

MYCOLOGICAL NOTES.

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265—NOTES OF TRAVEL.

PARIS.

As I have remained in Paris for three months, trying to get a little practical knowledge of the French language, one can hardly call it "traveling." The mycological interest of Paris, as indeed of France, centers around Prof. Patouillard, who is conceded to be among the best informed men on the subject in Europe. As I had the pleasure of meeting him on a previous visit to Paris, it was not like meeting a stranger. I have seen much of Prof. Patouillard since this visit to Paris and it was a great pleasure to me when I became able to talk with him a little (without the aid of an interpreter) in "broken" French. He has been very kind to me. The Lycoperdons of Europe have always been and are yet a puzzle to me, but many points have been cleared up through the information that Prof. Patouillard has extended. Prof. Patouillard is a man I should judge about fifty years of age. He resides with his family (wife and two young lady daughters) at Neuilly which is just outside the walls of Paris. A pharmacist by profession, he is confined rather closely to his business, but each Tuesday and Saturday he is to be found at the museum in Paris studying fungi, which is his manner of recreating. Monsieur Hariot, the curator of the museum of cryptogamic botany at Paris, is a most genial and accommodating man. Never have I had better facilities to work than at this museum. The key to the museum was literally placed at my service with full permission to study, photograph and make spore mounts of the many rare specimens in the museum. As the museum contains the specimens of Tulasne, Corda, Lévillé, Montagne, as well as specimens sent to them by Berkeley and others particularly by Vittadini, it is needless to say they are of the greatest historical importance. I shall always be grateful for the many courtesies extended to me by Monsieur Hariot.

Monsieur Rolland resides at Neuilly, a close neighbor to Prof. Patouillard. *Comme moi* he is a "celibataire," a man of means, evidently, who finds his amusement in photography and mycology. He has the finest private library on mycology I have ever seen with possibly one exception, that of Prof. Farlow at Cambridge. At a dinner given by Monsieur Rolland I made the acquaintance of Monsieur E. Boudier. Monsieur Boudier, now well advanced in years, is a well known writer on mycology in France. His specialty is the Discomycetes, but he is equally at home with the Agarics and, indeed, all the fungi of France.

PERSOON.

It is not generally known that Persoon spent the latter part of his life at Paris. There are but few traces of him here, for he lived in poverty and local obscurity. There are a few scattering specimens of his determination in the herbarium of Montagne,* and an article in Desvaux' *Journal de Botanique*. These are all that remain to mark the local habitation of perhaps the greatest mycologist who ever lived, the father of the science. His bones for a short time lay in an obscure grave, but as the interment of the poor at Paris is only temporary, they have without doubt long since lost their identity in the accumulation of these grewsome relics in huge piles in the catacombs. It is due to the efforts of Fée that the final years of Persoon's life were not passed in actual misery, and that we have the details of his life at Paris. He published a biography of Persoon in 1846 in Italian which was translated into French in the *Bulletin de Botanique de Belgique*, 1891. As it is to me most interesting reading, I have extracted from it very liberally.

Persoon was born in 1755 at Cape Good Hope, South Africa, at that time a colony of Holland. His father was Dutch, his mother a Hottentot.† Little is known of his childhood, but having lost his parents at an early age he came to Germany where he lived a roving life in several of the university cities and published his early works including his "*Observationes Mycologicæ*" and his "*Synopsis Methodica Fungorum*". The latter is the first really systematic account we have of fungi, and the foundation on which Fries built the superstructure. Persoon came to Paris, we judge, about the beginning of the century, for his last published work in Germany was 1801, and the first in Paris was 1803. His reputation had preceded him and he was at first favorably received, but it was not long until he found himself abandoned and alone in a truly miserable condition, for he was so poor that he is said to have suffered for the common necessities of life. His biographer states that the French might have pardoned him his poverty, but he had another defect "toward which the French are inexorable". He was extraordinarily ugly. We do not reproduce the details of his physiognomy, and we believe no portrait of him exists. His contemporaries at Paris, however, shunned him and he lived here in almost complete isolation notwithstanding his reputation as an author was well known especially in Germany where he was justly considered the "prince of mycologists". He often received consignments of plants from correspondents who naturally supposed him "rich and honored" living as he did in the wealthy city of Paris. These were usually consigned to some bookseller, for Persoon had not the slight funds necessary to pay for their transportation. Fée relates the following. "One day a young bookseller received a little package addressed in Latin to "Monsieur Persoon, Very Learned and Very Illustrious Prince of Mycologists, rue des Charbonnier 2". The bookseller knew the Latin and while he could not understand why such an illustrious and noble

* Two of the *Gastromycetes*, *Lycoperdon perlatum* and *Calvatia caelata*.

† The biographer does not state distinctly, but we presume a native, hence Persoon must have been of mixed blood.

personage chose faubourg Saint Marceau for a place of residence, he thought to avail himself of the package as a means of making his acquaintance. Rue des Charbonnier is a little street in what was then the poorer district of Paris, No. 2 a tenement house. Having been directed to the sixth story by a "merchant of wine"* and having climbed what seemed to him an interminable, bad† stairway he knocked on the door indicated. It was cautiously opened a few inches, a shabbily dressed individual demanded his business, and finally admitted him to the lodgings. It was a little room under the roof.‡ badly lighted but too well ventilated by numerous cracks around windows and doors, and although it was winter there was no fire. A bed and a chair or two, some rough tables covered with packages of plants, books and specimens—such were the surroundings in which this genius worked. The bookseller wishing to flatter him addressed him by the title on the package as "My Prince", but Persoon thinking he was making sport angrily exclaimed "Yes Prince, and here are my subjects. There are some dried between sheets of paper and here are some preserved in alcohol. There are some who will be poisoned with corrosive sublimate, and others who await a burning fire. Instead of saying "Prince" you had better say "Tyrant", and a tyrant more terrible than Denis, because at Syracuse it at least was warm, and I freeze at Paris." So saying he pushed his visitor to the door, and he, thoroughly alarmed at the strange interior, beat a hasty retreat." Fée (1825) found Persoon in the same reduced and humiliating position. He interested himself to ameliorate his condition and solicited the aid of some wealthy friends. Persoon rejected the project stating, "The sentiments of dignity which have always served as a rule for my conduct should exist with all men of science. It would displease me to receive aid in any manner which later might cause me shame for having accepted it. The fact might be distorted to depreciate a man whose name is cited in the scientific world, and I would remain disconsolate." Shortly after this Fée made the acquaintance of a man in close relation with the Prince of Orange of Holland, and as Persoon was really a Dutch subject, having been born in a Dutch colony, the government of Holland was solicited to acquire the herbarium in lieu of an annual pension of eight hundred florins (about three hundred and fifty dollars). "Monsieur Fagel, then ambassador at Paris, visited the herbarium and placed seals on the boxes and packages as a sign of having taken possession. Poor Persoon was humiliated at this operation but he dare not complain." The herbarium was shipped to Leyden, but Persoon continued to live at Paris, in affluence compared to his previous existence, until his death, February 17, 1837. "He died in isolation. The hand that closed his eyes was that of a stranger, and no friend was at his death bed to mourn for him. The botanists at Paris were perhaps ignorant

* As the Parisians call their saloon keepers.

† We can not use the ordinary English word "rickety" applied to bad stairways, for here they are usually made of stone, and however bad they may be they are not rickety.

‡ The same house still remains near the Gare de Lyon. It appears from the outside like ten thousand other houses in Paris, for all are built on the same plan. It is five stories with a mansarde like all houses, and in this "mansarde" (garret we would call it) Persoon lived. I have made inquiries of the "conciergerie", but no tradition even of Persoon is known in that neighborhood.

of his death. No voice eloquent was raised over his mortal remains, obscurely abandoned to the earth, and his coffin was followed to the grave by not even the unique and last companion of the poor." Thus lived and died perhaps the greatest genius mycology has ever known, for Persoon was a builder. He began the work with practically nothing and left a system, of which others have availed themselves with much too little acknowledgment.

SWEDEN.

The lower part of Sweden, as much as I saw of it during the few hours of daylight that I passed through it, seems to be a fertile, sparsely wooded country, well cultivated. The portion around Stockholm, where this summer I spent three months, is mostly rocks and woods. There is but little land suitable for cultivation, the greater portion being in natural woodland. Lumbering is an important industry, but the Swedes do not as we do, cut and slash everything that grows, leaving a desert waste in the trail of the woodcutter. They select for lumber only such trees as have reached a suitable size, leaving the remainder to grow. The soil is usually very scanty, but the ground and rocks are covered with a dense carpet of Sphagnum, the natural home of Agarics. Sweden is preeminently the Paradise for the mycologists. With an abundance of woodland, a cool, moist climate such as Agarics like, I think there is no other country where fungi grows so abundantly. I was fortunate in being there during an unusually wet season. It rained nearly every day, certainly every other day, and I could take a basket any day and collect in an hour more species new to me than I could possibly photograph, and work with the remainder of the day. During three months my list of Agarics reached about 450 species and I had no time to work with Polyporii, Thelephoraceæ and other orders which abound.

L. ROMELL.

I am under many obligations to Mr. Romell. My time was so taken in collection, photography, etc. of specimens that I had little time or inclination to study them. I hastily ran over the descriptions in Fries, labelled them as I thought they were if I made them out at all, and sent the specimens to Mr. Romell who was kind enough to advise me regarding their proper classification. It was surprising to me how many species can be satisfactorily determined in Sweden with a little work. I believe that one who will go to Sweden for several seasons, study the species in the light of Fries' look up illustrations, etc., will arrive at satisfactory conclusions about almost every plant he finds as Mr. Romell has done. Some of the mistakes I made were amusing to me, and some were instructive. For instance, when I found a large, white *Clitocybe* which I could not locate, I was surprised to learn that Fries had included it in *Paxillus (giganteus)* for its spores are *white*. The next species I found with the gills readily separable from the hymenophore. I looked in vain for it in *Paxillus* and learned that it was *Clitocybe gilva*. Now, I do not know whether these species should be called *Clitocybe* or *Paxillus*, but I think they should be put in the same genus.

Mr. Romell is one of the men one can like through and through. He is as full of information regarding the fungi as an egg is of meat; modest, unassuming, he pursues the subject only from the love of acquiring knowledge. He is not engaged in any scheme of publication of "new species" or in juggling with the names of old.

Mr. Romell has a boy that was a marvel to me. A lad perhaps twelve years old, he can tell the Latin name of every Swedish flowering plant. No doubt he inherits much of his aptitude, but I think he is not an exceptional case in Sweden. Botany, there, is a study required in the schools, and it is practical knowledge that is required. It is not the farce it is in the high schools generally in the United States. Is it any wonder that a nation that instills in the mind of every school boy a love of natural history should produce such men as Linnaeus and Fries?

ELIAS FRIES.

It is certainly no exaggeration to say that Fries was the most learned mycologist of his time, especially with regard to the Agarics. Fries made mistakes, no doubt, as everyone makes mistakes, but the fact remains that he made a close, practical study of Agarics for seventy years, in a country where they abound. He gave the world the result of his labors in a concise systematic manner; first acquiring a knowledge of his subject, and then describing his plants in the only way that plants should be described to be intelligently recognized, by contrast of the essential points of difference.

The result is that Fries' species are *facts*, they are tangible, they can be recognized. They are not, as alas is the case with too many of our modern "new species," put forth with a few grains of truth, perhaps hidden in a mass of unimportant and confusing verbosity. Fries, I judge from the stories that still persist, was a positive man. He knew the Agarics as no man probably ever knew them before, and he was conscious of it. His method of work is probably the best—to study and make notes of the plants in the woods where they grow—but, unfortunately, he often neglected to keep specimens of the fleshy fungi and depended almost entirely on his notes. The plants that grow in Sweden to-day do not all of them conform strictly to Fries' descriptions. There are minor discrepancies due probably to the fact that when he came to publish he found lapses in his notes which he supplied from memory or from illustrations that he referred to the species.* But in spite of these minor discrepancies Fries gave the world the only reasonably complete and systematic work on Agarics that exists. I believe if the efforts of mycologists to-day were put forth chiefly to find out what Fries' plants are, then to adopt in the main the names he used, to correct the minor faults of description and classification he made, and to better illustrate his plants, much more rapid progress would be made toward a knowledge of the subject. With exception of the spores Fries did not lay much stress upon the color. He required that his species must have some marked

*It is difficult otherwise to explain a number of obvious errors such as the spores of *Calocera viscosa* are "white;" those of *Lepiota naucina* are "globose;" the gills of *Russula lutea* are "narrow," etc.

difference other than color. While it is undoubtedly true that many species vary in wide latitude as to color, I can not see why if two plants are entirely distinct as to color, and do not shade into each other, they are not good species.

Fries is buried in the cemetery adjoining the University of Upsala. His grave is marked with a massive slab of granite and bears the simple words:

ELIAS FRIES,
Född 1794, Död 1878.
Med maka och barn.

FRIES' DRAWINGS.

Notwithstanding the frequent references in *Monographia* to plates of Agarics ("Nostra in Mus. Ac. Sc. Holm.") Fries was no artist and did not himself leave any drawings on the subject. The plates referred to are preserved in the Botanical Museum of the Royal Academy of Science at Stockholm. They were made by artists employed for the purpose, and Fries "approbavit" them with his autograph signature. I know nothing of the subject myself, but I am told that, while many of the plates give a good idea of the species they are intended to represent, there are others which it is difficult to reconcile with the published works and some have evidently wrong names. The plates were made successively during a number of years so that some are of later and others of an earlier date. In the course of time Fries' views as to some species probably changed with his increased knowledge. Besides, although Fries possessed an unusual capacity, it must have been impossible even for him to keep *all* his species in fresh memory all the time. And sometimes the specimens, from which the drawings were made, did not perhaps exactly agree with the specimens he had in view when making the descriptions, but, for want of proper types, were yet admitted as representatives of the species in question. As a rule the plates are well done, but some of them seem to be exaggerated or crude and seem to fail in plasticity. There were several artists employed on the work and some were much better than others. The Royal Academy of Science at Stockholm supplied the funds for the purpose, which explains why the plates are to be found in that institution. Fries never lived at Stockholm except when he attended the sessions of the Swedish Parliament ("Riksdag") of which he was for a time a member.†

THE MUSEUM AT UPSALA.

The specimens in the museum at Upsala are in better condition than the specimens in any museum I have yet seen. Very carefully enclosed in envelopes they are attached to heavy sheets of paper, and each species is kept in a cover, alphabetically arranged. In addition to these there is a very large collection in glass jars where they are preserved without pressing. I was under many obligations to Dr. Oscar Juel, the courteous director of the museum, for full permission to work with the specimens. To me, of course, the chief interest lay

†Viz: in the years 1844-5 and 1847-8.

in the specimens of Fries' herbarium, which are all marked 'Ex herb. Elias Fries'. There are very few specimens there now that Fries had when he wrote his 'Systema'. In his early days Fries evidently took very little care of his specimens, and the "types" of many of Fries' species of Gastromycetes do not exist. The truth is that Fries' work on the Gastromycetes in "Systema" was chiefly made up from publications and not from his plants. This is evident also from his work, for he states at that time he had only collected three species of Geaster, and his descriptions contain many errors that he drew from inaccurate figures. I do not know but that this is fortunate for most of Fries' "types" are the figures that he cites and these figures can be as accurately known today as when the species were described. The greater part of the specimens in Fries' herbarium today are specimens sent to him after the publication of his work, specimens named from his work by his correspondents and sent to him and placed in his herbarium as received. They are badly misnamed according to Fries' own publications, but I do not feel that Fries should be held responsible for the errors of his correspondents, though of course putting them in his collection without correction in a manner endorsed the determinations. After the appearance of his "Systema" (1829), Fries apparently paid no further attention to the Gastromycetes but devoted his whole time to the Agarics.

UNFINISHED WORK.

The objects of our trip to Sweden were not fully accomplished. While in Washington we were solicited by a lover of the moss family to hunt up when we reached Sweden a certain Swedish gentleman who is playing havoc with the moss names by some system of name juggling and to murder him in the interest of science. We regret that opportunity did not present to carry out this laudable design.

266—UN FESTIN MYCOLOGIQUE.

Le 20 Juin dernier, se trouvaient réunis. autour de la table hospitalière de M. Rolland, à Neuilly: MM. N. Patouillard, E. Boudier, notre aimable hôte et l'auteur.

Ce fut un festin vraiment mycologique. Des champignons ayant été servis, la conversation tomba naturellement sur ces cryptogames. J'éprouvai un grand plaisir à entendre discuter MM. Patouillard et Boudier. Il n'y a pas d'hommes en France, et peut-être dans le monde entier, qui connaissent ce sujet aussi à fond que ces messieurs.

Ce sera pour moi un souvenir charmant, que ce dîner mycologique chez M. Rolland.

267—N. PATOULLARD AND P. HARIOT.

I have seen a great deal of both these gentlemen during my five months in Paris. and they are both men whom the better you know the better you like. Both have been unusually kind to me and both have learned to comprehend my spoken French, for be it known that I speak a French largely my own, and it is not every Frenchman who knows his own language as I speak it. It was nevertheless a great gratification when I became able to converse freely with them.

268—E. BOUDIER.

Towards the close of my stay in Paris, after I had learned enough French to make myself understood (in a broken way) I had the pleasure to déjeuner at the invitation of Monsieur Boudier in company with Prof. Patouillard. Monsieur Boudier is one of the grandest men that mycology claims today. Well advanced in age he has devoted forty years of close study to the fungi of France, especially the Agarics and the Discomycetes. He has prepared a series of plates of the fungi of France, which in beauty, in accuracy, in minute technique are unrivalled by any that exist today. Compared to them the usual published plate of Europe is a cartoon. I do not know what provision has been made for their disposal in the future but I hope they will reach some institution where they can be of use to future students, and where they will be duly appreciated and cared for. The expense will probably preclude their publication, for Monsieur Boudier tells me he has had an estimate made and finds it would cost over 150,000 francs to reproduce them exactly. In my opinion it were better they were never published than to be issued by the cheap machine process by which plates are often printed. E. Boudier is a name practically unknown in America, but I am happy to say it is a name that is duly known and honored in France.

269—LE GENRE LYCOPERDON EN EUROPE.

Je crois qu'il y a une grande confusion au sujet des Lycoperdon d'Europe. Si on veut prendre les rapports et les synonymes donnés dans Saccardo, Massee, Quelet, Fries et Vittadini et essayer de les mettre d'accord, on arrivera à la même conclusion.

Il est impossible à celui qui, en Amérique se baserait sur cette littérature si embrouillée de faire une comparaison entre les plantes d'Amérique et celles d'Europe. Si un travail de ce genre a été fait ce ne peut être qu'un travail établi sur des suppositions.

Il ne peut y avoir aucune certitude dans la nomenclature des Lycoperdon d'Europe si celle-ci est basée sur l' "antériorité". Les premiers noms ont été donnés d'après les dessins de Vaillant, Bulliard, Micheli et Schaeffer, quelquefois assez justes et caractéristiques mais souvent très mal exécutés. Les mycologues qui s'occupent de ces questions n'auront jamais la même opinion sur l'attribution de beaucoup de ces dessins et par conséquent ne seront pas du même avis sur les noms qui leur ont été donnés. C'est une grande faute de s'en rapporter aux vagues données du passé pour choisir les noms que l'on veut attribuer aux plantes. On arrive finalement à un moment où deux savants ne pourront plus s'entendre, surtout, quand il s'agit d'un genre comme celui des Lycoperdon, quand les caractéristiques de chaque espèce se reconnaissent aux spores, capillitium et voile inconnus à ces travailleurs de la première heure qui ont donné des noms et qui se sont surtout basés, dans chaque variété, sur la forme, la taille et la couleur, caractères n'ayant pas d'importance déterminée.

Quand je vins en Europe au printemps dernier. je demandai à tous ceux qui avaient reçu mes publications de m'envoyer tous les spécimens qu'ils pourraient trouver et je suis reconnaissant aux personnes dont les noms suivent qui ont accédé à ma demande: Réverend Torrend, L. Romell. F. de Aranzadi, M. Barbier, Otto Jaap Madame Schultze-Wege, Madame Rousseau, René Ferry, M. Bezzi, J. Lind, L. Rolland O. Mattiolo, B. Studer, E. W. Swanton, Denis Cruchet, P. Hariot, A. Jaczewski, L'Abbé Hy, Docteur X. Gillot, J. Lagarde, J. Brunnthaler, Chas. van Bambeke, A. Aclocque, L. Trabut, J. Rompel, Docteur Moreau. Je dois mentionner particulièrement le Père Torrend qui m'a envoyé une grand nombre de spécimens et dans de magnifiques conditions et L. Romell qui a puisé avec générosité dans sa collection particulière pour me satisfaire.

Dans la bibliothèque du Museum de Paris, j'ai recherché et copié pour ainsi dire tous les dessins qui ont été faits en Europe sur les Lycoperdon y compris quelques travaux rares, par exemple, la Flora Danica que je n'avais jamais vue auparavant. J'ai puisé aussi des renseignements importants dans des conversations avec Messieurs Patouillard et Boudier et dans ma correspondance avec le Réverend Bresadola. J'ai étudié avec le plus grand soin aussi bien les échantillons que j'ai recus, que ceux du Museum de Paris y compris un grand nombre de spécimens authentiques provenant de Vittadini. Je commence à avoir une idée sur ce sujet mais je considère qu'il y a encore beaucoup à apprendre. J'ai reçu un certain nombre d'espèces que je ne peux pas nommer, mais j'espère néanmoins que les études que je compte faire à Kew et peut-être à Berlin m'éclaireront davantage.

Ce qui va suivre est un aperçu des principales caractéristiques des espèces d'Europe.

Je m'occuperai d'abord du genre *Calvatia* qui n'est généralement pas reconnu en Europe mais que je considère pourtant comme très bon. Au sujet des vrais Lycoperdon, je m'arrêterai au groupe de ceux qui s'ouvrent au moyen d'une bouche définie. Les *Calvatia* sont de grandes espèces qui perdent leurs spores quand le périidium tombe. De plus il y a une différence entre le capillitium des Lycoperdon typiques et celui des *Calvatia*. Dans les Lycoperdon, le capillitium forme des filaments qui naissent de la columelle et du périidium et qui se rejoignent sans se dépasser; et si on ouvre un spécimen, on peut voir une brisure très nette à l'endroit où ces deux sortes de capillitium se rejoignent. Une semblable disposition n'existe pas dans les *Calvatia*, mais dans beaucoup de Lycoperdon cette disposition n'est pas visible et je ne crois pas que cette particularité soit aussi bonne pour juger de la différence qu'en se basant sur la brisure du périidium. Il existe pourtant une espèce, le Lycoperdon hiemale, qui est intermédiaire dans sa déhiscence.

Le nom de *Calvatia* a été proposé par Fries pour une plante américaine qu'il ne pouvait faire rentrer ni dans la classe de ses Lycoperdon d'Europe, ni dans celle des *Bovista*; mais il n'avait alors aucune idée de ce genre tel qu'il est compris de nos jours. La véritable signification du genre *Calvatia* a été donnée ces dernières années par Morgan. Pour montrer comment ce genre a été compris par De Toni

(Sylloge) il suffit de remarquer qu'il ne renferme dans ce genre qu'une seule espèce d'Europe, qui n'a aucun rapport avec les *Calvatia* et qu'il ne mentionne aucune des cinq espèces également européennes qui, probablement, appartiennent à ce genre. Ces cinq espèces sont: *Calvatia caelata*, *saccata*, *fragilis*, peut-être *gigantea* et *hiemalis*, et sans aucun doute d'autres que je ne connais pas.

Calvatia caelata est commun et se reconnaît facilement à sa forme, à ses spores petites, lisses et de couleur olive et surtout aux filaments de la glebe qui sont gros, épais, fortement colorés et ont plusieurs fois le diamètre des spores. C'est, je crois, la seule espèce d'Europe ayant un capillitium semblable.

Calvatia saccata a généralement une longue tige et une petite tête, telles que les représente l'excellent dessin cité habituellement du *Flora Danica* t. 1139. J'ai reçu de René Ferry un spécimen qui se rapproche par sa forme de *C. caelata*, mais ses grosses spores échinulées, d'une couleur brun foncé (mais jamais pourpre) le font de suite reconnaître comme n'appartenant pas à cette espèce. Le *Lycoperdon saccatum*, que Bonorden décrit comme s'entr'ouvrant par une petite bouche, est sans aucun doute une autre plante.

Calvatia fragilis est la seule espèce d'Europe ayant des spores pourpres et est en réalité une petite variété du *Calvatia cyathiformis* si commun en Amérique. C'est une plante du sud de l'Europe qu'on ne trouve pas dans les pays du nord quoique la plante d'Amérique pousse même au Canada.

Calvatia gigantea (ou *maxima* ou *Bovista*, comme vous voudrez l'appeler) est le "vesse-loup géant". Généralement rond il atteint des dimensions plus grandes que les autres espèces. Il diffère des autres *Calvatia* comme le *Lycoperdon polymorphum* diffère des autres *Lycoperdon*. Sa base stérile est très petite et n'est pas formée de larges cavités comme dans les autres espèces, mais elle est compacte et son tissu est semblable à celui de la gleba. Mon opinion est que c'est un bon genre mais nous ne pouvons lui donner un nom générique quoiqu'on lui ait attribué beaucoup de noms spécifiques. Nous ne pouvons pas employer le mot *Globaria* (qui avait été proposé principalement pour remplacer celui de *Bovista*, je ne sais pas pourquoi) quoiqu'il soit employé dans le nouvel ouvrage d'Engler et Prantl où sont confondues deux plantes, *gigantea* et *pusilla*, qui sont les plus grands et les plus petits représentants des vesse-loups connus, n'ayant de semblable entre eux que leur forme qui est ronde.

Calvatia hiemalis est une plante dont je ne saurais dire si c'est un *Calvatia* ou un *Lycoperdon*, comme je l'ai ailleurs déjà écrit. D'après le dessin de Vittadini, c'est une plante bien connue comme ayant non-seulement une cloison bien définie, séparant les parties fertiles des parties stériles, mais encore un capillitium hyalin. Nous pouvons être certains du *Lycoperdon hiemale* de Vittadini, étant donné que son spécimen se trouve au Museum de Paris, ainsi que de sa description; mais nous ne sommes pas aussi sûrs du dessin de Bulliard t. 72 rapporté au même nom. Nous croyons que c'est le *Lycoperdon pratense* de Persoon, figuré dans le *Journal de Botanique*, mais le dessin

de Schaeffer t. 184 du *Lycoperdon papillatum*, souvent cité comme étant cette plante, est très douteux.

Dans les *Lycoperdon* véritables, on peut citer le *Lycoperdon gemmatum* et le *Lycoperdon piriforme*, espèces communes en Europe ainsi que probablement dans toutes les parties du monde tempérées. Le *Lycoperdon gemmatum* devrait en toute justice être appelé *Lycoperdon perlatum*, car, de tous les anciens écrivains, Persoon est le seul qui ait eu une opinion nette sur le voile de cette plante, ce qui la distingue de toutes les autres espèces. La description claire et concise (parue dans le *Journal de Botanique*) qu'il a faite des échinules particulières à cette espèce n'a pas été surpassée jusqu'à aujourd'hui. Le *Lycoperdon gemmatum* de Schaeffer comprend d'autres plantes et Fries emploie ce nom pour se tirer d'affaire quand il est embarrassé. *Gemmatum* est pourtant le meilleur nom pour rappeler la forme des aiguillons soudés entre eux et imitant des sortes de bourgeons qui ne se trouvent sur aucune autre espèce. La forme et la dimension varient beaucoup, mais les aiguillons et la structure interne sont toujours les mêmes.

Le *Lycoperdon piriforme* est aussi une plante commune partout et pousse sur le bois pourri, sur lequel ses racines se développent, quand on le rencontre sur la terre. Sa columelle proéminente, ses spores petites et lisses et les longs filaments blancs de ses racines caractérisent toujours cette espèce quoiqu'elle présente beaucoup de formes différentes et qu'elle ne soit toujours faite "comme une poire."

Le *Lycoperdon polymorphum* est une plante très commune nettement caractérisée et mal connue en Amérique et en Europe. À notre connaissance, un auteur américain l'a dénommée de trois noms différents. Il a une base stérile, de conformation spéciale, ne présentant pas de cavités comme les autres espèces, mais compacte avec le tissu semblable à celui de la partie fertile. Quelquefois la partie stérile se développe dans de telles proportions qu'elle produit une base en forme de tige. C'est là un des caractères de beaucoup d'échantillons que j'ai recus du Portugal du Père Torrend. Dans les régions septentrionales, la base n'est pas aussi développée et le champignon est plus arrondi. Quelquefois, je crois qu'il n'y a pas de base stérile ce qui est le cas j'en suis convaincu du *Lycoperdon dermoxanthum* de Vittadini (d'après le type du Museum de Paris). Cette plante a reçu sans aucun doute des noms dès la première heure; *Lycoperdon furfura-ceum* est probablement l'un d'eux, mais je crois que le dessin de Schaeffer n'est pas suffisamment exact pour pouvoir y être rapporté avec certitude. Le *Lycoperdon cepaeforme*, d'après toutes les formes différentes figurées par Bulliard est probablement la même espèce. La plante est plus jaune que les *Lycoperdon*s en général et le capillitium est fortement coloré. Je l'ai vue de couleur jaune clair au moment de la maturité des spores. (À cette période la plante est appelée en Amérique *Lycoperdon coloratum*).

La différence entre le *Lycoperdon pusillum* (avec les mêmes spores et la même voile que dans le *Lycoperdon polymorphum*) et les formes sans base stérile de cette espèce, ne me semble pas très claire et je crois que les formes arrondies du *Lycoperdon polymorphum* ont

souvent été prises pour le *Lycoperdon pusillum*. Pourtant je crois que le *Lycoperdon pusillum* tel que l'a montré Quelet est une espèce distincte ayant une gleba de couleur brun foncé, de dimensions plus petites, n'ayant jamais de base stérile et pourvue d'une forte racine pivotante. J'ai vu quelquefois des échantillons européens que je prends pour des *Lycoperdon pusillum*, mais tous ceux que j'ai observés en Amérique doivent être rapportés au *Lycoperdon polymorphum* mais avec une base stérile très petite, quoique distincte, ressemblant tellement à la partie fertile qu'il faut l'examiner avec soin.

Le *Lycoperdon marginatum* et le *Lycoperdon cruciatum* d'Europe, ainsi que le *Lycoperdon separans* des États-Unis, ont tous le même voile si particulier et les mêmes spores. Ils appartiennent probablement tous à la même espèce mais je ne puis comprendre pourquoi l'ensemble des spores est de couleur si sombre en Europe quand il est de couleur claire en Amérique.

Le *Lycoperdon velatum*, d'après le dessin de Vittadini et peut-être mieux encore d'après la figure ancienne de Micheli, est une espèce très bien caractérisée par son voile laineux qui pèle par grands morceaux. C'est une plante rare en Europe. D'après les observations de Persoon (*Journal de Botanique*, 1802) il est impossible que ce soit "mammaeformis" comme on l'a si souvent dit.

Le *Lycoperdon echinulatum* avec ses fortes arêtes et ses spores de grandes dimensions, échinulées et pourpres, est une espèce si différente des autres qu'il est difficile de penser qu'il puisse y avoir confusion. Toutefois Fries donne ce même nom à une variété de *Lycoperdon gemmatum* (sic) et décrit encore la plante comme un *Lycoperdon constellatum*. La plante est très bien figurée par Quélet ainsi que dans la *Flora Danica* (t. 1800)

Les *Lycoperdon atropurpureum*, *hirtum* et *umbrinum* sont des plantes ayant les mêmes spores que le *Lycoperdon echinatum* mais différent beaucoup quant à leurs voiles. Comment diffèrent-ils entre eux, si toutefois ils diffèrent, je n'en sais rien? Je crois pourtant qu'il y a plus d'une espèce parmi eux.

Quant au nom de *Lycoperdon excipuliforme* je n'ai pas de données exactes à son sujet. Celui de Fries s'applique à une variété de *gemmatum* qui ne mérite même pas de dénomination particulière. La figure de Richon et de Roze, a trait apparemment au *Lycoperdon saccatum*. La plante appelée *Lycoperdon piriforme* var. *excipuliforme*, est tout à fait distincte, par sa forme, du *Lycoperdon piriforme* habituel et à mon avis, doit être distinguée, mais je crois que ce n'est pas la plante qui est généralement décrite sous le nom de *Lycoperdon excipuliforme*.

Le nom de *Lycoperdon pedicellatum*, donné par Peck en Amérique, devra être appliqué également en Europe où on décrit, peu de temps après la même plante comme *Lycoperdon caudatum*. C'est une espèce toute particulière avec des spores ne ressemblant en rien à celle des *Lycoperdon* véritables, en ce sens qu'elles ont de longues queues, caractère assez fréquent dans les *Bovista* mais pas connu ailleurs dans le genre *Lycoperdon*. Je n'en ai vu qu'un échantillon d'Europe (Suède), grâce à M. Romell. Mais on trouve le *Lycoperdon pedicellatum* en Allemagne et c'est probablement une plante du Nord, qui n'est pas rare aux États-Unis.

Il existe un grand nombre de noms souvent signalés dans les ouvrages européens, mais je ne connais pas les plantes auxquelles on les rapporte. C'est le cas des *Lycoperdon candidum*, *montanum*, *molle* etc. aussi bien que des treize (chiffre fatidique) espèces embarrassantes que Bonorden a proposées. J'espère que mon prochain séjour dans les Musées d'Europe m'éclairera à leur sujet. Je vais faire mon possible pour voir les types de Persoon, si ils existent. car de tous les travailleurs de la première heure, je crois que Persoon seul a formulé son opinion d'après les plantes qu'il avait étudiées. Il est tout à fait évident que les autres travaux anciens ont été faits d'après des dessins vagues et souvent peu exacts.

270—NOMENCLATURE.

While I can candidly say I have no hope of inducing others to abandon the present system of personal advertisement in affixing their names to the names of plants, I think I have succeeded in drawing attention to the evils of the system. I was gratified to receive a letter from one of the foremost mycologists of America, one who has published much good work and whose name I do not give as I do not wish to draw him into the discussion. It read as follows: "Let me say I am coming to believe your idea upon the omission of authors' names in connection with plant names is a desirable thing. The present condition of botanical nomenclature, especially in America, is unsatisfactory to everybody, even the most enthusiastic advocate of the newer procedure. If we could have a general botanical congress for the adoption of names in certain standard works, I believe it would be better than trying to live by the rules of priority. However heterodox this may seem to many, I am persuaded that the result would be beneficial if the agreement could be decidedly and widely made. Success to you in your laudable efforts."

Personally I do not feel that such agreement is practicable or necessary. No congress can legislate for an individual worker. The names an author uses should reflect his views of classification.

The genus *Bovistella* was discovered and described by an American. I learned the boundaries of the genus from his work, and I find in the herbaria of Europe a large number of plants, now called *Lycoperdon* and *Mycenastrum*, belonging to it. Should I locate and publish them I would have to call them *Bovistellas* in keeping with my present views as to how they should be classified. No congress or course could bind me to call them *Lycoperdons* and *Mycenastrums* simply because they appear under these genera now in all books "standard" and otherwise. Nor should I do so, for to my mind they are not *Lycoperdons* and much less are they *Mycenastrums*. There is nothing in the situation, however, to necessitate or merit my name being put after the "new combination". If I had worked with "puff balls" before the genus *Bovistella* was pointed out, perhaps I would have overlooked it as did all the European authors, but now that the genus has been pointed out it is not particularly to my credit, but on the contrary would be strongly to my discredit, if I were not able to recognize the misplaced specimens when I find them out of their class.

Changes in plant names are inevitable if we are to have any advance in classification, but changes should be gradual and are demanded solely by the progress made in classification. One of the greatest evils in modern botany is the class of pure name-jugglers, who for the love of seeing their names added to plants dig up all kinds of vague excuses to change plant names. These men do not perhaps advance a single new thought or idea regarding the relationships or classification of plants. They simply dig back into the musty and dim records of the past, and unearth some forgotten fact, or more often make some supposition or guess, and then proceed to elaborate a lot of new combinations to which their own is invariably added. It is not, however, the use of personal names in citations to which I object. It is the abuse to which this system leads. I firmly believe if it were not for this abuse we would be spared most of the modern name-juggling that is bringing our plant names into such a chaotic condition. In the puff ball world men juggle plants they never saw from out one genus into another wherein they have not the slightest relationship, solely it appears to me, for the purpose of making a change. Men "describe new species", and yet it is evident judging from their work that at the time they are absolutely innocent of any knowledge of the existence of the genus to which their plant actually belongs. If a man does not know the genera, how can he be expected to tell whether or not his species is new?

271--NOTES ON SPECIMENS IN FRIES' HERBARIUM.

Labeled "*Cauloglossum pistillaris*", published by Fries as "*Cauloglossum elatum*", type from Koenig, India. The specimen is a Podaxon with bright olive spores and without trace of the peridium.

Cauloglossum transversarium. The specimens are from Curtis. One is labeled "*Arthymenium transversarium*, B. & C." Fries has this notation—"Scarcely cogenetic with *C. elatum*, differing from the section by the pileus continuous with the stipe". As the specimen is not cut open Fries evidently did not know the vast internal difference between it and "*C. elatum*".

Coilomyces Schweinitzii, from Berkeley collection by Schweinitz in Surinam and called by Schweinitz "*Onygena Lycoperdoides*". The specimens are two in fine condition, but as neither is cut open I do not know their internal structure. Externally they resemble unopened *Geaster mirabilis*. The genus *Coilomyces* is said to be a peculiar genus hollow at the center.

"*Disciseda compacta*". Czerniaiev sent Fries abundant specimens of his species. It is *Catastoma subterranea*. Czerniaiev undoubtedly anticipated Morgan in the genus but it was so vaguely described that it remained unrecognized for sixty years, until an investigator who had learned Morgan's genus from his specimens recognized Czerniaiev's in the light of Morgan's work, and used it as

an excuse to add his own name to it. Had he been sincere he would have hunted up these specimens and *substituted* Czerniaiev's name. The beauty of the modern method of juggling names is well illustrated by the history of this plant. A Hungarian mycologist called the plant *Bovista debreceniensis*. Hollós in 1899 published it under that name, not recognizing from his own work the claim the plant has to generic rank. Then he received some specimens from Morgan of *Catastoma subterranea*, and as he saw it was the same plant he proceeded at once to juggle it and publish it as "*Catastoma debreceniensis*, Hollós" (1900). The second year after, having learned Morgan's genus, he recognized the vague record of Czerniaiev, and proceeded at once to juggle a new name, "*Disciseda debreceniensis*, Hollós" (1902). Information has just been published that the plant is the same as *Lycoperdon defossum*. He can now juggle it to "*Disciseda defossa*, Hollós," and if he will cross the Atlantic and examine Schweinitz's herbarium he will find evidence sufficient to again juggle it to "*Disciseda candida*, Hollós."

Bovista tunicata (type). This species is in my opinion simply an immature *plumbea* which has retained the olive color of the gleba. As I have already given my views (*Myc. Notes*, p. 115) on the value of color characters of the gleba of *Bovista plumbea*, it is not necessary to here repeat them.

Geaster Bryantii, type from Berkeley, as you will find it illustrated on p. 16, *Geastrae*.

Geaster calyculatus, type from Fuckel. The specimen is *pectinatus* notwithstanding the illustration Fuckel gives is that of *Bryantii*. Fuckel probably did not distinguish the two species which are very similar.

Geaster capensis type from Cape Bonæ Spei. I think it is *saccatus*.

"*Geaster Curtisii*, Rav." from Curtis. This is *radicans*, or rather as I have previously stated the *fornicate* condition of *velutinus*. It is very probable that Curtis sent this specimen to Berkeley so labeled, as it is the second I have seen that he so distributed, but Berkeley did not propose to advertise two Americans by calling it "*Geaster Curtisii*, Rav.", so he changed it to "*Geaster radicans*, Berkeley" and he did right.

Geaster saccatus, Brazil, Lund. The type specimen is there but it is so small and twisted up and the endoperidium does not show so that I think no one could say whether or not it is the same plant now so called in the United States. As previously stated if the name *Geaster saccatus* has a meaning, it was given to it by Berkeley.

"*Geaster stellaris*, Fries MSS". These specimens are historically of interest, as they probably explain Fries' views of the name "*Geaster stellatum*" in his "*Systema*". The plants are *Geaster floriformis*. In this connection I wish to pay my respects to the recently juggled name "*stellatum*" for *hygrometricus*. If there is a name particularly

appropriate for this Geaster, it is *hygrometricus*, and is thoroughly established by a hundred years of constant and universal use. The early botanists who had very vague ideas as to Geasters thought they were all "stellate Lycoperdons". Linnæus' "*Lycoperdon stellatum*" is simply a generic idea for the genus Geaster. He knew no species and referred to "*Lycoperdon stellatum*" every picture of a Geaster he found, some half dozen different species. To attempt to substitute for a definite, descriptive name such as *hygrometricus* a vague, meaningless name like "stellatum" seems to me very bad. Nor is that all. Those who take Morgan's idea of the genus *Astræus*, and substitute a new combination, "*Astræus stellatus*" commit a further violation of their own "rules" of which they are probably not aware. Morgan was not the first to isolate Geaster *hygrometricus* on structural grounds. Corda did exactly the same thing, but in a different manner so that there still remains abundant excuse to juggle "*Astræus stellatus*" back to "*Geaster stellatus*" and juggle all the other Geasters to *Plecostoma*, forming new combinations for all the Geasters. The early workers with the *Gastromycetes*, especially Fries, worked mostly with books. Fries' "*Systema*" is a very complete historical account up to that time. It is a simple matter to take a copy of Pritzel, look up dates and juggle the names about on the synonyms given by Fries. It is an easy way of gaining a little notoriety, neither honest nor meritorious.

"*Geastrum minimum*" type from Chevallier, a plant of great historical interest, probably the only one in existence. It is the plant we have illustrated as *Schmidelii*, but as Chevallier published fifteen years before Vittadini, of course. Chevallier gave a very poor figure of his plant and a recent guess has been published that it was *Geaster asper*.

Geaster granulatus from Fuckel=*G. minimus*, confirming synonym already given.

Secotium Thunii type from Schulzer. The plant does not differ in any respect from *Secotium acuminatum*.

Geaster melanocephalus, Ostergothland, E. Fries. I do not think the name was ever published, but record it in case it has been. The plant is *Geaster limbatus*.

Lycoperdon constellatum, type Fries. This characteristic plant is as is well known the same as Persoon's *L. echinatum*.

Geaster fimbriatus, which is the most common species in Central Europe, is abundantly represented in the collection at Upsala. Fries did not distinguish the American plant (which Berkeley called "*sacatus*") as different, for the specimens from Pennsylvania are labeled "*fimbriatus*".

Geaster mammosus. Though Fries is often cited as the author of this species, it is evident both from his description and from the only specimen in his collection (included among specimens of *hygrometricus*) that he did not know Chevallier's plant.



Lloyd, C. G. 1904. "Mycological Notes, No. 16 (265-271)." *Mycological writings of C. G. Lloyd* 1, 157–172.

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