

# SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY  
200 Second Avenue North, Seattle, Washington, 98109  
May 1978

Number 142



## PRESIDENT'S MESSAGE 1978

Jennie Schmitt

My chief goal for the Puget Sound Mycological Society in 1978 is total membership involvement in Society activities. Mushroom study is many sided: science, nutritional, poisoning, history, literature, journalism, arts and crafts, etc. The list is practically endless, offering a place for everyone in an area of interest.

You are cordially invited to match your interests and talents with the committees listed in the past issue of Spore Prints as well as in the membership roster. Contact the chairpersons and join up. And if you don't find a committee that interests you, call me at 255-5286 with your suggestions and maybe we can create a special committee, in addition to those provided for.

As a start this year, as your president, I want to express my deep appreciation to Navarre and Jack Orth, our president for the past two years and his first lady, for their tremendous contributions toward the development of all phases of our Society. We know they will continue as active participants of our Society.

So join in, join up, volunteer and participate in this very gratifying learning experience.

GOOD & SAFE HUNTING.

## FIELD TRIPS

Dick Sieger

May 6 & 7 Lake Wenatchee State Park, Elevation 1,900'. Travel U.S. Route #2 east over Stevens Pass. 20 miles past the summit, turn north on State Route #207, and go 4 miles to the park. Anticipated mushrooms: morels

May 20 & 21 Crystal Springs Forest Camp  
Travel Interstate 90 east over Snoqualmie Pass. 9 miles past the summit, take the Stampede Pass Exit (#62). Turn right at the stop sign, and take the right turn just before the bridge. no water in camp! Elevation 2,400'. Anticipated mushrooms: morels, Boletus edulis.

May 27, 28 & 29 Clear Lake Forest Camp located south-east of Mt. Rainier National Park, on State Route #12. Use the well-marked turn-off about 7 miles east of White Pass. Follow the PSMS arrows. Elevation 3,100'. anticipated mushrooms: morels, puffballs, G. gigas, and B. edulis. Eastern Washington Mycological Societies are invited. Pot luck on Saturday, and an informal pot luck on Sunday.

## NO EDUCATIONAL FORAY THIS SPRING !

If the weather continues to be as mild as it has been so far this spring, the timing of the field trips should be ideal, and all anticipated mushrooms should be fruiting. Therefore, it has been decided to hold these trips, rain or shine. See you at the field trips !

## THUNDERBIRD PARK FIELDTRIP REPORT

Dick Sieger

On Saturday, April 15, Paul and Hazel Rule welcomed us to their camping resort. They were assisted by June Lovin. Paul led us to a 300 acre clear cut which had been burned last July. Warm sunshine came in the late morning and there was a beautiful view of the Cascades. Morels were found in a few scattered spots. These spots were very productive. Most of the morels found had long, conical caps, and some of them were enormous in size. Rick White found one that was about 8" tall. He also brought back two ordinary-looking morels that were growing from a branch, and the mycelium could be seen in sound wood. Polyporus versicolor brightened the charred wood, and on the ground were Coprinus micaceus and a large, tan Peziza. Good quantities of large Gyromitra esculenta were found.

Howard Melsen identified 14 species altogether. 55 people came to the fieldtrip, and 37 shared the pot luck.

## ROCKPORT FIELDTRIP REPORT

Dick Sieger, HRH.

Although we had some spring moisture (i.e. it rained all day on April 1st) 89 people came to Steelhead County Park, and 72 of them participated in the potluck. Our potluck was outstanding with many new dishes prepared by our members. Bill Brown treated us to antelope stew. If you found feathers in it, they were from the single arrow that Bill used to bring down the antelope in Idaho. Ron Richardson heard we were having a good mushroom season, and dropped in from Anchorage. He wasn't disappointed. The Verpa bohemica weren't hiding this year, and they were abundant. Earl and Margo Harrison must have cleaned a half bushel of them by the shelter. Jennie Schmitt and George Rafanelli identified 30 species, which included Discina ancilis, Gyromitra esculenta, Pleurotus ostreatus, Coprinus micaceus, and C. atrementarius. Apparently there weren't any Gyromitra gigas showing yet. On Sunday, your hosts, the Hendrickses, were able to do a little mushroom hunting and came back with morels from a burn. Upon examination, it seemed as if they included three species: M. angusticeps, M. esculenta, and M. deliciosa. Jack Orth's brother Bill and his wife visited with us on Sunday morning.

The fine treatment we received from Dennis Mapes, the new ranger of the Steelhead County Park, helped make this an enjoyable weekend.

## INSTRUCTIONS ABOUT THE BOOK RETURN

The soft-back edition of "Mushrooms of North America" by Orson K. Miller, Jr., contained a number of errors and the publisher, upon sending them the title page (3rd page) will send you the new corrected copy, free of charge. The address is E.P. Dutton, 2 Park Avenue, New York, 10016, Attention: Dept. XX, Customer Service.

The keys on page 11 do not fit this book, but the original, hardback edition, and several pictures are not correctly identifying the fungus described.

After the corrections have been made, the small size of this book makes it a handy addition to your library.

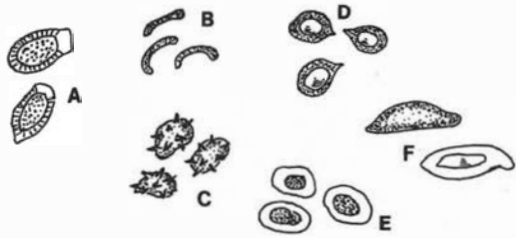


FIGURE 3. Spore Shapes

Figure 3 shows some of the spores of polypores: A - Ganoderma; B - Daedaleopsis; C - Bondarzewia; D - Meripilus; E - Inonotus; F - Polyporus squamosus. Spore sizes vary substantially between genera, from 3  $\mu$  long (Incrustoporia) to 23  $\mu$  long (Fomes). In Ganoderma spp., we find what appears to be a double wall, the brown spiny inner wall visible through a hyaline smooth outer wall. Spores are sometimes used as a basis to separate genus and family.

Hyphae (Fig. 4) play a very important role in the identification of polypores, and are also the most difficult to study. Pegler (1973) recommends the following: Dried material - First soften the part of context to be examined (5% KOH solution), and remove a small piece, taking care to cut along radial axis of basidiocarp. Place on slide with a drop of KOH and, under dissecting binocular scope (or low power regular scope), tease away individual hyphae using 2 very fine dissecting needles. One percent aqueous phloxine or eosin may be used for staining.

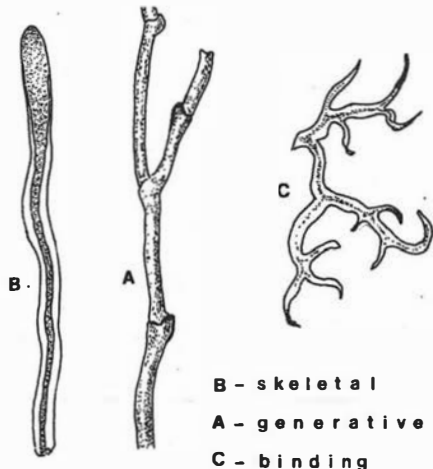


FIGURE 4. Hyphae of Polypores

Three different types of hyphae are present in the Polyporaceae: Generative (A), present in all spp., but sometimes hard to find. Look for these hyphae in B part of fruitbody. They are the main hyphae that give rise to the basidia and other hyphal types. They are also the only type with clamp connections. Skeletal hyphae (B) are usually thick-walled, lack primary septation and are never branched. Their function is to strengthen the fruitbody. Binding hyphae (C) are of limited growth, and function to weave the other hyphae together.

The presence of only type A hyphae is called monomitic. A combination of A and B or A and C type hyphae is called dimitic. The presence of all three is called trimitic. Samples of monomitic: the genera Tyromyces and Grifola; dimitic: Laetiporus

sulphureus; trimitic: Coriolus versicolor and Ganoderma applanatum. Hyphae should also be tested with Melzer's reagent for amyloid reactions.

Figure 5 shows some of the other structures we may find on the hymenial surface: A - basidium; B - hyphal peg, consisting of conglutinate hyphae--their function is not known, but they are important aids in identification. Mostly found in spp. of the genera Trametes and Polyporus; C - cystidia with incrustation (formed by calcium oxalate crystals); D - cystidiolate; E - cystidia without incrustation; F - seta, this curious structure may be used for the identification of the genus Mucronoporus. Setae can be straight or hooked as shown; they can also be inflated (as shown) or solid.

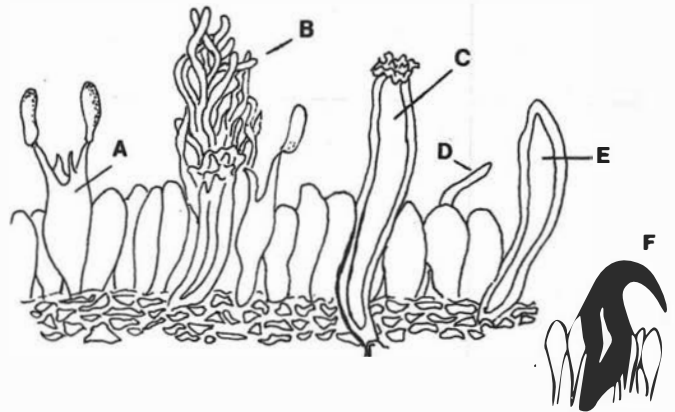


FIGURE 5. Fragment of Hymenium

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**POLYPORE IDENTIFICATION** by Paul P. Vergeer  
(of the Mycological Society of San Francisco)

Polypores are a large group of fungi too often ignored by the amateur. They are difficult to identify, many are not colorful, and few are edible. When we try to identify species, we run into another problem, namely the many different generic names for the same taxon. This is due to numerous different classification systems; more numerous perhaps than in any other group of fungi. Neither is there universal acceptance for any one system, for they are all based on a limited temperate flora, and each uses different characters in delimiting genera. This perhaps is one of the reasons why many mycologists have preferred to stick close to the Friesian treatment of the genera. These are few in number and can readily be recognized in the field by their macroscopic features. They are often called "form genera" and consist of the following:

- POLYPORUS - annual and fleshy
- POLYSTICTUS - annual and leathery (coriaceous)
- PORIA - annual or perennial. Resupinate
- FOMES - perennial and pileate
- LENZITES - annual with lamellate hymenophore
- DAEDALEA - annual with labyrinthine hymenium
- TRAMETES - annual with tubes of unequal length.

This system is used by the "conservatives" such as Overholts. "Radicals" believe the form genera to be too broad, not reflecting true evolutionary affinity, and therefore difficult to use in description of spp. Murrill and such Europeans as Quelet and Patouillard belong to this last group. They erected numerous small genera, a trend which still continues in the present day. To illustrate this problem, let us consider the common Fomes annosus. Brefeld in 1888 described the genus Heterobasidium with F. annosus as type and only species. He justified the new genus on the basis of a special type of hypha found in annosus. Since then F. annosus has been variously placed in 15 genera, e.g., Poria, Fomitopsis, Trametes, etc. (Donk 1960, 1974)

The example points out the difficulty, especially for amateur mycologists trying to use professional monographs (fieldguides rarely cover polyporous fungi in depth). In the following paragraphs I will try to give some details and features used in identification of polypores and I have added a short bibliography for those interested in further reading.

Figure 1 shows fruitbody shapes that might be encountered. Examples of these are:

- RESUPINATE - Tyromyces and Poria species
- DIMIDIATE - Coriolus (Polyporus) versicolor
- UNGULATE - Phellinus (Fomes) igniarius
- STIPITATE - Coltricia (Polyporus) perennis.

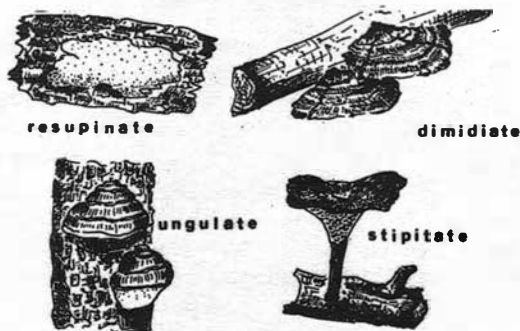


FIGURE 1. Fruitbody Shapes

Often we encounter in-between shapes; for instance, some species of Tyromyces can be substipitate. There can also be variations between specimens of the same taxon, depending on locale, host, and weather conditions--one of the reasons why microscopic analysis of the fruitbody becomes so important.

Figure 2 shows some of the pore shapes, which can readily be observed in the field. Examples are:

- REGULAR - Coriolus versicolor, Fomes fomentarius
- ELONGATED - Daedaleopsis (Daedalea) confragosa
- ANGULAR - Grifola frondosa, Hapalopilus nidulans
- DAEDALOID - Daedalea quercina.

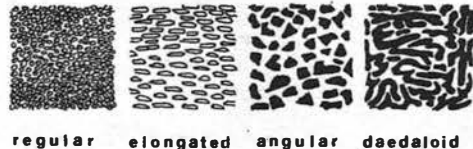


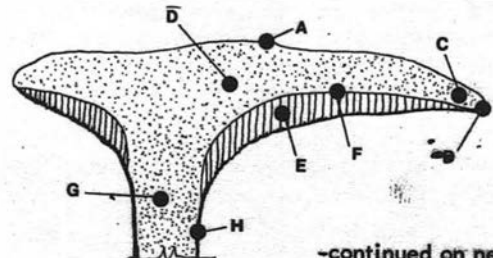
FIGURE 2. Pore Shapes

Pore shape is a good field characteristic, and so is their size. This is measured by counting the number of pores per square millimeter, which can then be checked in the descriptions of the species.

Other macroscopic features to look for are the color of the spores. Sometimes this can be seen from spore deposits on the pileus of other carpophores or the tree below. An example of this is the brown spores of Ganoderma spp. The surface of the fruitbodies should also be noted, as well as their context (color and consistency). Ganoderma usually has a shiny pileus, whereas the pileus of Fomes is never shiny. It should be noted whether or not the pores are united or separated; free tubes are a characteristic of the genus Fistulina. Sometimes a volva-like structure is present, as in Polyporus volvatus.

**MICROSCOPIC EXAMINATION**

Correct determination of microscopic structures requires adequate and precise methods. Fresh specimens are preferred since dried material does not revive certain structures, for instance clamp connections. Using precise methods means systematically checking certain parts of the fruitbody. Teixeira (1962) recommends that the following always be checked [also recommended by Domański (1973)]: A - mature tissue of the flesh; B - growing margin of pileus, the place where hyphae and other structures originate; C - intermediate area, showing the transition between A and B; D - surface structure; E - dissepiments showing hymenial or extrahymenial structures that may be present; F - context immediately above tubes, often more compact, with or without setae; G - probably same as A, sometimes with unique binding processes; H - stem structure, often same as D but sometimes entirely different.



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# P. S. M. S. Spore Prints

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c/o The Pacific Science Center, 200 - 2nd Avenue No.  
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**SCIENTIFIC ADVISER** Dr. Daniel E. Stuntz

## Calendar

May 6 & 7 Fieldtrip to Lake Wenatchee State Park

May 8 Monday, Membership Meeting, 8:00 pm

May 20 & 21 Fieldtrip to Crystal Springs Forest Camp

May 22 Monday, Board Meeting, 8:00 pm

May 27, 28 & 29 Fieldtrip to Clear Lake Forest Camp

June 12 Monday, Membership Meeting, 8:00 pm

Please correct the following phone numbers in your roster:  
H. Ron & Sharon Boehm 362-4430; Wayne & Gay Plumley  
776-7793; Jon & Irene Hendrickson 486-3747.

**BOOK SALES** Helen Wasson

Books will be available for sale at each alternate meeting.  
The next sale will be at the June membership meeting.

**LOST AND FOUND** Dick Sieger

The following items were left behind at various fieldtrips:  
reddish-brown hooded child's sweater (at Carnation fieldtrip)  
black handbag; utensils, etc. Call Dick Sieger, 362-6860.

**WELCOME TO THE FOLLOWING NEW MEMBERS**

Herman & Carol Dethman (747-0310); Barbara Forderhase  
(362-8573); Alexes Marks (824-0274); Robert W. O'Connell, Jr  
& Kay Larson (784-1998); Karen Ramborger (789-0692);  
Aileen Schumacher & Richard Blum (762-2418); Joanne &  
Walter Sebring (885-7293); William J. Walsh (244-6969).

## Membership Meeting

Monday, May 8, 1978, 8:00 pm., Eames Theater  
The Pacific Science Center

Program: Ben Woo, the founder-president of PSMS, will  
talk on Boletus. Ben is an expert in this genus, and will  
illustrate his talk with slides.

Also shown will be Part III. of the NAMA Slide Tape series  
Best-edible Mushrooms and Poisonous Look-alikes, narrated  
by Michael Beug.

**BOARD NEWS**

H.R.H.

Since your editor was out of town during the last board  
meeting, you get the complete minutes of the April 17th  
board meeting, rather than just excerpts.

The regular Board meeting of the PSMS was called to order  
at 8:00 pm by Vice-President Rick White. The minutes of  
the March meeting were accepted as read.

Correspondence: More from those organizing the Puyallup  
Fair. Tacoma will handle the major part of the booth, plan-  
ning on having fresh specimens brought in daily. (At the  
last membership meeting, some support was pledged by about  
six or eight persons.) Winston suggested a schedule to limit  
the booth attendants to two hours at a time. V.P. White  
asked for a volunteer to co-ordinate the booth workers.  
Secretary Sally Hansen suggested some publicity be given  
the affair in the Puyallup (and proximal areas) papers to en-  
courage Fair visitors to bring specimens to the booth, there-  
by getting a possible supply of fresh ones for display and  
identification. Lom Nee March volunteered to co-ordinate  
workers.

Jack Orth gave the President's report for Jennie: Notice  
from the Science Center that we will be billed for use of  
Board Room, etc., quarterly now instead of making a yearly  
donation. Of course, the Exhibit gate receipts will still be  
split 50/50 with the Science Center. Jack says that the cost  
will still come out about the same, give or take a few dol-  
lars.

Jennie asked that our status with NAMA be established.  
V.P. White made a motion that Jack Orth be made a life-  
time member. The motion was seconded, and passed.  
There are corrections to be made in the new (paperback edi-  
tion) book, "Mushrooms of North America" by Miller. They  
will replace the book upon receipt of the third page of the  
misprinted book.

The Poison Control Pamphlet stock is down, and time again  
to update same. The Education Committee will be notified.  
The dates of the May fieldtrips appear elsewhere. Some  
Eastern Washington Clubs are being asked to join us at  
Clear Lake.

**NEW - 1978 - MEMBERSHIP ROSTER**

H.R.H.

The new, 1978 Membership Rosters are ready and will be  
available at the May and June membership meetings, as well  
as at the fieldtrips. Please make every effort to pick up yours  
so that Joy McKnight does not have to mail it to you (which  
is expensive and a lot of work).

Joy and an acquaintance of her daughters went all out and  
produced a very nice roster. The beautiful mushroom on the  
front cover - *Laccaria amethystina* - was designed by Irene  
O'Connor, who also designed the official emblem of PSMS  
which appears on the back cover. Thank you Irene and Joy.  
Any errors should be reported to Joy immediately, so that a  
correction can be printed in Spore Prints.