in most localities. Its usual color is cinereous or grayish or blackish brown. We have pure white specimens (var. alba, Pk.) in our collection from Prof. Burt, but the white form does not occur with us. Usually the specimens are more even and expanded than the photograph we distribute, which corresponds closely to the form called eximius in Europe. Slugs are fond of this species and it can be seen that a slug has eaten the cuticle of the specimen photographed. Fries' description (usually followed) describes the cuticle as afterwards broken into fibrils or scales, but that does not accord to our observations. The appearance of the cuticle is very deceptive. It seems to be fibrillose to the eye, but under a glass distinct fibers cannot be made out. In Europe the plant is stated to grow on logs and stumps. With us, while it so occurs, we most frequently find it in loose soil in the woods.

25—PLUTEUS CERVINUS, (SCALY FORM.)

Notwithstanding the usual description of pileus, "afterwards broken into fibrils and scales" we have only met this condition once which we thought was so unusual as to merit a photograph.

26—PLUTEUS CERVINUS, VAR VISCOSUS.

The normal character of the cuticle of the species is slightly viscid in wet weather, but the specimens we collected and photographed were exceedingly viscid. They also differed from the normal form in their lighter color, flesh much thicker at the disk and thin at the margins, and cuticle not *appearing* fibrillose. It is close to petasatus, but differs how-

ever, in its narrower gills and in having no striae. It is a good variety if it is not a good species.

27—PLUTEUS LONGISTRIATUS.

Pileus expanded, thin, blackish when young, brownish when expanded, deeply and conspicuously striate. Gills free, white then flesh colored. Stem equal, solid, glabrous, white. Spores globose, 5 mc.

The prominent features of this species are its very *thin* flesh and the prominent *striae*. When young the plants are dark, (blackish) but become light brown when mature. Owing to the almost absence of flesh the cuticle of the pileus splits between the gills in expanding forming the striæ, somewhat similar though not as marked as Coprinus plicatilis. The half grown plants are not at all striate. From Prof. Peck's remarks the plant must be rare in New York. With us it is very common on logs and seems to have a special fondness for hickory.

28—PLUTEUS ADMIRABILIS.

Pileus when plant is in its prime *bright yellow* becoming brownish when old, hygrophanous, glabrous, striatulate on the margin, frequently rugulose-reticulate. Gills free, remote, yellow then flesh colored. Stipe equal, slender, smooth, hollow, bright yellow. Spores subglobose, 5–6 mc.

This plant is frequent here and the only *bright* yellow agaric that I recall. It is close to chrysophæus of Europe from which Prof. Peck distinguishes it by the rugulose-reticulate pileus, but as it occurs here the pileus is ordinarily very slightly rugulose, if at all. It appears to me however, clearly distinct from chrysophæus in its *bright yellow* color, only brownish or cinnamon when past its prime, its smaller size, and the hygrophanous nature. The entire plant—pileus, gills and stipe—is yellow when in its prime. The stipe is very different from all others of the genus which I have met, in fact it is very close to a cartilaginous stipe and hence you would hardly look for the plant in the genus Pluteus. Although, a common plant here, it was several years before I arrived at its determination. The photograph is poor, but *yellow* plants are hard to photograph without a ray filter with which our camera is not equipped.

29—PLUTEUS GRANULARIS.

Pileus convex, then expanded, somewhat umbonate, strongly rugulosely wrinkled, covered with a dense coat of plush in nodules giving it a granular appearance, brown, darker on the raised portions. Gills free, pinkish. Stem equal, solid, striate, covered at the top with a coat of plush similar to the pileus, lighter color above. Spores globose, 5 mc.

This is an elegant and characteristic species but rare here, found on rotten wood. It is strongly marked by its rugulose pileus and peculiar velvety coat. The gills were colored when young (not white) and the specimens were pure brown, (no tinge of yellow,) otherwise agrees in every respect to original description save as to granules. The velvety coat was collected into nodules giving the plant a granular appearance, well shown in our photograph, but there were no granules. It is possible that we have not correctly identified Prof. Peck's species.

30—PLUTEUS UMBONATUS.

Pileus campanulate, with a prominent blunt umbo, reddish umber, excepting the umbo which is pale almost white, smooth, strongly striate to the umbo. Umbo even, smooth. Flesh very thin excepting the thickened umbo. Gills broad, free, flesh colored. Stipe white, solid, smooth, slightly tapering upward. Spores globose, 5 mc. with granular contents when fresh.

This description has been drawn from a single specimen found growing in the leaf mold. It does not seem to approximate any species we can find described. It is probable the plant was not fully developed and that the cuticle of pileus would split when expanded into long striations similar to longistriatus, to which it appears close, save in its prominent thickened umbo.

31—PLUTEUS TOMENTOSULUS.

Pileus expanded, dry, even, white with a pinkish cast, minutely squamulose-tomentose. Gills free, flesh colored. Stem solid, equal, white, densely fibrillose. Spores subglobose, 5–6 mc. nucleate.

We have found but a single specimen growing in the soil in woods. Prof. Peck described it from "decaying wood." Our plant agreed with description save it was not subumbonate and we would describe the stem as densely fibrillose rather than pubescent.

32—PLUTEUS NANUS.

Pileus expanded, brown with a dark sooty center when dry, rugulose when wet, even when dry, minutely densely scurfy, slightly striatulate on the margin when wet, not when dry. Gills free, rose-color. Stipe white, slightly grayish at base, equal, solid, smooth. Spores globose, 5 mc.

We found it but once growing in wet soil by side of a ravine. Owing to its habitat (it is usually recorded on decaying wood,) and to the dissimilarity between our photograph in size and Cooke's figures there may be some question of our determination. Still we feel our plant answers the published descriptions of the species, even as to its small size.

The "shiny" appearance of our photograph is not natural, but due to the specimens photographed, having lain in water and become water soaked.

33—PLUTEUS TORTUS.

This specimen we have only seen once. It was collected several years ago, and the notes made at the time were scanty. As we referred it to "nanus" when collected we presume the pileus was pruinose. Our notes simply state "The brownish pileus has a darker umbo and it is conspicuously and prominently rugulose. Stem very smooth, shining, white, solid, *twisted.*" Our photograph does not show the rugulose pileus and we presume it dried and became even before it was photographed, but it does show in a characteristic manner, the peculiar twisted stipes. Whether this is an accidental feature of these specimens or peculiar to the species is only conjecture. If the latter, the name we propose (pro tem.) tortus, will not be inappropriate.

34—PHOTOGRAPHS.

Set (No. 2) of ten photographs illustrating fourteen plants described in this issue will be sent on receipt of one dollar. Two photographs (Clitocybe monadelpha,) to be described in next pamphlet will be included in the set in order to make an even ten.

The large number who have subscribed to the previous set is exceedingly gratifying to me. While there are no pecuniary returns in the sale of these sets, (they being distributed at exact cost to me,) I am greatly pleased at the interest taken in them as evidenced by the orders and the many very pleasant words received regarding them, some of which we take the liberty to reproduce. There was only one unpleasant feature in connection with the distribution. The orders received so far exceeded our expectations that owing to the poor light for photographic printing in our city during the winter months, our printers (Messrs. Rombach and Groene) have not been enabled to keep with the orders and much delay has been experienced in mailing the sets. *At least one-third of the orders are as yet unfilled,* but will be mailed in the order of receipt, as fast as we receive them from the printer. Most of those who received set No. 1, have expressed themselves as much pleased with them.

"The photographs of Lepiotas arrived in good condition. They are exceedingly fine and I am very glad to get them and thank you for giving me the opportunity to get them. These photographs are much better than any plates I have ever seen. They exhibit the characters of the species." DR. E. A. DANIELS, Boston, Mass.

"I had no idea the plates could show so clearly the characters of the various species. I trust you will continue the series." F. M. COMSTOCK, Cleveland, O.

"Photographs received in splendid condition. They are very beautiful and interesting and I hope to enjoy them very much in the future." E. HARRIS, Cambridge, Mass.

Your photographs were shown to the members of the Philadelphia Mycological Society at their last meeting. The opinion expressed was that they supplied a desirable and effective means of study, next best to natural fungi in their fresh condition."
CAROLINE A. BURGIN, Secretary, Philadelphia, Pa.

"The photographs received. It is a pleasure to commend your excellent work."
D. H. ALLEN, Brooklyn, N. Y.

" The photographs reached me in safety and I think they are the finest I have ever seen, which is saying much as I have taken pictures of all kinds for fifteen years or more. They are much better than any colored plates could be," QUINCY POND, Auburndale, Mass.

"I am much pleased with your photographs. They are excellent."
E. W. D. HOLWAY, Decorah, Iowa.

"I received yesterday the twelve photographs of fungi and I am much indebted to you for these, as they are by far the best illustrations on the subjects I have ever seen and I hope that I may have copies of all that you publish." WM. KNOX, Cleveland, O.

"The photographs of fungi have been received in good order, and I must confess I am delighted with them. Your claim that they are superior to colored plates is fully sustained, as I consider it impossible to show the characteristic features better than in the faithful copy of the camera, which reproduces even the finest details." HUGO BILGRAM, Philadelphia, Pa.

"I am very much pleased with the photographs and consider them not only fine pictures, but better than the usual colored plates." MISS M. C. WILLIAMS, Canandaigua, N. Y.

"Your very excellent photographs have duly come to hand. I find them very fine. I will want the whole series. It seems to me that by thus bringing your collection within reach of students, you will make a very valuable contribution to the study of fungi."
W. C. BATES, Boston, Mass.

Set No. 2, (10 photographs) sent on receipt of one dollar. Sets Nos. 1 and 2 (22 photographs) sent on receipt of $2.20. *All orders subject to delay in printing.* With the advent of brighter weather however, we look for much quicker service.

C. G. LLOYD, Court and Plum Sts., CINCINNATI, O.