

Spore-Addict Times

The Newsletter of the Pikes Peak Mycological Society

June 1991

Mushrooms on vacation

by Lee Barzee

How has your mushrooming study advanced? What are you finding and identifying in your travels? And, gastronomes, besides Rocky Mountain springtime morels, have you found fresh white shaggy manes, *Coprinus comatus*? It's a good edible too (and you can freeze it).

During my recent trip to a hotter, drier, sandy southwestern area, I found a distant relative of *C. comatus* which David Arora describes as "bizarre and inelegant" and labels "desert shaggy mane [1]."

This is *Podaxis pistillaris*, a unique Gasteromycetes ("stomach fungi") which, contrary to Arora, I found quite beautiful. (Perhaps Mr. Arora's assessment was biased because this mushroom is inedible?)

Poking out of the sand under a big sagebrush, its stature did resemble the better-known shaggy mane. It was snowy white, erect, with upturned scales over the entire cap and stipe. Set against the reddish sand and dark shrub shadows, it had a "notice me" look. When I cut into its unopened head, I found not developing gills, but a pale mass—certainly a Gasteromycetes like a puffball. I had studied *Podaxis* before in books and as dried lab samples, but this was my first fresh, live, in-field encounter.

P. pistillaris is the only known North American species of *Podaxis*. The *Podaxis* genus even has its own order: Podaxales. I looked my find over further.

The stipe was tough, almost woody, with a broad bulbous base covered by the sand—a regular "foot." The foot, stipe and head of *Podaxis*, I learned, suggested the generic name to Desvaux in 1909. Mycologist Elizabeth Eaton Morse explained in 1933 that, "What appears at times a rather top-heavy plant is thereby provided with anchorage and balance in sandy soil from which it might otherwise be displaced easily by heavy winds and seasonal torrential rains [2]."

As I handled the dug-out specimen, the loosely hung scales fell off, revealing an under layer of the head. I read further in Morse's study, "When the plant is fully mature, all the scales are shed, revealing a dingy, ochre-colored endoperidium [inner layer]." I suggest that Arora saw only an awkward, not-so-pretty, *mature* specimen.

So *Podaxis pistillaris* is a kind of stalked puffball. How does it compare, besides superficially, with that distant relative *Coprinus comatus*?

First, they are both in class Basidiomycetes. Society members will recall that this means the spores are borne on basidia. Yet the *Podaxis* spores are uniquely borne on *fascicled* basidia.

Second, the spores of *Podaxis* are not forcibly discharged as they are in agarics. This is the case for all forms of Gasteromycetes, including puffballs, earth-stars, stinkhorns, and Bird's nest fungi [3]. The spores are enclosed in a mass, the gleba, by an outside covering called the peridium. Depending on the species,



Podaxis pistillaris showing the columella (left) and the foot (right) [2].

Mushrooms on vacation, continued

this covering is differentiated into one or more layers of protective tissue (two in *Podaxis*). The spores are freed only after the peridium is broken or weathered away. The fungus may persist for weeks or months before it ruptures at the just-right-rain time for dispersal of mature spores.

Third, *Podaxis* is admirably adapted to an arid habitat. As a contrasting example, Jack S. States uses the stinkhorn found in moist sites [4]. Their spore masses are wet instead of dry, and their spores are dispersed by insects rather than by wind.

Fourth, *Podaxis pistillaris* has a stipe-columella at maturity. This is a structure of sterile tissue that extends up into the gleba dome. It was absent in my young specimen.

The fifth and final point of comparison was apparent in my specimen. This is the vestige of deliquescence that likely has tied *Podaxis* to *Coprinus*. I had put the specimen in my cooler to preserve it for later study. By evening when I next looked at it, I saw that it had discolored in a manner that resembled *C. comatus*. However, the inky color of the *Podaxis* was a rosy Chablis to Indian red! Orson K. Miller explains this process of coloring in his book *Gasteromycetes* [5]. Concerned for the longevity of my specimen, I removed it from the moist cooler and dried it.

Morse began her first work on *Podaxis* in 1929 with fungus found growing in Colorado desert. She stated in 1933 that *Podaxis* "occurs generally though intermittently in somewhat restricted areas in a belt encircling the earth approximately within the fortieth parallels north and south of the equator." She also mentioned that "mature *Podaxis* has been known to botanists for over 250 years [2]." Alexander H. Smith said *Podaxis* is "the most common fungus of the hot deserts of the Southwest [6]." That certainly deflates my first find!

My field notes remind me that my *Podaxis* was growing under a sickly sagebrush that had several dead branches. Apparently weak and on the decline, the sage bore many large insect galls. The industrious *Podaxis* could be praised for cleaning up its environment.

So, David Arora, no more attitudinal puffball kicking! Even the non-edibles are beautiful. And what character!

Happy vacations, happy mushroom studies!

REFERENCES

- [1] David Arora, *Mushrooms Demystified*, 2nd ed., Ten Speed Press, 1986.
- [2] Elizabeth Eaton Morse, "The Study of Genus *Podaxis*" in *Mycologia*, vol. XXV, no. 1, 1933.

[3] C. J. Alexopoulos and C. W. Mims, *Introductory Mycology*, 3rd ed., John Wiley & Sons, 1979.

[4] Jack S. States, *Mushrooms and Truffles of the Southwest*, University of Arizona Press, 1990.

[5] Orson K. Miller, Jr. and Hope H. Miller, *Gasteromycetes*, Mad River Press, 1988.

[6] Alexander H. Smith, Helen V. Smith, and Nancy S. Weber, *How to Know the Non-gilled Mushrooms*, 2nd ed., William C. Brown Co., 1981.

News Flash

Annual joint foray this Saturday

The annual tradition of a joint foray with the Colorado Mycological Society continues this year. This Saturday, 22 June, Dennis Craig will lead PPMS members to a rendezvous with the Denver club at Indian Creek.

If you're interested, meet Dennis at the McDonald's restaurant at the intersection of Academy Boulevard and Highway 83 by 8:00 A.M. Take a hearty picnic lunch and plan to find morels.

Spore-Addict Times

P.O. Box 1961
Colorado Springs, CO 80901

is published monthly from April through October by the Pikes Peak Mycological Society. Submissions of articles, book reviews, letters, artwork, and ideas are welcome.

The Pikes Peak Mycological Society is a non-profit organization dedicated to advancing interest in, and understanding of, the field of mycology.

Officers

Mary Will	President	(719) 599-0118
Mike Chladek	Vice President	(719) 597-6723
Annette Campbell	Secretary	(719) 593-9912
Liz Ras	Treasurer	(719) 473-1248
Lori Ligon	Foray Coordinator	(719) 635-2213
David Watson	Newsletter Editor	(719) 593-9912

Membership

Membership is open to all persons interested in mycology. A gastronomic passion for wild fungi is not required. Annual dues are \$10 for individual and family memberships.

Ho-hum, another morel

by Lori Ligon

Nineteen ninety-one will long be remembered as the year of the morel and of the never-ending morel foray.

George Singer arrived to go on our second foray to Beaver Creek on 2 June with six huge yellow morels. They measured five to seven inches high! He reported that he found them "along Fountain Creek." Dennis Craig found many more such beauties somewhere "in the city." Unfortunately, the foray itself produced only eight rather small morsels.

Many thanks to Sheila Steele who walked across her road, found two black morels, scouted Rampart Range Road, and then agreed to lead a foray on 9 June. With advice from Sheila to look on north facing slopes, the group found approximately 500 black morels that afternoon. (This is not a typographical error; they found five hundred morels!)

Word of this foray spread quickly around Colorado Springs, and several small groups headed for the 9000-foot hills of Rampart Range Road in the following week. Annette Campbell and David Watson almost gave up after searching all afternoon Sunday. But that evening they hit pay dirt in the form of three pounds of those black-ribbed honey-combed caps. The Canadys were also successful that day while Doris Bennet and Lori Ligon discovered about five dozen on Monday.

On Tuesday, Lori, George Singer, and Don Berrigan drove to Painted Rocks to find only one tiny specimen. So off they went to Rampart again for about six dozen. Don and George found most of those and were still finding them on Thursday.

Another foray led by Sheila to Rampart on 16 June was most successful for the 19 members who attended. Frieda Davis found seven in a row and took a picture to prove it. Eagle Eye found the most—2.2 pounds (approximately 100).

Annette and David returned to Rampart on 17 June [as if they didn't have enough—ED.] and bagged almost another pound.

Several persons reported finding *Agaricus* species (*bitorquis* and *campestris*). So there is life after the morel.

What an exciting spring season this has been! And Don predicts a record year for boletes and chanterelles too because of all the rain we've had. Let's hope you're right, Don.

Meeting news

June. The June meeting will be on Monday, 24 June, in the Junior League office at 2914 Beacon Street, just south of Fillmore. As usual, the meeting will begin at 7:00 P.M., with the call to order at 7:30.

Get ready for a change of pace at this month's meeting. Society member Reynolds Bane will speak about the edible wild plants of our region.

George Singer will try once again to give away an *Amanita*-engraved belt buckle. George will take to the meeting a mushroom stew with dumplings. The person who correctly identifies the kinds of mushrooms in the stew will win the buckle. Could one kind be morels?

Last month. The thirty persons present at the May meeting enjoyed Ken Pals' slide program on mushroom identification. The society also created the new position of assistant treasurer (immediately filled by Frieda Davis), and they welcomed two new members, David and Linda Muth.

Stems and pieces



Medical study. Ed Login, a biochemist in Connecticut, is looking for volunteers to collect and identify fungi for a study of the medicinal properties of the fruiting bodies of mushrooms. Mr. Login will provide boxes and pay shipping for your unwanted fruiting bodies. If you are interested in participating, contact David Watson for the Mr. Login's address.

Another first? Annette Campbell has collected what may be the earliest *Lactarius deliciosus* in recent years. Annette found the specimen on 17 June a few miles north of Woodland Park not far from Colorado Highway 67.

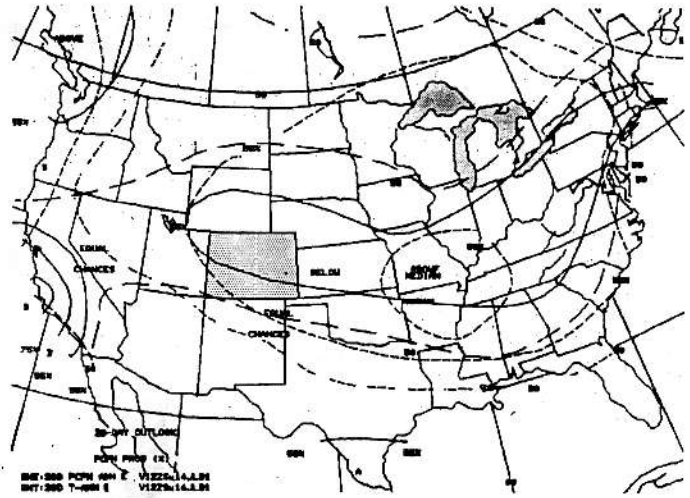
Take five. It takes twenty-five to thirty days after a heavy rain for dormant mycelium to develop the primordia that will become mushrooms. Once these primordia are present, they require five days after a rain to fully develop into fruiting bodies. This is according to research conducted by Danish mycologist Morton Lange and reported in *Mushroom, the Journal*, spring 1986.

Rain Report

As predicted by *The Old Farmer's Almanac*, May was dry. Only 0.8 inches of the usual 2.28 inches of rain fell at the Colorado Springs airport. With June, however, came a dramatic change in the weather. Rainfall in the first two weeks of June totalled 2.89 inches, a full two inches more than normal. This too was consistent with *Farmer's* predictions.

What can we expect in the upcoming month? Normal rainfall for the entire month of June is 2.02 inches. The first three weeks of July usually bring another 1.85 inches. Average temperatures for June and July are 65.7°F and 71.2°F, respectively.

The National Weather Service thirty-day outlook for 14 June through 14 July calls for a fifty-five percent chance of above-average temperatures, and a fifty-five percent chance of below-average rainfall. *Farmer's* predicts a warming trend through the end of the month in both the mountains and the plains. If



the predictions are accurate, maybe the warmer weather after all this rain will coax the summer mushrooms to pop out a little early.

Spore-Addict Times June 1991
Pikes Peak Mycological Society
P.O. Box 1961
Colorado Springs, CO 80901



Lee Barzee
38 Friendship Lane
Colorado Springs, CO 80904
