MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 21.

CINCINNATI, O. APRIL, 1906.

NEW NOTES FROM AUSTRALIA.

In April, 1905, we issued a pamphlet concerning the Lycoperdaceae of Australia and New Zealand, and although only a few months have elapsed some interesting specimens have since been received, which merit additional notes.

We have since received at Paris specimens from the following:

Prof. D. McAlpine, Melbourne,
F. M. Reader, Casterton,
J. T. Paul, Grantville,
W. R. Guilfoyle, Melbourne,
Robert Brown, Christchurch, N. Z.

Prof. McAlpine sends a very large assortment, fully one-half as many specimens as have ever reached Europe before, and includes some very interesting species.

Mr. F. M. Reader also sends a fine assortment.

The following notes are based on these specimens. As we have frequent occasion to refer to our previous publication and as its title is somewhat cumbersome to quote, we refer to it in this article as "the pamphlet."

THE GENUS TYLOSTOMA:—We have received fine specimens of this genus from Messrs. McAlpine and Reader, much finer and better than can be found in the museums of Europe. We feel well acquainted with this genus as it occurs in Europe, but the species of the United States and Australia are very little known. We hope shortly to make a close study of the two hundred different collections that have accumulated. It is very difficult to recognize these plants from the work that has been done with them, or from the specimens (mostly fragments) in the museums, on which this work is based.

THE GENUS BATTARREA:—Two remnant specimens have been received from Messrs. Reader and McAlpine. The woody stalk of this plant persists long after the spores have been dissipated, but is easily recognized.

THE GENUS SCLERODERMA:—Several specimens of Scleroderma flavidum have been received and it is evident that it is the common form in Australia. It is even doubtful if either Scleroderma

aurantium or Scleroderma verrucosum, forms of which are so common in the United States and Europe, occur in Australia. Scleroderma Geaster, which was unknown to me from Australia at the time I wrote the pamphlet, has since been received from Prof. McAlpine. As stated in the pamphlet, Scleroderma Geaster can be considered a thick, black form, and Scleroderma flavidum a thin, yellow form of the same plant.

Fig. 88.

SCLERODERMA RADICANS (Fig. 88):—Peridium smooth, firm, pale colored. Gleba dark, bluish-black. Spores globose, 12-14 mic. echinulate, mixed with remnants of the hyphae tissue. Root thick, tapering, surrounded by a peculiar sheath of matted mycelium. This specimen was collected by F. M. Reader "in a hollow, half burned tree, on the banks of the Wimmera." As to the peridium and spore characters, it corresponds to Scleroderma Cepa of Europe, a species not positively known to me from Australia. It differs in habitat, and its marked character is the peculiar sheath surrounding the root. If the future develops that there exists in Australia a plant having this peculiar character habitually, which is quite distinct, then it will merit a name, but on a single specimen it may be only a sport.

THE GENUS GEASTER:—Mr. J. T. Paul sends an expanded specimen of Geaster velutinus as it occurs in the United States, thus establishing the occurrence of this species in Australia. At the time we wrote the pamphlet we supposed that "Geaster dubium" was based on unexpanded specimens of this species, and we feel more sure of it now that the species has been surely authenticated from Australia. Prof. McAlpine sends Geaster striatulus, not previously seen by me from Australia, also Geaster Drummondii of which only one collection was known, made by Drummond many years ago.

Fig. 89.

Fig. 90.

Fig. 91.

GEASTER READERI (Figs. 89, 90 and 91):—In our pamphlet we have referred the specimen on which Geaster Readeri was based as a small form of Geaster rufescens. We are still of this opinion, but the receipt of abundant specimens from Mr. Reader and others convinces us that it is a constant form in Australia, and merits a distinct name. It is a much smaller plant than Geaster rufescens

as it occurs in the United States and Europe, darker in color, not so red, the exoperidium is more rigid and the fleshy layer thin and closely adnate. It grows in sandy places. The typical Geaster rufescens has never been collected in Australia. Prof. McAlpine sends what I take to be unexpanded plants of Geaster Readeri, which have the *globose form* characteristic of unexpanded rufescens but much smaller.

THE GENUS CATASTOMA:—Prof. McAlpine sends several scanty collections of Catastomas that are unknown to me. One (a single specimen) opening by a fimbriate mouth such as does not occur in any known species. The genus Catastoma of Australia is very imperfectly known, and much more material must accumulate before anything definite can be done with it.

THE GENUS BOVISTELLA:—Numerous collections of this genus have been received from my Australian correspondents and it is evidently a very common genus in Australia.

BOVISTELLA ASPERA (Plate 33):—Comparison of the specimens received from W. W. Watts with the types from Chile in the museum at Paris shows some slight differences. The cortex of the Australian plant is not so strongly developed; the color of the gleba is olive while in the type it is brown; the pedicels of the spores of the Australian plant are longer. I believe if we had abundant material of the Australian and Chilian plants they would be found to be not exactly the same.

BOVISTELLA BOVISTOIDES (Plate 70):—We have received three collections of this plant, new to the Australian flora. It was originally named Mycenastrum bovistoides (Grev. 16-26) and is compiled in Saccardo as Scleroderma bovistoides.† Plants globose, from 1 to 2 cm. in diameter, devoid of a sterile base. Peridium dark, reddish-brown, flaccid, opening by a definite mouth. Cortex minute, flocculent coat, breaking up into little areas and persistent. Gleba olive when young, dark brown when old. Capillitium of separate threads with pointed branches. Spores globose (5 to 6 mic.) smooth, with long (12 to 16 mic.) slender, persistent pedicels.

Heretofore the plant has been known from a single collection at Kew, made in British India. In external characters it is the same as Bovistella echinella, but is a much larger species and the capillitium characters are entirely different. Bovistella dealbata of the United States is a very similar plant, differing slightly in cortex and spores.

SPECIMENS IN OUR COLLECTION.

Australia, D. McAlpine (3 collections); F. M. Reader.

BOVISTELLA GUNNII (Plate 70);—We have received from Prof. McAlpine a fine collection made by himself and also one made by F. M. Reader, which are very close to the plants at Kew labeled

†The reference to the genus Mycenastrum is bad enough, as it differs both in capillitium and peridium from that genus, but to refer it to Scleroderma is absurd, as it has no resemblance whatever to Scleroderma in any single character.

Lycoperdon Gunnii, and we prefer to refer to this plant rather than to call it a "new species." However we get from Prof. McAlpine's collections an idea of the plant in its different stages that can not be gained from the Kew collection. The old specimens, if sent separately, would hardly be referred to the same species as the plant changes markedly in appearance when ripe.

Plant globose, 3-4 cm. in diameter, devoid of sterile base. Peridium flaccid, opening by a definite mouth. Cortex a flocculent, woven coat which when old dries up and breaks into areas which persist on the dark, reddish-brown peridium. Gleba olive when young, becoming dark brown when old. Capillitium of long, intertwined, branching threads. While it is not easy to float out separate threads entire, as it is in the previous species, it is possible that they are of the same general nature, only longer and intertwined. Spores globose, 5-6 mic., smooth, with slender, persistent pedicels.

This is a much larger species than the previous, but when old bears a clear, general resemblance to it except in size.

SPECIMENS IN OUR COLLECTION.

Australia, Prof. D. McAlpine, F. M. Reader.

BOVISTELLA AUSTRALIANA (Plates 33 and 70):—An additional abundant collection has been received from J. T. Paul. It appears to be a frequent plant in Australia.

BOVISTELLA SCABRA (Plate 70):—Plant with a well developed sterile base of large cells. Cortex of short, scabrous, connivent spines. Gleba olive umber. Capillitium of Lycoperdon type of long, branched, intertwined, attached threads. Spores globose, 4-5 mic., smooth, with slender pedicels. This plant has the general size, appearance and structure of Bovistella australiana, and differs only in its cortex.

SPECIMENS IN OUR COLLECTION.

Australia, J. G. O. Tepper, F. M. Reader, J. T. Paul.

BOVISTELLA ROSEA:—We give this name provisionally, to a specimen received from J. T. Paul which differs from all species known to me in the color of the gleba which is pale rose color. In other respects it corresponds to Bovistella australiana. Not much stress can be placed on gleba color of a single specimen, but no known species of Bovistella has gleba of a color tending to reddish or purple. We have also labeled a collection from Mr. Paul "Bovistella australiana?" This collection differs from any we have ever seen in the decided yellow color of the gleba.

THE GENUS LYCOPERDON:—Twenty-eight additional collections of this genus have been received, and they confirm the statement in our pamphlet that the common forms in Australia are Lycoperdon pratense and forms of Lycoperdon polymorphum. Of the former we have received three collections; of the latter twenty-four. The forms of polymorphum run mostly to those with a subglobose

shape and slight development of the sterile base, called Lycoperdon cepaeforme. Four of them are the black form (Lycoperdon nigrum), a form that seems to be endemic.

The specimens of Lycoperdon pratense received from Prof. McAlpine are so unusually large and well-developed that we present a figure of them (Plate 71). We also give a figure (Plate 71) of Lycoperdon cepaeforme, which from the collections we have received, we judge to be the most common species in Australia. From Prof. McAlpine we have also received typical specimens of Lycoperdon gemmatum (Fig. 92), a species which at the time we wrote our pamphlet we were not sure occurred typically in Australia. It is the common species of most temperate parts of the world, but it seems to be rare in Australia.

Fig. 92,

LYCOPERDON TEPHRUM:—I have been led to doubt the determination of the specimens called Lycoperdon tephrum in the former pamphlet. They are immature and should not have been determined. I withdraw what I have said on this subject, awaiting further material.

THE GENUS CALVATIA:—The abundant and fine specimens that we have received from Prof. McAlpine and Mr. Reader afford us a much better idea of this genus in Australia than we had at the time we wrote our pamphlet. Calvatia candida proves to be the most frequent species, which is strange, as it is a very rare plant in Europe where I know of only two or three collections, and it is unknown from the American continent.

CALVATIA CANDIDA (Plate 72):—Specimens that we now have are larger with a more strongly developed base, and this plant in Australia is not the little, globose plant such as is only known in Europe. Peridium with a smooth cortex, very thin and brittle, white when young, but becoming reddish-brown when ripe.† Sterile base (when developed), compact, not cellular, similar to the gleba in appearance. Capillitium of slender, *hollow*, branched, *septate* threads, about the diameter of the spores, colored when young, but becoming almost hyaline (under the microscope) when fully ripe. Spores globose, 4-5 mic., minutely but distinctly asperate under a high power.

SPECIMENS IN OUR COLLECTION.

Australia, *Norwood*, J. G. O. Tepper, *Dimboola*, D. McAlpine, (2 collections). *Warracknabeal*, F. M. Reader, *Borung*, F. M. Reader, *Adelaide*, Walter Gill.

CALVATIA OLIVACEA (Plate 72):—We have received two collections. Heretofore the type specimen was all that was known. It is the same as Calvatia candida as to spores and capillitium, excepting that the latter is more strongly colored. In general habits, how-

†Hence the plant is really mis-named.

ever, it is a larger plant with a thicker peridium. It has more the appearance of being a small specimen of Calvatia gigantea. A small specimen is well shown in Cooke's Handbook (fig. 118), excepting the spores which are inaccurately shown with a pedicel. The spores of the type are almost smooth. I can detect only the faintest indication of asperity with my highest power.

SPECIMENS IN OUR COLLECTION.

Australia, From D. McAlpine two collections, near Dimboola, by F. M. Reader.

THE GENUS ARACHNION:—From the vast extent of territory of Australia all that was known of the genus Arachnion was a single specimen, collected more than sixty years ago by Drummond. From Prof. McAlpine we have received an additional specimen of this species, and also a widely different species.

ARACHNION ALBUM (Plates 16 and 73):—When we wrote our pamphlet we considered this under the name given to the Australian plant by Berkeley, viz: Arachnion Drummondii, but on a close comparison of the Australian plant with the well-known species of America, Arachnion album, we are unable to detect any difference whatever. The spores may be a shade larger, but not enough to measure, and as to pedicels they are frequently present in the American plant.

SPECIMENS IN OUR COLLECTION.

Australia, Prof. McAlpine. (We have the plant also in our collection, one collection from Brazil, one from Ecuador and several from the United States.)

ARACHNION RUFUM (Fig. 93):—Peridium dark reddish-brown, with a rough surface and (in these specimens) ovate in shape with an acute point. Gleba brown, composed of little, irregular peridioles, like grains of sand. Peridioles almost naked, consisting of clusters of spores, but not enclosed in a loose web as in the previous species. The spores are probably enclosed in little cells in the young state, but if so, in this species the walls of the peridioles are evidently absorbed in the process of deliquescence. Spores globose, smooth, 5-6 mic.

Fig. 93.

Fig. 93.

This is much the largest species known, with a peridium not so thin and fragile as in other species, but more tough and dehiscing by a lacerated opening. It differs widely from Arachnion album, not only in general appearance, but in the peridioles which are not so uniform in size and have hyphae threads, very scantily.

BOUDIER'S PLATES.

The best illustrations that have ever been produced of the fungi of Europe are now being published by Monsieur Paul Klincksieck, a book-seller of Paris. They are a superb series of colored plates that have been drawn by Monsieur E. Boudier.

Two years ago I had the pleasure to déjeuner with Monsieur Boudier, and I then expressed my appreciation of his work as follows: "He has prepared a series of plates of the fungi of France which, in beauty, in accuracy, in minute technique are unrivaled by any that exist today. Compared to them the usual, published plate of Europe is a cartoon." (Myc. Notes, p. 164).

Monsieur Boudier, in addition to being an authority on mycology, has unusual talent as an artist. This is a combination rarely met. A few good artists, not mycologists, have drawn illustrations of fungi: and many mycologists have issued alleged illustrations of fungi who (judging from their work) could not earn their salt as artists. Monsieur Boudier, in addition to natural artistic talent, has an inexhaustible stock of patience and application in reproducing minute details. The result is a series of plates that, in my opinion, have no equals, except perhaps the magnificent work of the Tulasne brothers.

Monsieur Paul Klincksieck, the publisher of the work, is also entitled to credit for the manner in which the work is issued. The published plates represent the best product of modern lithographic art, and are as nearly perfect as it is possible to make them. I feel assured that the issuing of this work by Monsieur Klincksieck is not a commercial matter purely, but a subject in which he takes personal pride as a publisher, and that he was prompted to undertake it by a just appreciation of the excellence of Boudier's drawings.

The publication has not been a financial success. This is due to a number of causes. It is an expensive work, beyond the reach of the average pocket-book. The publisher, in my opinion, erred in business judgment in requiring an initial subscription to the entire work before he had thoroughly demonstrated the excellence of his reproduction. When the work was begun, two hundred and fifty copies were issued, but when sixty of the subjects had been published, the financial loss was found to be so great that the issue was reduced to one hundred and twenty-five copies, and that number is all that will ever be published. In time the work will become very rare in the book markets. Two series (of the six proposed) will certainly be issued; the first at a considerable loss to the publisher, the second at a heavy expense to the author. Seventy-nine subscribers to the work have been secured. The publisher tells me if he can secure one hundred subscribers, it will just cover the expense of issuing, and the series of six hundred plates will then be completed. It will be to the everlasting discredit of Mycology if this work, the most beautiful, accurate and creditable that was ever originated, should fail for lack of twenty-one subscribers. It is the duty of every mycologist who can afford it to subscribe. If he can not afford it personally, he should urge the library or scientific institution with which he may have in-

fluence to secure the work. It costs one hundred and eighty francs per series of one hundred plates,† and the intention was to issue a series each year for six years. The only adverse criticism I have ever heard offered concerning the work is that the plates are expensive. They may be expensive, but certainly the price can not be called excessive when the plates are sold at less than the cost of production, and surely plates of this quality can not be published more cheaply when the artist donates his services as a labor of love. If he were paid a fair price for his work the plates could not be sold for ten times the present price. Aside from their scientific value, these plates merit a place in the art department of every library that maintains an art room, and it is to be hoped that at once twenty-one individuals or libraries will subscribe for the set, thus insuring the completion of the work.

Subscriptions should be sent to Monsieur Paul Klincksieck, 3 rue Corneille, Paris, France.

THE GENUS ARACHNION.

The ideas of the genus Arachnion are derived from the ripe specimens. In these the spores are found to be collected in little balls, called peridioles, which are surrounded by a few, loose, hyphae threads. In the usual American form these threads are relatively numerous, and the peridioles are likened to little sacks. I think the idea is a little overdrawn, for the threads form a loose network at the best, and never I think a true membrane.

In addition, in a new form that has just reached us from Australia, the spores are collected in little, irregular masses with very few surrounding threads, almost naked in fact. And to complicate the question, plants have recently been discovered in Texas and Mexico which we place in another genus, Holocotylon, because the spores are not collected in little, separate masses, but the entire contents of each peridium consist of spores lining irregular and confluent cells, and forming a continuous mass of gleba. The genus Holocotylon is so close to Arachnion in its general nature and habits that it is a question if it were not better to consider it as an Arachnion and to extend the limits of that genus to include it.

The genus Arachnion has always a very thin peridium with a smooth cortex. It breaks irregularly and is so fragile that it is difficult to keep entire ripe specimens in the herbarium. There is no sterile base. The gleba consists of little granular masses of spores called peridioles which in the type species are each surrounded with an imperfect web of hyphae, analagous to the capillitium of other "puff-balls" and for convenience called capillitium. In Arachnion rufum, of Australia and in a form of Arachnion album from Brazil the peridioles are almost devoid of hyphae, almost naked, little balls of spores. The spores are borne on slender sterigmata which in some specimens (not

† See correction, page 259.

species I think) are partially persistent as pedicels. Usually these pedicels are absorbed in the process of deliquescence, and it is not unusual to note spores in the same specimens with varying remains of the sterigmata.

HISTORY.—The genus was described and figured by Schweinitz in 1822† from North America, from a single species, Arachnion album, which has since proved to be of wide geographical distribution. Next, Berkeley (Hook. Jour. 1843-417) described under the name Scoleciocarpus tener, a plant from South Africa, which I consider the same as Arachnion album. Next Montagne in 1849 (Ann. Sci. Nat. 3-11-33) described Scoleciocarpus bovista from Chile. In the meantime Berkeley had discovered that his genus Scoleciocarpus was the same as Schweinitz's genus Arachnion and so wrote Montagne who changed his name to Arachnion bovista (Ann. Sci. Nat. 3-12-302) stating it was done on advice from Berkeley.‡ Next, Berkeley (Jour. Linn. Soc. 18-389) named a single specimen from Australia Arachnion Drummondii. An examination of the above specimens convinces me they do not differ enough to be kept as distinct species and I would refer them all to Arachnion album. During the past summer (1905) I have received specimens of Arachnion album from Rev. L. Badet, Salussola, Italy, which is the *first and only time the genus has ever been known in Europe.*

"Arachnion aurantiacum" is based on Rafinesque's ravings (Acinophora aurantiaca) and is more probably a Scleroderma or a Polysaccum than an Arachnion.

Species of Arachnion.

ARACHNION ALBUM. (Plates 16 and 73).—Peridium, smooth, thin and fragile, never opening by a definite mouth, but breaking irregularly, pale in color, pure white when young. Gleba composed of little grains called peridioles, each consisting of a mass of spores surrounded by a few, loose, hyphae threads (capillitium.) Spores smooth, globose, 5-6 mic. sometimes with fragments of the persistent sterigmata attached. Gleba color in the type form *ash gray.*

FORMS.—We do not consider that the following geographical forms merit distinct names, but note all the differences that we find.

American (type) form.—Hyphae threads slightly colored, rarely we have noted colored threads. Spores rarely pedicellate.

European form.—Threads distinctly colored. Spores mostly pedicellate.

Brazilian form.—Threads very scanty.

Australian form. (A. Drummondii.) Same as American.

South African form (A. tener).—Spores more notably pedicellate.

Chilian form (A. bovista).—Differs from others only in color of gleba, which is *brown* not ash gray.

Geographical Distribution.—Fairly common and widely distributed in North and South America. Known also from one collection each from South Africa, Guadalupe and Europe (Italy), and two from Australia.

Specimens in our Collection.

United States, Texas, W. H. Long, Jr., *Ohio*, A. P. Morgan, C. G. Lloyd, *Massachusetts*, Geo. B. Fessenden.

Australia, Prof. D. McAlpine.

South America, *Brazil*, Rev. J. Rick.

Ecuador, From Herbarium Patouillard.

Europe, *Italy*, Rev. L. Badet.

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† Synopsis fungorum Carolinae.

‡ Notwithstanding the author of Scoleciocarpus repudiated his genus very soon after it was proposed, stating it was the same as Arachnion (which it surely is, and in my opinion the same species), and that all this happened more than fifty years ago, the genus Scoleciocarpus is still carried in Saccardo and by Fischer in the recent Engler and Prantl.

ARACHNION RUFUM (Plate 73).—Peridium *reddish brown*, rough with adhering sand (in these specimens) ovate with an acute apex, opening by an irregular aperture. Gleba *brown*, composed of small, irregular, almost naked masses of spores. Hyphae threads very scanty. Spores subglobose; 5-6 mic. smooth, pedicellate. This species differs from the preceding in its thicker, reddish-brown peridium, larger size and gleba which is not so distinctly differentiated into distinct peridioles. It seems to me to connect Arachnion album to the following genus.

SPECIMENS IN OUR COLLECTION.

Australia, Prof. D. McAlpine.

THE GENUS HOLOCOTYLON.

Peridium thin, fragile, breaking irregularly. Sterile base, none. Gleba consisting of a mass of spores lining irregular, confluent cells. Capillitium, none. Spores (in known species) mostly pedicellate. The plants composing this genus are very close to Arachnion in their general habits but differ in the structure of the gleba. This, instead of being in little, separate masses of spores, consists of one confluent, chambered mass. We think our enlarged photograph (Plate 73, figs. 5 and 6) will give a good idea of the structure, but we acknowledge our indebtedness to Prof. Patouillard, who has kindly prepared for us drawings (figs. 94 and 95), illustrating his views of the structure of

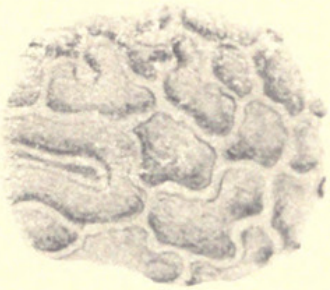

Fig. 94.

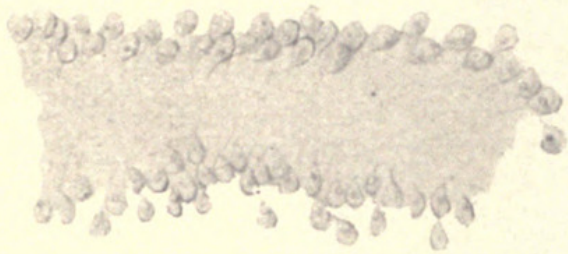

Fig. 95.

the gleba†. Fig. 94 represents a portion of the enlarged gleba mass, and fig. 95 the arrangement of the spores. We have received two quite distinct plants belonging to this genus.

HOLOCOTYLON BRANDEGEEANUM (Plate 73).—Peridium globose, thin and fragile, *yellow*, breaking irregularly. Gleba mass dark brown. Spores globose, smooth, 5-6. mic. (some) with slender pedicels. The specimens were collected by T. S. Brandegee, of San Diego, California, at Culiacan, Mexico. The plant is very close to the following in its gleba characters, but is a *larger species*, and at once distinguished by its *yellow* peridium.

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†We are afraid that our enlarged photographs of the gleba of Arachnion and Holocotylon do not show the difference that exists as clearly as we would wish. The peridioles of Arachnion adhere together and do not show as separate grains as they really are.

SPECIMENS IN OUR COLLECTION.

Mexico, T. S. Brandegee.

HOLOCOTYLON TEXENSE (Plate 73).—Peridium globose, very thin and fragile, white, breaking irregularly. Gleba mass dark brown. Spores globose, smooth, 4-5 mic. (mostly) with permanent, very thin pedicels. This plant has reached us (two collections) from J. W. Stiles, Huntsville, Texas. In peridium characters, size and general appearance the plant is exactly the same as Arachnion album, but differs in color and structure of the gleba. Fig. 96 represents the plant, natural size, drawn by Prof Patouillard.

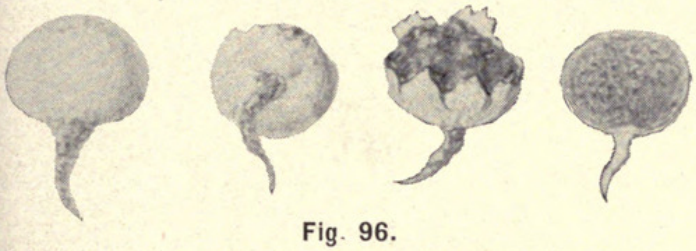

Fig. 96.

SPECIMENS IN OUR COLLECTION.

Texas, J. W. Stiles.

PROFESSOR FARLOW'S WORK.

Undoubtedly the most important and useful work that has ever been issued on American fungi is the "Bibliographical Index of North American Fungi," by William G. Farlow, the first part of which has just been published by The Carnegie Institution of Washington. The references to American fungi are so scattered and fugitive that the bringing together in a systematic form will be a great help and convenience, and no man in America is as competent or as well equipped for a critical editorship of this work as Prof. Farlow. No other man in America has as large a collection as he, and probably no other man in America has devoted more study to the subject. His critical notes will be of inestimable value to American mycologists. The principles of nomenclature, as stated in his preface, have the right ring to them, and we hope they will be strictly carried out without fear or *favor*. We reproduce a few extracts from the preface that impress us as being particularly sound:

"There are two categories of botanists; those who believe that nomenclature is an end rather than a means, to whom the changing of names to adapt them to a uniform, automatic system seems to be the important aim in science; and those who regard nomenclature as a necessary evil which can be mitigated by making as few changes as possible. Of these two categories, it is hardly necessary to say that we should prefer to be classed with the latter."

"It is best not to make too violent attempts to interpret the older mycologists, but to be content with letting the dead bury their dead. The business of reviving corpses has been carried altogether too far in mycology. An examination of some of them at least, shows that they are as inaccurate as they are useless."

We shall feel interested in watching, as the work proceeds, Prof. Farlow's treatment of the "juggled names" of the puff-ball world and shall keep our readers advised.

LE GENRE CALVATIA ET LES "PETITES AFFICHES."

A mon avis, le genre Calvatia est un genre excellent et parfaitement distinct; mais les botanistes français tardent bien à se convertir à cette idée. Il comprend ces grandes "Vesses-de-loup" qui ne s'ouvrent pas par un orifice défini, mais dont le péridium se partage en pièces qui tombent isolément.

Il existe en France quatre espèces de Calvatia: C. gigantea nommé la Vesse-de-loup géante, C. caelata qui semble l'espèce la plus commune, C. saccata à laquelle, selon moi, on donne habituellement en France le nom erroné de Lycoperdon excipuliforme, et le C. lilacina qui semble n'habiter que les régions montagneuses.

Parmi les ouvrages français publiés ces deux dernières années et qui citent la Calvatia gigantea, l'un le nomme Lycoperdon Bovista, l'autre Bovista gigantea. La raison de l'emploi comme nom spécifique du mot Bovista repose sans doute sur quelque application de la loi de priorité: il est vrai que l'application de cette même loi a conduit d'autres auteurs récents à adopter pour la même espèce le nom specifique maxima. C'est le cas, de dire qu'il y a dans la priorité divers degrés comme il y a divers grades dans la Franc Maçonnerie, et les auteurs qui, pour le choix des noms à adopter se basent sur cette loi, arrivent rarement aux mêmes conclusions. A mon avis, le nom gigantea convient parfaitement au Champignon communément appelé Vesse-de-loup géante, et il à pour lui le prestige d'un emploi courant depuis plus d'un siècle. Quant à l'emploi comme nom générique du mot Bovista, ce semble un souvenir des temps reculés où les anciens botanistes se servaient, pour désigner notre plante du simple nom de Bovista. En réalité, cette plante a, dans son peridium, ses spores et son capillitium, des caractères tout différents de ceux qui appartiennent au genre Bovista tel que le comprennent les mycologues de la génération actuelle.

On peut rarement parcourir une liste de Champignons français sans y trouver noté le Lycoperdon excipuliforme. Ce qu'il faut entendre par ce nom, j'ai tout lieu de croire que c'est habituellement le Calvatia saccata. Scopoli a créé le nom de Lycoperdon excipuliforme pour une espèce figurée par Vaillant laquelle es certainement le Lycoperdon gemmatum!! Sans doute la signification première du nom de Scopoli s'est peu à peu obscurcie, car nous trouvons des échantillons de C. saccata étiquetés Lycoperdon excipuliforme dans l'herbier déja ancien de Desvaux. L'erreur s'est propagée jusqu'à nos jours. Il en est ainsi dans plusieurs ouvrages français, en particulier dans celui de Richon et Roze.

Le genre Calvatia est habituellement attribué à Fries et le nom de Fries suit généralement le nom de ce genre. Je remarque fréquement sur les glaces des cafés de Paris l'enseigne "Ici on lit les Petites-Affiches." Je ne regarde jamais cette enseigne sans me rappeler l'usage qu'ont les botanistes de placer leur nom après celui des plantes. Je ne vois pas là autre chose que des "Petites-Affiches." On nous dit que cela permet de retourner en arrière, de remonter jusqu'à l'idée

première du genre et de vérifier si telle plante lui appartient bien. Voyons ce qu'il en est dans le cas actuel.

Schweinitz—un mycologue américain—envoya à Fries un échantillon d'un Champignon. Ne pouvant le faire rentrer dans un genre connu, Fries fit ce que font en pareil cas les botanistes modernes: il se tira d'affaire en créant le novum genus Calvatia. Qu'il n'eût pas l'idée nette de ce genre, cela est de toute évidence, car des plantes ayant des caractères génériques manifestement semblables à ceux de la plante américaine croissent dans la propre patrie de Fries et il ne reconnut pas l'affinité des unes et des autres. Une idée du genre Calvatia dormait pendant plus d'un demi-siècle, quand Morgan—un autre mycologue américain—la reprit, la précisa d'après l'examen d'un échantillon de l'herbier de Schweinitz. Dira-t-on encore qu'on doit accoler le nom de Fries à Calvatia et qu'on doit remonter jusqu'à son ouvrage pour prendre une idée d'un genre dont lui, Fries, n'avait pas idée? Ce cas n'est pas le seul; la littérature botanique est pleine de cas semblables. De là vient que je trouve déplorable le système des "Petites-Affiches."

ERRORS.

It is our aim to have every statement that appears in Mycological Notes in keeping with the truth, and we will gladly correct every error that may be brought to our attention, however slight. We fully believe that at least one-half the past literature of "puff-balls" though very interesting, is not true.

The references on page 225 to "Plate oo figure oo," etc., are of course, errors due to bad proof-reading. Personally, I am a very poor proof-reader, and this issue, in which the work is left to others, being published in America while I am in Europe, I hope will be free from such obvious errors.

Nothing apparently gives so much fiendish joy to a printer as to slip in a cut of a "puff-ball" and stand it on its head, as figures 80 and 86. From the time the copy goes into his hands until the pamphlet comes from the press, it is a constant war to keep the figures on their feet, and we are not always the victors.

In compiling the Index we noted an error on page 182. It was Vittadini's Lycoperdon tomentosum that was compiled in Saccardo as Bovista tomentosa, not Curry's Lycoperdon tomentosum. We do not know how we happened to make that slip as we knew better at the time.

The statement in the note, page 159, that "the same house in which Persoon lived still remains near the Gare de Lyon" is an error of fact. The street, "rue des Charbonnier," where Persoon lived is not the same street of Paris that bears that name now, as it was located on the other side of the Seine in a quarter that has since been largely reconstructed and its identity lost to the present generation. I thank Monsieur Camus† for information on which this correction is made.

The statement on page 244 that Lycoperdon Berkeleyi is a synonym for Calvatia craniiformis is true as stated, but there are two Lycoperdons Berkeleyi, both based on the two Lycoperdons delicatum, and all four are errors.

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†Monsieur F. Camus has kindly favored me with the following note: "A l'époque où Persoon habitait Paris, il y avait deux rues des Charbonniers. L'une, rue des Charbonniers-Saint-Antoine, existe encore, l'autre - où logeait Persoon - n' existe plus. Elle s'appelait rue des Charbonniers-Saint-Marceau. Elle se trouvait à peu près sur l'emplacement d'une partie de la rue Berthollet actuelle et a été détruite vers 1860, lors du percement du boulevard de Port-royal. La rue des Lyonnais, qui aboutissait à l'ancienne rue des Charbonniers-Saint-Marceau, et qui n'a pas subi de transformations modernes, peut donner une idée—idée plutôt triste—de ce que devait être la rue qu'habitait Persoon."

A LARGE SPECIES OF CYPHELLA.

BY N. PATOUILLARD.

NOTE.—In Samoa there grows densely caespitose on old logs, a beautiful, pure white fungus that was of much interest to me because it seemed to me to belong to a genus with which I was not acquainted. On my return to Paris. I gave it to Professor Patouillard for determination. He states that it belongs to the genus Cyphella, which usually consists of very minute plants, and that he is unable to find the species described. He has named it Cyphella grandis, and has drawn up the following description.—C. G. L.

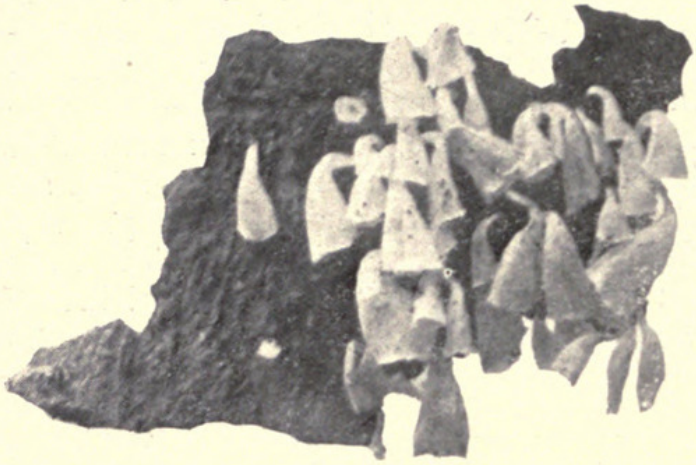

Fig. 97.

CYPHELLA GRANDIS.—Sparsa vel caespitosa, majuscula, 7–25 millim. longa, 4–7 millim. lata, digitaliformis vel cornucopiaeformis, interdum uno latere magis producta, lateraliter stipite cylindraceo, 3–6 millim. longo, 1–2 millim. crasso, adfixa, pendula, margine acuto, integro, repandulo, aperta, glabra, membranacea, candida in vivo dein albido lutesceno, intus extusque laevissima, ex hyphae cylindraceo, 8–15 mic. diam. tenuiter, tunicatis composita. Hab. ad corticem arborum, Samoa.

A NEW BOOK ON COLORS.

Monsieur Klincksieck, No. 3, rue Corneille, Paris announces a book on colors for the naturalist and particularly for the mycologist. No work is more needed in mycology than a good book of colors, and as what Monsieur Klincksieck does he usually does well, we have great hope for the new work. There now exists no work that is of much practical value. Saccardo had the right idea when he issued his little pamphlet, but his color samples were not elaborate enough, nor in all cases accurate enough to be of much service. This was without doubt partly due to the printer, and as Monsieur Klincksieck has a practical knowledge of the printing art, and we think a critical knowledge of colors, we look for something that will be of service.

A SECOTIUM IN SWEDEN.

I collected near Stockholm last summer a single specimen of a little Secotium with large, rough, globose spores. It is the only specimen of this genus ever known to be collected in Sweden. I judge it is Secotium michailowskianum, at least it was a little weak, puny specimen, and I do not know what stunted it unless it was the name. No wonder it is a rare plant. It is strange it managed to survive at all and carry its name.

NOTELETS.

THE PRICE OF BOUDIER'S PLATES.—Since our article, page 251, has been in type, we learn that the publisher has for the third time advanced the price and that now the price is two hundred francs for the first series, and one hundred and eighty francs for subscription to each of the forthcoming series. We feel that this is a mistake, but as there are now only about a dozen subscribers needed to insure the continuance of the work, we are confident the short-sighted policy of the publisher will not result in the untimely death of the undertaking. Boudier's plates are so far superior to any similar series, and are produced in such a superb manner that their very excellence will carry them to a successful finish. The failure to complete the issue would be an irretrievable loss to mycology, and should it occur there will be no trouble or hesitation in placing the responsibility for the failure.

PROFESSOR FARLOW'S STAND ON NOMENCLATURE.—We strongly endorse (and we think the principle is generally endorsed now-a-days) Professor Farlow's position of opposition to unearthing "old corpses" to supplant live names. But we carry the principle further. We do not believe in exhibiting these old remains when others dig them up. When Professor Farlow exhibits "Lycoperdon stellatum, Scop." in its juggled form "Astraeus stellatus (Scop.) Fischer," we are moved to remark that "Lycoperdon stellatum" is indeed a very ancient corpse that lay for more than a hundred years in an unmarked grave until it was recently dug up in Europe. Furthermore that "Lycoperdon stellatum, Scop." never was a respectable corpse, for it never had a corporeal existence, and that "Lycoperdon stellatum, Linn." was such a misshapen production that it died in infancy. It is unfortunate that Professor Fischer used it as he is not the man to dig up corpses on principle, and is not the excavator of this one, and we feel that he merely made a careless slip such as we believe Professor Farlow has made in following him.

CAN SUCH THINGS BE?—We have just received from Dr. Mary S. Whetstone, not only an unknown species, but we think an unknown genus of Gastromycetes, collected in the vicinity of Minneapolis. Had we received it from central Africa, we should not have been surprised, but it is difficult to believe that such things exist in Minnesota. Professor Patouillard is as much interested in studying the specimen as I am, for it seems to have the structure partly of a Polysaccum, but more largely of a Phellorina. It is needless to say it will be further considered in Mycological Notes.

LASIOSPHAERA FENZLII IN JAPAN.—We have received from Professor Atsushi Yasuda, Sendai, Japan, a specimen of Lasiophaera Fenzlii, which is the first time the plant has ever been recorded except from British India and Ceylon. It is a "giant puff ball," and may be taken for Calvatia gigantea (Cfr. Myc. Notes, p. 191 and plate 19). This specimen is young and has subhyaline capillitium but I think it would become colored when ripe. The threads of the Japanese plant are somewhat broader than the Ceylon form and both are septate, a fact I overlooked in drawing the description on page 191.

MITREMYCES IN NEW CALEDONIA.—Professor Patouillard has received a specimen of Mitremyces from New Caledonia, thus extending the geographical limits of this genus. The species is not decided, but it is not Mitremyces fuscus, the only species known from Australia, and which might be expected to grow in New Caledonia.

THE NOMENCLATURE QUESTION.—We have looked in vain in our American journals for a report of what was done at Vienna the past summer on the "Nomenclature Question." We think, however, it was really immaterial, for past history is that botanical congresses meet and make "laws," and then each one of the members who aided in making these laws goes home and does what he pleases, just the same as before the laws were made.

PARALLEL WORK.

The Species of the Genus Disciseda.

By L. Hollós.

The genus Disciseda was already described by Czerniaiev in the year 1845 but his work was little known, so that the greater part of the species have been placed in the externally similar genus Bovista. In the year 1892 Morgan recognized that several of the fungi included in the genus Bovista formed an entirely different genus, but as he did not know of Czerniaiev's work, he placed them in a new genus "Catastoma." I am justified in view of my work on the genera Disciseda to place together as follows the list of fungi which belong according to the descriptions to the genus Disciseda.

Disciseda circumscissa (B. & C.) Hollós.

Disciseda debreceniensis (Hazsl.) Hollós.

Disciseda juglandiformis (Berk.) Hollós.

Disciseda Zeyheri (Berk.) Hollós.

Disciseda hyalothrix (Cooke & Mass.) Hollós.

Disciseda velutina (Berk. & Br.) Hollós.

Disciseda cervina (Berk.) Hollós.

Disciseda pedicellata (Morg.) Hollós.

Disciseda Hollósiana, P. Henn.

NOTE.—We would not wish to undervalue the important discovery that Dr. Hollós has made in regard to the genus Catastoma. In fact we feel that it can not be undervalued. But we would mildly suggest that if the Doctor will take the trouble to look up some of the specimens he would make some additional discoveries. "Disciseda velutina (B. & Br.) Hollós" is an unopened Geaster. "Disciseda cervina (Berk.) Hollós" is the same plant as "Disciseda debreceniensis (Hazsl.) Hollós," and something like thirty-four years "prior" and it is not the "priorest" name at that. After publishing to the world that he knew enough of "Bovista juglandiformis" to *change its name* (and add his own to it) the Doctor finds a specimen in the museum at Berlin which he assures Dr. Hennings is absolutely new to science, and Dr. Hennings in gratitude for such valuable information calls the plant Disciseda Hollosiana. If the specimens of "Bovista juglandiformis" at Kew and "Disciseda Hollosiana" at Berlin should ever get transposed no living man could ever tell which is which. But Dr. Hollós is not alone in his discoveries. Professor McGinty, of Poseyville, has recently been making some abstruse investigations, with the aid of a date dictionary, and has unearthed the original reference to the genus Geaster. In view of the value of such scholarly work we present them to our readers in convenient form for comparison.—C. G. L.

The Species of the Genus Anthropomorphus, Seger.

By N. J. McGinty.

The genus Anthropomorphus was described and illustrated by the learned D. George Seger in 1688. I reproduce a copy of his illustration herewith, which although slightly inaccurately drawn will readily be recognized as the first representation of this

genus. In the year 1729 Micheli recognized a number of species which, as he did not know of Seger's work he placed in a new genus "Geaster." I am justified therefore in bringing together the following list which according to the descriptions belong to the genus Anthropomorphus.

Anthropomorphus Berkeleyi (Massee) McGinty.

Anthropomorphus Bryantii (Berk.) McGinty.

Anthropomorphus coronatus (Schaeffer) McGinty.

Anthropomorphus Drummondii (Berk.) McGinty.

Anthropomorphus floriformis (Vitt.) McGinty.

Anthropomorphus fornicatus (Huds.) McGinty.

Anthropomorphus fimbriatus (Fries) McGinty.

Anthropomorphus limbatus (Fries) McGinty.

Anthropomorphus mammosus (Chev.) McGinty.

Anthropomorphus minimus (Schw.) McGinty.

Anthropomorphus mirabilis (Mont.) McGinty.

Anthropomorphus rufescens (Fries) McGinty.

Issued by C. G. LLOYD.

PLATE 70.

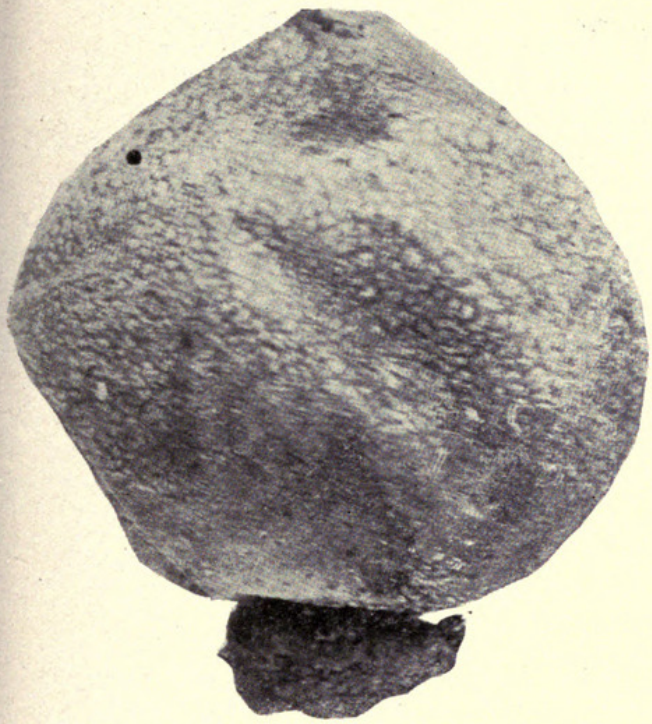

Fig. 1.

Fig. 2.

Fig. 3.

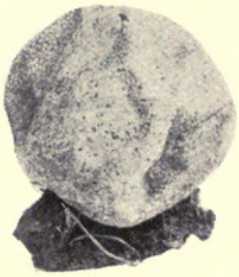

Fig. 4.

Fig. 1, enlarged. Figs. 2, 3, and 4, natural size. All from F. M. Reader, Australia.

BOVISTELLA BOVISTOIDES.

Fig. 5.

Fig. 6.

Fig. 7.

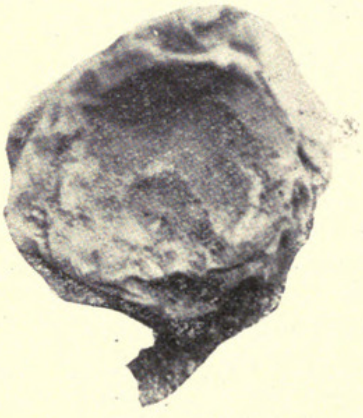

Fig. 8.

Specimens from Professor D. McAlpine, Melbourne.

BOVISTELLA GUNNII.

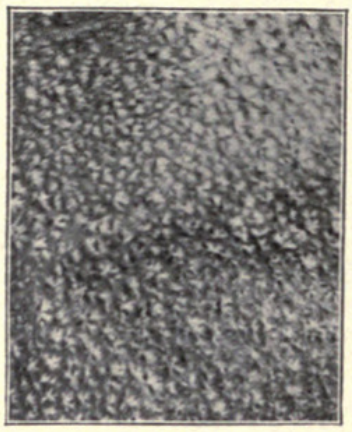

Fig. 9.

Fig. 10

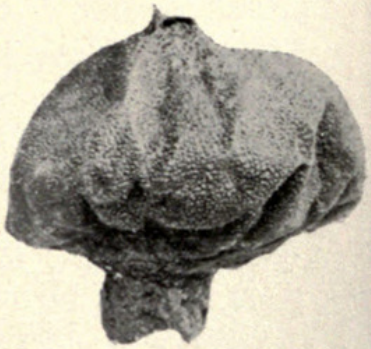

Fig. 11.

Fig. 9, cortex enlarged. Fig. 10, specimen from J. T. Paul, Australia. Fig. 11, specimen from J. G. O. Tepper, Australia.

BOVISTELLA SCABRA.

Fig. 12

Fig. 13.

Fig. 14.

Fig. 15.

Specimens from J. T. Paul, Australia.

BOVISTELLA AUSTRALIANA.

Issued by C. G. LLOYD.

PLATE 71.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Figs. 1 and 2, specimens from Professor D. McAlpine, Melbourne. Figs. 3, 4, 5, and 6, from Robert Brown, New Zealand.

LYCOPERDON PRATENSE.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10

Fig. 11.

Fig. 12

Fig. 13.

Figs. 7 and 8, specimens from F. M. Reader, Australia. Fig. 9, from fresh specimens, Cincinnati. Figs. 10, 11, and 12, from Hollis Webster, Massachusetts. Fig. 13, from L. R. Waldron, Michigan.

LYCOPERDON CEPAEFORME.

Issued by C. G. LLOYD.

PLATE 72.

Fig. 1.

Fig. 2.

Fig. 3.

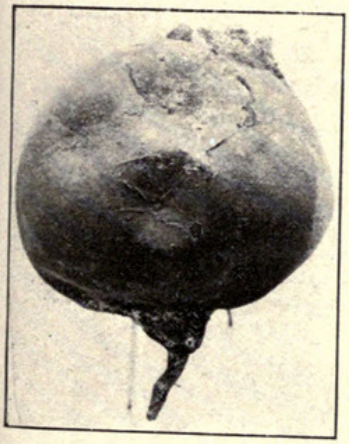

Fig. 4.

Fig. 5.

Figs. 1, 2, and 3, specimens from Professor D. McAlpine, Melbourne. Fig. 4, from J. G. O. Tepper, Australia. Fig. 5, from Dr. Hollós, Hungary.

CALVATIA CANDIDA.

Fig. 6.

Specimen from Professor D. McAlpine, collected by F. M. Reader at Dimboola, Australia.

CALVATIA OLIVACEA.

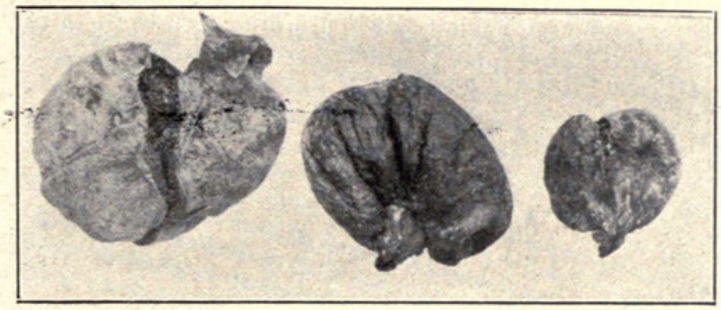

Fig. 1.

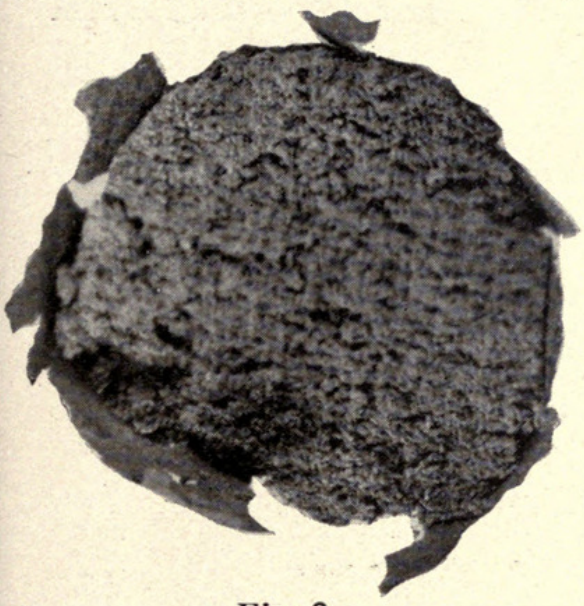

Fig. 2.

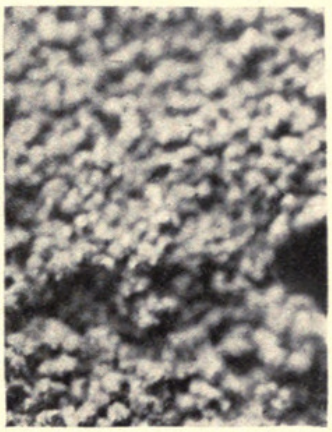

Fig. 3.

Fig. 1, specimens from Rev. L. Badet, Italy. Fig. 2, section enlarged. Fig. 3, gleba enlarged × 10.

ARACHNION ALBUM.

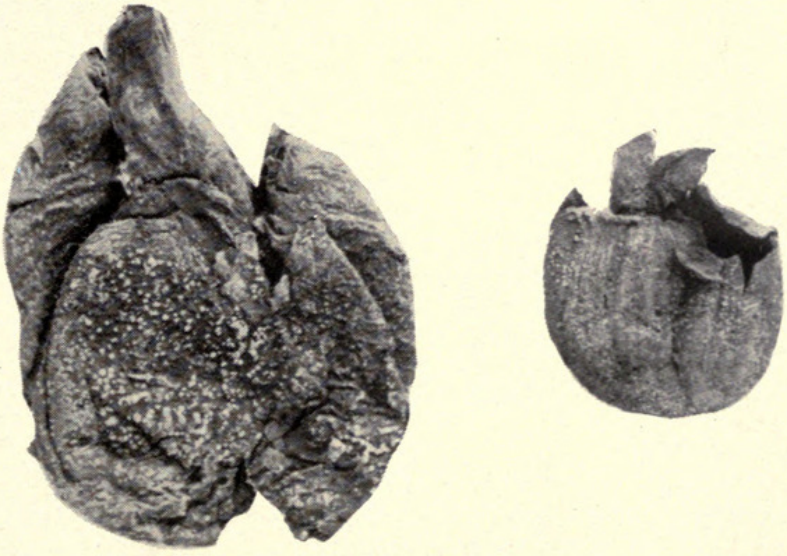

Fig. 4.

Specimens from Professor D. McAlpine, Australia.

ARACHNION RUFUM.

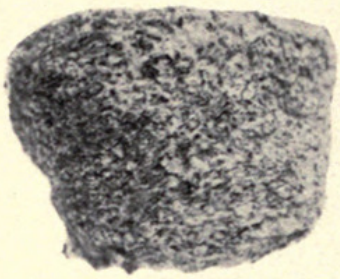

Fig. 5.

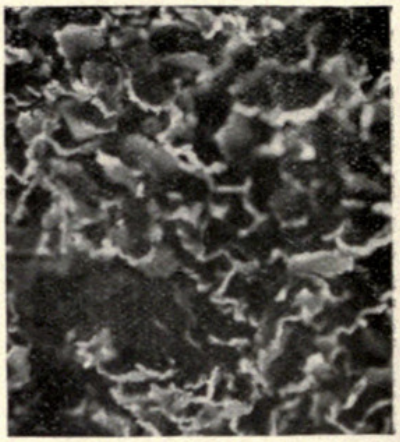

Fig. 6.

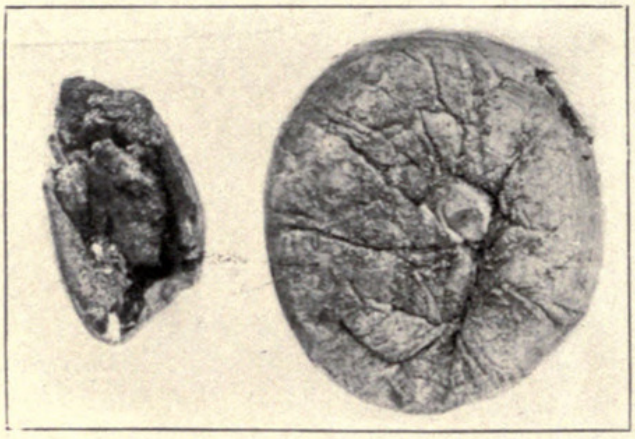

Fig. 7.

Fig. 5, gleba enlarged. Fig. 6, gleba enlarged × 10. Fig. 7, specimens from T. S. Brandegee, Mexico.

HOLOCOTYLON BRANDEGEEANUM.

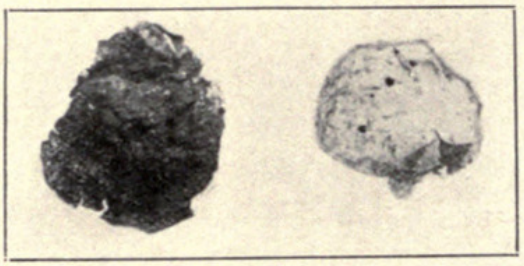

Fig. 8.

Specimens from J. W. Stiles, Texas.

HOLOCOTYLON TEXENSE.