

SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
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ARTICLE BY DR. STUNTZ

We are very fortunate and grateful to Dr. Stuntz that he gave us permission to publish the speech he gave at Cispus II. on the history of the development of the present system of classification of mushrooms. Due to the limited space in any one issue of Spore Prints it has to be serialized. The first installment covers the Pre-Friesian Period, 1600 - 1821.

DEVELOPMENT OF CLASSIFICATION OF THE MACROBASIDIOMYCETES Dr. Daniel E. Stuntz

The history of development of the present system of classification of agarics and other larger Basidiomycetes can be divided into three periods:

- I. Pre-Friesian; 1600's to 1821
- II. Friesian; 1821 to about 1920
- III. Modern; 1920 to the present (- and future??)

I. The pre-Friesian period.

From the time of the Greek herbal of Dioscorides (first century A.D.) to the 16th. century, knowledge of fungi scarcely advanced beyond what was known about them by the Greeks and Romans, namely, how to recognize a few edible and a few poisonous ones, but nothing about their structure or real nature. During the Renaissance (1400's - 1600's) botanical investigation escaped from the bondage of Aristotle and Dioscorides under which it had lain during the Dark Ages, and more realistic accounts of plants began to appear in the form of the herbals, forerunners of the modern botanical floras. The herbalists described and illustrated (crudely) a few of the more conspicuous fungi, and made some attempt at grouping them, often on very fanciful bases, but they had no real knowledge of fungal structure, and hence no clear idea of fungal interrelationships. The practise of grouping species in a genus was not established until the end of the 1600's, and even then the current method of naming plants was so cumbersome as to discourage any but the most dedicated investigator. An example from early flora, the "Synopsis Methodica Stirpium Britannicarum" of John Ray (1696) will suffice: this is how he named what we now call *Russula emetica*. "Fungus major rubescens pediculo brevi crasso, lamellis crebris albenibus".

Small wonder that information about fungi increased only slowly, under such a handicap. The binomial system of scientific names, where the name consists of two words, the genus and the species, was established by Linnaeus, whose prestige as a botanical authority guaranteed its use from then on. In the meantime, two important publications laid the foundation for the future development of Mycology. These were: Sebastian Vaillant, "Botanicon Parisiense". 1727

Pier A. Micheli, "Nova Plantarum Genera". 1729

In both of these the fungi included were carefully observed, and so well illustrated that many can be recognized today from the illustrations alone. Vaillant's grouping of the fungi showed his lack of appreciation of their interrelationships, but his illustrations were accurate and detailed, among the best of that period. Micheli, on the other hand, can fairly be said to have devised the first logical classification of fungi, elementary though it was, and to have been the first to examine them

with the crude microscopes of his time (about equal to a low-power hand lens). He distinguished between those with gills, with pores, with branched fruiting bodies, etc., and made his genera accordingly. He was the first to demonstrate by simple but ingenious and convincing experiments that the spores of fungi (called "seminal dust" in those days) were their means of reproduction, and that the spores of a particular fungus would give rise only to that fungus.

During the remainder of the 1700's the fungi, now better understood than during the period of the herbalists, began to be included in greater numbers in the regional floras of those times.

Two examples are:

J.A. Scopoli, "Flora Carniolica, vol. II", 1772, with 85 pages devoted to the fungi; and

John Sibthorpe, "Flora Oxoniensis", 1794, with 75 pages describing the fungi found around Oxford, England.

During the last half of the 1700's there appeared four large iconographies (collections of colored plates) devoted entirely or in large part to fungi, that exerted a considerable influence on the mycologists of the early 1800's. The first of these was "Fungorum qui in Bavaria et Palatinatu circa Ratisbonam nascuntur Icones" by J.C. Schaeffer, a priest in the seminary at Regensburg, Bavaria (Ratisbona = Regensburg). The four volumes were published over a period from 1762 to 1774, and included 330 colored plates of fungi, the first extensive set of such illustrations. Many of Schaeffer's species were recognized by Fries and other mycologists, and for that reason the "icones" is an important source-book.

Two other iconographies concerned British fungi. James Bolton published his "An History of Fungusses Growing about Halifax", 1788 - 1791, with 182 plates, not always of the best quality perhaps, but an important early visual record of British mushrooms. James Sowerby's "Coloured Figures of English Fungi or Mushrooms" was begun in 1795 and finished 20 years later. Its 440 colored plates were of excellent quality, portraying with great accuracy the form and color of the fungi they depicted. In the meantime, Pierre Bulliard in France began the publication of his monumental "Herbier de la France" in 1780, and brought it to a close with plate no. 600 in 1793. Somewhat more than a third of the plates represent fungi, and the rest are of flowering plants. Colored illustrations in those times were made by hand-coloring copper engravings, lithography not having yet been invented. Bulliard, however, devised a process of color printing the plates of the *Herbier*, and to this day no one is sure just what his process was, nor, apparently, was it ever used again by anyone else. The *Herbier*, like Schaeffer's *Icones*, is an important source-book, as many mycologists of the 1800's accepted Bulliard's species.

By the first decade of the 1800's there had accumulated a large body of information about fungi, but it was uncoordinated, difficult of access, and confusing. Every author used his own scheme of classification, making comparisons difficult or impossible, and identifications uncertain. Evidently, someone was needed who could bring the scattered fragments together in an acceptable and usable classification; and fortunately for mycology, it was just at this time that two such individuals

—(continued on the last page)—



Spore Prints

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CALENDAR

- Jan. 12 Monday, Membership Meeting, 8:00 pm
- Jan. 19 Board Meeting
- Jan. 23 Actual Deadline for Spore Print Material. Send all articles, art work, and especially recent photos to the editor, %4029 E.Madison, Seattle, Wa., 98102
- Feb. 9 Monday, Membership Meeting, 8:00 pm
- March 20, Saturday, The 12th Annual Survivors' Banquet

HERE AND THERE H.R.H.

On December 2, George Rafanelli was the banquet speaker for the Annual Banquet of the Rainier Chapter of the Washington State Nurserymen Association. The banquet was held at the Blue Boy Restaurant in Puyallup.

..... We hope that the following correction in the Chicago Tribune did not appear too late: "Unfortunately, the illustrations of edible and poisonous mushrooms were reversed on page 14 of the Sunday edition".....

We wish a speedy and complete recovery to Dr. Patricia A. Winter, a Board Member of PSMS, who is recuperating from a triple-fractured ankle.

Membership Meeting

Monday, January 12, 1976, 8:00 pm., Eames Theater Pacific Science Center.

Program: Brian Luther will talk about Mushroom Odors and Scents. He will illustrate his lecture with samples and slides. Sure sounds like an interesting and unusual program that we should not miss.

NO BOARD NEWS THIS ISSUE H.R.H.

Since no quorum was achieved for the December 22nd board meeting, those present reflected on the past year and informally discussed matters important to PSMS.

The inventory of the Poison Pamphlet consists of 10 copies. It was suggested that another edition be published which would be updated with material that has since been learned, and that a two page insert in color of the mushrooms discussed in the pamphlet should be included. The original pamphlet was distributed to all physicians and hospitals in the area and was available to PSMS members.

In addition, the educational materials booklet compiled by the Educational Committee of PSMS with the assistance of Dr. Stuntz needs updating and re-issuing. This booklet has been used in PSMS classes in the past few years.

Sigrun Budnik has resigned as membership chairman (for business reasons) and Mrs. Sally Ann Hansen who had assisted Sigrun all along has become the new membership chairman. (please address your letters to Mrs... (not Ms.) when you send in your 1976 dues. She wants it that way.)

NEEDED BY YOUR EDITOR H.R.H.

Your editor, Hildegard R. Hendrickson (phone 523-2892) needs a typist to assist in the preparation of Spore Prints. If I can't get help I will have to resign as editor, but maybe that would be for the better any way. So if I don't hear from someone during the next month I will have to advertise the job of editor in February.

BANQUET NEWS

Plans for a delightful and memorable evening at our 12th Annual Survivors' Banquet are well under way. The occasion is March 20, 1976 at the Moose Lodge (located across the street from the Seattle Center Parking Garage on Mercer Street). The banquet will be served buffet style and the menu will consist of baron of beef and chicken accompanied by many salads and mushrooms. B.Y.O.B. - ice and mixers are included in the ticket price of \$7.50 (same as last year, in spite of inflation, etc.) Dancing will follow the meal. Since only 400 persons can be accommodated we advise you to get your tickets early (first come - first served). You may either buy your tickets at the January membership meeting, or order them from Sigrun Budnik, 16183 S.E. 42nd Street, Bellevue, Wa., 98006 by including a self-addressed, stamped envelope with your check.

Remember that the Banquet serves as the Annual Meeting of our Society as provided by the by-laws. In addition to the introduction of incoming officers and trustees, awards are conferred. Our Society likes to combine a little pleasure with business at this gala affair. Don't miss this special opportunity to socialize with old and new friends under relaxed conditions. You will be surprised how friendly and nice most of your fellow PSMS members are. And most of all, have a good time. See you at the banquet ... and looking forward to it.

WANTED: MUSHROOM DONATIONS FOR THE BANQUET

Our banquet chairman, Doris Paduano, (phone: 782-8382) would like to hear from you if you have canned, frozen, or dried mushrooms which you want to donate for our banquet. It is only through our combined efforts and generosity that we can enjoy mushrooms in practically every dish served at the banquet. So please pick up your phone and call Doris. (P.S. I just did.)

REMINDER FOR DUES FOR 1976 Sally Ann Hansen

Your membership dues for 1976 have to be received by our new membership chairman, Mrs. Sally Ann Hansen, either at her home, 10433 - 1st Ave.S.W., Seattle, 98146 or at the formal address of PSMS, 200 - 2nd Ave.N., Seattle, 98109 or your name will be removed from our mailing list. Sally Ann Hansen will be at the January membership meeting. Note to our NEW PSMS members. If you have joined during the last months of 1975 your dues are paid until the end of 1976, and the reminder does not apply to you.

THE MYSTERY OF THE MISSING MUSHROOM by Sally Ann Hansen

There had been plenty of talk lately about the missing mushrooms. Even thoughts of organizing searches. Loma went to visit Pearl and see if she thought the incredulous story was a phallacy. Pearl saw her coming to the door and answered the knock with "enter, Loma." Pearl invited her to sit down and presently called to her husband. "Phil, come and see who came to visit us. She doesn't think anyone really took the mushrooms." Pearl started to make some coffee when some other neighbors knocked. It was Don and his boys, Gus and Georgie. Pearl said, "Phil, uh, pour us all some coffee, please." As it was poured, the conversation returned to the missing mushrooms. They agreed there must be a stranger around. "Why don't we plan a search and go to the arena down the road or a few miles farther to the pastures and woods?" Don said, "Phil, are there some others who will go?" He nodded as he sipped. "Dad, aren't I and Gus going?" "No, son. There's a bull in the pasture." "Would the bull eat us, or something?" "There's an old story that one day the bull got out, and in the east wood 'e ate the old man of the woods, so Georgie, I don't think you'll be going along. The men went out and began searching high and low. Under fern fronds, behind logs, up on trucks. There was a sound overhead. "What is it", Don asked, "Can anyone see?" "It is a helicaper, Don." Tempers began to rise. Phil snorted, "Where are they, dag nat'em? Where are they that lured us here? What vulgar soul has hidden 'em?" Don suggested going back. "We'll never find them." As they went into Phil's house, Pearl was just chewing a bit of something. Phil asked to have some, too. "They're all gone." "What's all gone?" Pearl hung her head, "the mushrooms." "Good grief," he looked at the others, "Pearl ate 'em!" The searchers found nothing, but did the reader find anything during the story? There are the names of 18 genera or species mentioned.

Answer:

1. *B. edulis*; 2. *Phallus* sp.; 3. *Entaloma* sp.; 4. *B. viscidus*; 5. *Phylloporus* sp.; 6. *L. irina*; 7. *Cl. odora*; 8. *B. aurantiacus*; 9. *Boletus*; 10. *B. eastwoodiae*; 11. Old Man of the Woods; 12. *Tr. georgeii*; 13. *Lycoperdon*; 14. *B. luridus*; 15. *T. magnatum*; 16. *S. vulgare*; 17. *Hydnum*; 18. *L. perlatum*.

LONGEVITY OF TASTE AND TEXTURE OF WILD MUSHROOMS AFTER STORAGE by Margaret H. Lewis

Following is the Third Instalment of the copyright article from the Boston Mycological Club Bulletin. (The First Instalment appeared in the September issue and the Second Instalment in the October 1975 issue of Spore Prints.)

LACCARIA laccata's pleasant, mild flavor when dried disappears in a few months.

Laccaria ochropurpurea, sauteed and frozen, has more to it for six months.

LACTARIUS hygrophoroides (and volemus), so eagerly sought for the table, when sauteed and frozen loses much of its flavorsome quality. It changes to either a very mild or too strong taste. When frozen, uncooked, it looks fresh; thawed, it even toasts brown and crispy, but needs special seasoning to enhance it, lest a letdown.

HYPOMYCES lactifluorum sauteed and frozen, gets rubbery shortly. Pieces pickle well for a month; with celery crispness gone.

LEPIOTA procera, getting spicy when dried lasts a year and a little more, retaining flavor and sweetness when cooked. Too flabby for freezing or canning usually. L. americana, frozen and sauteed - use within six months. L. acutesquamosa, though abundant at times, should be passed up. How strong it gets in storage!

MARASMIUS oreades dried well, stays firm, loses mildness early.

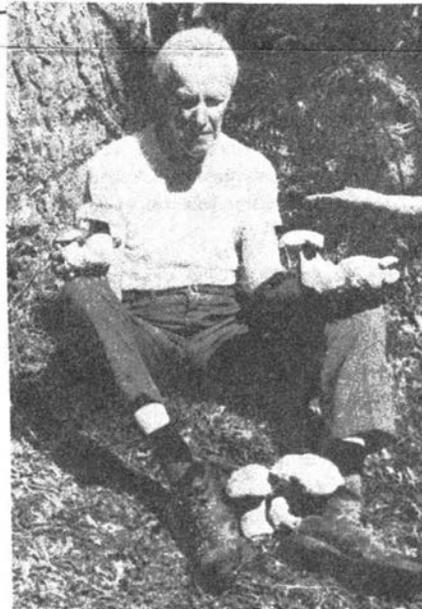
M. allistus, (M. scorodoni) dried, keeps its onion essence forever if kept in corked jar. Flavors soups and sauces.

MORCHELLA deliciosa (MORCHELLA esculenta), almost forever good, do have their day. Broth made from any specimens tends to be delicious. Dried morels store long and well in covered jars; though some are chewy after reconstituting. Sauteed frozen it's better than frozen raw, but the latter's broth has exquisite essence. Browned in chafing dish or baked stuffed in oven they stay tantalizing in aroma. I've never counted the time of their lasting quality.

MUTINUS caninus, actually edible, has a cardboard flavor when cooked and the egg has an odd taste when canned. Should I have pickled it?

THE MUSHROOMS KEPT GETTING BIGGER Brian Luther

Besides the unexpected diversity of species encountered during the Masonic Park fieldtrip of September 13-14, 1975, some surprising biggies were also showing up. Here Martin Hansen displays just a few of his heavyweight Boletus edulis specimens found on that fieldtrip weekend. Photo by Brian S. Luther.



HAPPY PEOPLE AND LOTS OF MUSHROOMS : REPORT ON
THE NOVEMBER 2ND SEWARD PARK FIELD TRIP Brian Luther

When I arrived at the upper parking lot of Seward Park, the time was 9:50 AM and there was only one other vehicle of prospective mushroom hunters in sight. At 5 minutes to 10:00 I was sort of wondering if that was going to be the extent of the crowd. But, the second after I thought that, another car arrived, followed by another, and another, and another. This didn't stop until approximately 10:35, at which time I figured that we'd all best be off to the "mushroom trails of Seward Park" before it got any later.

Nineteen people signed the register but several whole families came, so the actual head-count was somewhere around 31. It drizzled infrequently, but for the most part we had perfectly acceptable weather. We started into the woods via one of the trails nearby the parking lot and, after two hours of combing (almost literally) the woods on our way through, ended up at the northerly-most part of the park by the water. From here we followed the road-side trail around the west part of the peninsula back to the parking lot. In general, I had found that in my preview of the park a day earlier that there were not very many mushrooms that an individual was liable to find. However, with 30 or so people searching the woods, the number of species found was really quite astounding. Eighty different species were identified, leaving a small pile of mushrooms that I would only assign generic names to. Of those, there were some unusuals and some normals. Undoubtedly the most peculiar fungus we found was Leotia lubrica; it didn't occur in abundance, but it was there. Another specimen found, Tricholoma inamoenum, is a species which has a strong smell reminiscent of a smelter plant.

Several people found Yellow Chantrelles, but I made sure in my preview trip on Saturday that everyone would at least get to see some Chantrelles, for I had a few areas already staked out.

Some people had to leave half way through and others were able to stay and help clean up. There was no pot-luck, although it certainly would have been welcome.

The day seemed, indeed, to be a profitable one. The conclusion that can be drawn about the walk based on the number of mycophiles that showed up and their enthusiasm is that it definitely was worthwhile. Such trips should be considered as regularly scheduled events for future mushroom seasons.

NEEDED : TABLE DECORATIONS FOR THE BANQUET

Our banquet chairman, Doris Paduano (phone: 782 - 8382) solicits all members help in providing table decorations for the Banquet in March. Please call her and tell her that you would make a center-piece and bring it to the banquet. This will make her job easier. She has enough other items to take care of.

NOMINATIONS FOR SOCIETY OFFICES

The nominating committee, chaired by Scott Chilton (phone: 362-0804) including Margaret Dilly (phone 782-8511) and Martin Hansen (242-8717) will accept nominations for the officers and board of PSMS during the January and February membership meetings, or by phone. You may nominate any member, including yourself. But if you nominate a member other than yourself, you must get the member's permission to do so. Candidates are asked to submit a less-than-fifty-word biographical sketch, and a black-and-white snapshot of self at the February membership meeting (if not sooner) so the voters can read and see what they are getting.

DEVELOPMENT OF CLASSIFICATION OF THE
MACROBASIDIOMYCETES (continued from page one)

began their mycological careers. The first of these was Christian Henrik Persoon, the second was Elias Magnus Fries. Persoon was born near Cape Town, South Africa, orphaned at an early age, and made a ward of an uncle who sent him to Germany to get an education. Eventually he went to Paris where he spent the rest of his life, but while still in Germany he produced his major work, the "Synopsis Methodica Fungorum", published in Göttingen in 1801. In the preparation of the Synopsis, Persoon examined all the publications of his contemporaries and predecessors, culled from them the information he considered valid, and added his own considerable fund of knowledge of fungi. From these sources he fashioned a system of classification that for the first time accounted for all, or nearly all, of the fungi known in those days, and did so in a way that made the information readily available to other mycologists. This classification was to serve in coming years as the source to which many a mycologist - including Fries - would refer in elaborating his own system. Unfortunately, Persoon himself did not reap much benefit from his efforts; while in Germany he had enjoyed universal esteem, but in France he was almost completely ignored, passing his last years in extreme poverty, and ending in an unmarked pauper's grave. If he did not receive during his lifetime the recognition so richly deserved, it came posthumously in abundance: during the last half of the 1800's his genius was fully appreciated by mycologists, and eventually the International Botanical Congress made his Synopsis the starting point for naming Rusts, Smuts, and Gasteromycetes.

When the Synopsis was published in 1801, Fries, the other mycological luminary of those times, was 7 years old, and already becoming interested in fungi. Born the son of a Lutheran minister in north central Sweden, he grew up in a forested area where fungi were everywhere, and they soon claimed his attention to the degree that he resolved to make a lifetime study of them. In due course of time he became a professor of botany at the University of Uppsala, where he remained for most of his life. After a preliminary publication, the "Observationes Mycologicae", 1815 - 1818, he produced the work that immediately established him as the foremost mycological authority of his time. This was the "Systema Mycologicum" (1821-1828), that ushered in the second period in the development of mycological taxonomy. -(continued next month)-

BITS AND PIECES

Found in the "Parade Special" in the Sunday, November 30, 1975 Seattle Post Intelligencer: Mushroom Cure
Researchers in Sweden have developed a new aversion therapy for alcoholism based on the edible shaggy-mane mushroom. After eating the mushroom, the man who takes a drink will become so acutely sick that he will give up one or the other. What the researchers have done is to isolate from the mushroom a substance called "coprin," which is the nausea ingredient.

Recipe for Matsutaki Pickles: Heat one part each: soy sauce, brown sugar and vinegar. When the syrup boils add thinly sliced matsutaki and simmer about 10 minutes and seal in jars.

Just before Christmas I received a letter from Brian Luther which I expected to be a Christmas card. Instead Brian strongly objected to my editorial privilege and requested a correction in his fieldtrip report in the December issue of Spore Prints. Line #20 should read: "On Saturday, John Parker took my wife and I to some areas....."