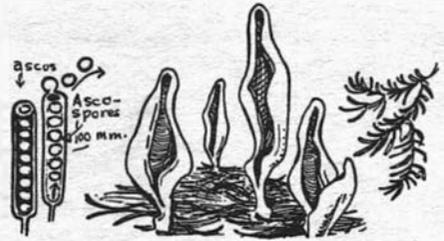


SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
Monroe Center, 1810 N.W. 65th St., Seattle, WA 98117

May 1986

Number 222



A NOTE ON MUSHROOM NAMES Wendell Simpson [Mt. Mazama Mycographia, Mt. Mazama Mushroom Assoc.]

Since the goal of most mushroom students is to identify their collections, that is, to put names on them, it is perhaps appropriate that we give some consideration to the concepts of botanical nomenclature.

Under the universally accepted system of binomial nomenclature, the name of an organism is the name of the genus and species to which it belongs. Thus a mushroom identified as *Coprinus comatus* is a member of the species *comatus* in the genus *Coprinus*. A species is a real biological unit. It can be defined as a population of interfertile individuals. It can be experimentally determined whether two individuals are of the same species by interfertility tests, although this has not been done with most of the species of fungi, mainly because of the difficulty of obtaining living cultures in the laboratory. Species of mushrooms are determined by similarity of anatomical characteristics as they occur in nature.

A genus, however, is a concept. It is a natural group of closely related species, but just where the limits of this group should be is a matter of personal opinion. It is differences of opinion on this matter that cause much confusion to the novice mushroomer. What one researcher considers differences enough to place a species in a separate genus, another specialist considers to be of only sub-generic importance. One may find the same mushroom under two different names in two different books, depending on whose scheme of classification the authors followed. This does not necessarily mean that one of these names is wrong. There are accepted international rules of botanical nomenclature, but a classifier is free to place a species (or any other taxon) anywhere he thinks it fits.

Most taxonomists try to construct a natural classification. That is, their orders, families, and genera represent the natural phylogeny of the group. However, due to the almost total lack of fossil fungi, just which are the primitive characters of a group is still very much a matter of personal opinion. The taxonomy of many groups of fungi is in such a state of confusion, though, that something must be done to bring some sort of order to the classification and to enable researchers to more easily identify their specimens and understand their relationship to other species. So the work goes on, and the names change.

Elias Fries, the "father of mycology," in his great work *Systema Mycologicum* published in 1821, placed all the gilled mushrooms in one genus: *Agaricus*. As time went on and hundreds, and then thousands, of species were described, this huge genus became so cumbersome that subsequent workers broke it down into smaller genera. That process is still being continued today. Splitting a genus into two or more genera, transferring species to different genera, transferring genera to different families, or occa-

sionally consolidating two genera into one -- these are just a few of the reasons for name changes in the mycological literature.

Under the rules of the International Code of Botanical Nomenclature, the first validly published name of a species is given priority over all subsequent names for the same species. It sometimes happens that a new species is described and named without the author knowing that the same species had already been described and named in a previous, sometimes obscure, publication. It is sometimes years before the old valid name is brought to the attention of the mycological fraternity.

It also occasionally happens that the wrong name is mistakenly applied to a species. This wrong name may acquire some degree of popular usage before the mistake is realized. A case in point is *Lactarius sanguifluus*. This is a well known edible mushroom in the Western United States. In their monograph of the genus, L. R. Hesler and A. H. Smith studied the description and illustrations of the species as originally described from Europe and decided that the fungus that had been known for years in the U.S. under the name *Lactarius sanguifluus* was not the same species as the original European *Lactarius sanguifluus*, so they redescribed it and gave it a new name: *Lactarius rubrilacteus*. The reader will still find this mushroom under the name *L. sanguifluus* in most field guides, but as time goes on the field guide authors begin accepting the new name, future mushroom hunters will face another name change, confusing to some, perhaps exasperating to others, but necessary if the taxonomy of fungi is ever going to represent the true state of these organisms as they occur in nature.

The taxonomy of the higher plants is pretty well stabilized, except perhaps for a few far off exotic regions, but the taxonomy of the fungi is still in a state of flux as new species are being found, old ones reassessed, and new methods of study are being tried. It is an exciting time to be a mycologist.

JET AGE FUNGI?

Boston Mycological Club Bulletin

Hormodendron, a genus of the *Fungi Imperfecti*, is causing serious problems by growing in aviation fuels, where it produces scum, slime and filamentous material which clog filters and strainers. The fungi need water and find places in storage tanks or jet fuel tanks where water, practically impossible to eliminate, and fuel come in contact. Usually associated with rotten wood, they seem also to have an appetite for the carbon in jet fuel.

Gather mushrooms whenever they can be found. That is the best time of the day to collect them.

Charles McIlvaine
One Thousand American Fungi



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Spore
Prints

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Calendar

- May 12 Beginners' class, 6:30 p.m., Monroe Center auditorium
Membership meeting, 7:30 p.m., Monroe Center auditorium
- May 20,11 Field trip to Swauk Creek
- May 17,18 Field trip to Stafford Creek
- May 19 Board meeting, 7:30 p.m., .PSMS library
- May 23 *Spore Prints* deadline
- May 24-26 Field trip to Clear Lake
- May 31, June 1 Field trip to Soda Springs

Our society depends on volunteers, we have no paid staff. Denny Bowman and the Boas are asking for help in this issue. Please respond.

Membership Meeting

Monday, May 12, 1986, at 7:30 p.m. in the Monroe Center auditorium, 1810 N.W. 65th Street, Seattle

Significant changes in the *International Code of Botanical Nomenclature* will give new names to some familiar mushrooms. To bring us up to date on the latest developments, Dr. Joseph F. Ammirati will speak on "Fungus Names, Why They May Change." Dr. Ammirati is Associate Professor of Botany at the University of Washington and scientific advisor to PSMS and the Pacific Northwest Key Council.

BEGINNERS' ORIENTATION CLASS

M. Hendrickson

The Beginners' Orientation Class will present a slide-illustrated discussion of the edible mushrooms you will find during the summer months. Yes, even during the dry period in the Pacific Northwest, some edible and poisonous mushrooms fruit in the well watered lawns in the city and at higher elevations.

BOOK SALES, FINE ARTS, HABERDASHERY

Judi Boa

Several people are needed to help at the book sales table during our monthly membership meeting. We have been kept jumping lately. Besides books, we are selling posters and T-shirts from last year's exhibit. Denny is too busy with the 1986 exhibit to help sell them, so we need some volunteers. Please call Judi or Ernie, 725-1235 or talk to us at the next meeting.

Call Judi or Ernie to order *Poisonous Mushrooms of the Northern United States and Canada* by Joseph F. Ammirati, James A. Traquair and Paul A. Horgen. Its cover price is \$75. *Spore Prints* will review the book next month.

FIELD TRIPS

Andy Green

May 17, 18

Stafford Creek Camp

Take I-90 over Snoqualmie Pass and use exit #85, just east of Cle Elum. Follow route 970 to the Route 97 intersection. Turn left (north) and continue on Route 97 for about 4 miles to Teanaway River Road, Route 970. Turn right and continue about 6 miles to Bible Rock Children's Camp. Bear right on the Teanaway North Fork Road and continue on for about 7 miles to Stafford Creek Road. Turn right up Stafford Creek to the campground. This is a primitive campground with no water or shelter.

May 24, 25, 26

Clear Lake Forest Camp

The camp is southeast of Mt. Rainier National Park on State Route 12. Use the well marked turn-off about 7 miles east of White Pass summit. Travel fourtenths of a mile and take the left fork which is Road 1312. Continue another half mile and turn right into the campground that is across the road from the Spring Forest Camp. There is no shelter or water.

May 31, June 1

Soda Springs Forest Camp

Go east on Route 410 over Chinook Pass. About 17 miles past the summit, turn right onto Bumping Lake Road 174. Continue about 5 miles and turn left into the camp at the Soda Springs sign.

"FOREIGN" NEWSLETTERS

Dick Sieger

Mycological societies all over North America exchange newsletters with PSMS. Some societies send membership lists. The Boston Mycological Club sent us a copy of their annual recipe book. You may read these publications in our library. We glean material for *Spore Prints* but have space for only a few of the fine articles and recipes. Travellers can find schedules of field trips and meetings. You can see how other societies are organized, what activities they provide for members, and share their hardships and joys.

Here is an excerpt from *Mt. Mazama Mycographia* published by the Mount Mazama Mushroom Association, Medford, Oregon. "Seventeen hardy souls braved one of the worst rainstorms of the year to drive to City Hall only to find the elevator turned off and all inside doors locked. It seems we forgot it was a national holiday and all city buildings were locked. It was assumed all meetings would be cancelled. Finally, with the help of the Medford police, we were able to gain entry to our meeting room to hear George Sherbourne present a talk and slide show on the common edible mushrooms found in southwest Oregon."

A New Orleans Mycological Society member wrote this for *The Boleten*. "We have just experienced what I believe to be the finest *Cantharellus cibarius* fruiting that I have ever seen. In mid July [1985], Bill Cibula and Stephen Harsch report abundant chanterelles at Honey Island Swamp due to heavy rains for several weeks. On July 27, Charles Brenke and Dr. Anthony De Bello found great fruitings in the Black Creek flood plain. On July 31, I found the Pascagoula Hardwoods forest floor literally orange with chanterelles, many 4-5 inches in diameter. I had 25 pounds picked in fifteen minutes, which was all the freezer space I had available. About one out of 20 showed any insect damage. A week later, I went back with a lady who wanted to sample chanterelles. Though there were no new fruitings, the old fungi were still in good condition with approximately one out of four still insect free."

NO TOLLS, NO TROLLS

KOMO Radio

The plan to collect tolls from people passing through Mt. Rainier National Park has been delayed for a year. The park doesn't have enough money to staff toll booths. 4/16/86

MEMBERSHIP

Aino Kunz

Please change the Boa's phone number on page 3 of the 1986 membership booklet. It should be 725-1235.

We apologize for omitting these names from the 1986 membership book:

Michael & Ila Palmquist 823-0820
Mike O'Connell 783-0154

New phone number: Dave and Jennie Schmitt, 876-3755

Welcome to the following new members:

Donald and Phyllis Bogard 852-8061
Madelyn Curll --
Frank Mallinak 783-8559
Kenneth W. Moss (907) 789-3880
Theresa & Larry Taggart 271-2919

EXHIBIT

Dennis Bowman

It's that time of year again when visions of morels and mushroom exhibits start overtaking us. We begin to ponder, Where do I look for morels? And, How do I sign up for freeze drying? Well, you'll find morels right where they grow, and you'll find me at our next monthly meeting with my clipboard. So now you are thinking, How can I help? I think I can be of help. We have more jobs to be filled than there are morels in Monty's spring basket. Big jobs, small jobs. Leadership, assisting, and helping jobs. Jobs with written and verbal instructions. Jobs for each month of the year and jobs for those last minute jobs. Want a job? Call me at 525-8399 and see me at our next monthly meeting.

CARNATION FIELD TRIP

H. Hendrickson

The educational field trip to the MacDonald Park in Carnation on March 29th was attended by some 60 plus members and their guests. (The plus did not sign the register.) The weather cooperated with a sunny, warm day, and the *Verpa bohemica* showed their white stalks. We could not establish whether the amount of fruiting was less than in previous years because the area had been picked before, but everybody went home with at least a few *Verpa* to taste.

Monte Hendrickson introduced many new members to cottonwood trees and led them on their first mushroom hunt. Another group was led by Andy Green. Joy Spurr and Hildegard Hendrickson identified some 20 plus species. (The plus were mostly LBMs = little brown mushrooms.) One new member found a dozen pure white oyster mushrooms. Joy took many pictures of a beautiful specimen of *Paxina acetabulum*. Joy found a rare *Schizophyllum commune*. Monte had brought three true morels to illustrate the difference between *Verpa* and *Morchella*.

A good time was had by all on this first outing of the season, which was hosted by Monte and Hildegard Hendrickson.

ROCKPORT FIELD TRIP

H. Hendrickson

Even though it poured the day before and kept the early arrivals in their RVs, the day of the field trip, Saturday, April 5th, was beautiful. Some 79 members and guests signed the register, and 59 stayed for the excellent potluck dinner. The Hendricksons and Kleinmans were hosts for this outing.

Hildegard and Jennie Schmitt identified 40 plus species (the plus again were LBMs). Everybody found at least a few *Verpa bohemica*. There had been three slash burns in the vicinity, but none produced any morels at this time.

Again this year, the caretaker of the Steelhead County Park, Bob Bangert, had the fire going in the stove when we arrived. A welcome addition to the shelter were the bright fluorescent lights. This is a beautiful facility for an early spring field trip.

Morrie and Elsie Gatcomb, who now live in Costa Mesa, report that Morrie found two dozen morels near some shrubbery in a neighbor's yard early in April. Not bad for Southern California, Morrie!

WHAT IS A SPECIES?

Philip Musgrove
Capital Mushrooms

Three general criteria are available for classifying two specimens as belonging to the same species. Individuals of the same species should (1) display common morphological or taxonomic features, (2) mate or interbreed in nature but be intersterile with all other species, and (3) have very similar genetic material, showing common evolutionary descent.

As part of the work for his P.H.D. dissertation under Dr. Orson Miller, Dr. Rytas Vilgalys conducted two principal types of tests on mushroom specimens. In one, he tried to get mycelia from two different specimens to mate and form a fruiting body, showing that they satisfied criterion (2). In the other, he tested purified DNA from two specimens for homologous base sequences, or stretches of the genetic material in which the coding was the same. (Simply testing for the overall composition of the four bases that make up the DNA wouldn't reveal anything, since it is nearly in all species, i.e., it is the words spelled, not the frequency of the letters, that matters.)

He found that strains that are very different morphologically can still cross. The share of DNA that is identical between two specimens can be as low as 29%. For comparison, the DNA of man and that of the chimpanzee show an average hybridization of 99%. That means either that mushrooms are very, very old, or that they mutate and evolve very, very fast. The evidence from a variety of genera, including insects and one-celled creatures, that the DNA clock ticks at a fairly constant rate, would seem to favor the interpretation that mushrooms are very old and have had time to accumulate a great deal of genetic variation.

Thus strains that become geographically isolated, as by the separation of Europe and North America, and no longer exchange DNA in the wild may still retain enough DNA in common to cross, even though they have evolving separately for millions of years. This relationship may not be evident from macroscopic features.

WAX PAPER BAGS

Since the advent of plastic, wax paper sandwich bags have been getting scarcer than morels in the middle of a mushroom pickers convention. This is bad news, as nothing decomposes mushrooms faster than storing them in a plastic bag. Here in the Great Northwest, wax sandwich bags are still stocked by some IGAs, but in the East it's been slim pickings. It appears, however, that technology has now come full circle -- in place of the wax paper sandwich bag, we now have the slightly bigger, more parchment-like microwave bag. The trade name is Waxtex, and they are carried by Safeway.

A CAMP BAKE

Charles McIlvaine
[One Thousand American Fungi]

Cover the bottom of a tin plate with caps, spore surface up. Sprinkle with salt and pepper, place on a bit of butter on each. Put another tin plate on top. Set on coals or a heated stone for fifteen minutes. Eat. No better baking will result in the best oven.

TOXINS AND ANTITOXINS

Did you know that the deadly poisonous *Amanita phalloides* produces small amounts of antitoxin to its own liver toxin?

The cyclic decapeptide antamanide isolated from the *Amanita phalloides* acts as an antidote to the toxin phalloidin found in the same mushroom in much larger quantities. Phalloidin attacks liver cells, making the smooth surface of the liver grossly puckered, distended, and discolored. Administration of antamanide before ingestion of phalloidin prevents the attack on liver cells, apparently because the antamanide binds to the surface of the cell membranes, preventing access by the phalloidin toxin.

MUSHROOMS IN THE BATHROOM

Dick Steger

A lot of people are growing mushrooms at home these days, but sometimes it's inadvertent.

I recently found *Peziza domicilina*, a curious little cup fungus, on a service call. My customer was understandably disturbed to find mushrooms growing from the floor around her toilet. A small leak in the water supply had gone unnoticed, keeping the floor wet for some time. She had (again understandably) discarded the mushrooms, but I recovered a fruiting body from the basement ceiling just below the leak. It was about three inches across, had thin brittle flesh, a stark white upper surface, a narrow growing margin with yellow-brown bands, and a grayish yellow-brown underside. The cup was distorted because its upper surface, the fertile one, was pressed against the ceiling. Immediately noticeable was a delightful pungent aroma of morels.

The name *Peziza domicilina* means "domestic stalkless mushroom." It will grow in damp wood outdoors, but prefers damp rooms. Alkaline conditions provided by plaster board encourage it, so you might find the cups growing from shower walls. The fungus is widespread but isn't reported too frequently. That may be because of embarrassment rather than scarcity. For a picture, look at page 31 in the new edition of Smith and Weber's *Mushroom Hunter's Field Guide*. You might mistake *Crepidotus* fruiting bodies for *P. domicilina*. *Crepidotus* may grow from wet wood and may have a similar size, color, and flattened appearance. However, gills on the underside of *Crepidotus* readily separate it from *Peziza*.

Microscopically, my *P. domicilina* wasn't distinctive. Members of the genus shoot spores from a tube (ascus). A trap door (operculum) in the end of the tube opens like a toilet seat to let spores escape. That's fun to look at. The end of the tube turns blue when dipped in an iodine solution (Melzer's). You don't need a microscope to see the reaction. Put a thin smear of tissue on glass and add iodine solution. The smear immediately turns blue or black.

No, edibility isn't known. No, I didn't try it.

We wish to thank the Kunz's and Hendrickson's Osborne I computers for making it possible to publish this newsletter. Our O-I collapsed, and the space bar on Kunz's was balky. By using our WordStar program and Brother printer, the Kunz's computer and monitor, and the Hendrickson's's keyboard, everything worked!