

NJMA news

VOL. 20 #6

NOV. 1990

THE OFFICIAL NEWSLETTER OF THE NEW JERSEY MYCOLOGICAL ASSOCIATION

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Sue Kibby

EDITOR:

Michael Rubin

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Mail checks (payable to NJMA) to:
Grete Turchick,

NEWSLETTER
DEADLINES:

Feb.10, April 10, June 10
Aug. 10, Oct. 10, Dec. 10



CALENDER

NOV. 4 Gary Lincoff - Mushroom grouping - SCEEC

DEC. 2 Van Cotter - Fungal Fiends - SCEEC

SEE DETAILS INSIDE

1991

JAN. 6 Holiday Party!, photo contest, and election of officers. Please bring finger food -SCEEC

FEB. 24 Mycophagy session at SCEEC.

March 10 Meeting at SCEEC. Topic to be announced.

April 28 Meeting at SCEEC. Topic to be Announced.

Directions to SCEEC. Route 287 to the North Maple Ave. Baskin Ridge exit. Follow N. Maple Ave. till it bends left and becomes S. Maple Ave. in town. Follow S. Maple Ave. past the horse stable until you come to Lord Stirling Rd. Make a left onto Lord Stirling Rd. and follow until you come to SCEEC on the left (about a mile).

PHOTO CONTEST

It is time to submit your best photographic efforts for our annual photo contest. Please limit your contribution to 10 slides total. The slides will be shown during our annual holiday party. There are three categories to enter your photos in:

1) **Technical**- photographs should show all the features required for proper identification of the specimen.



2) **Pictorial**- any photographic rendition involving mushrooms or any other fungus. This will be judged on artistic merit as well as photographic technique.

3) **Activity**- any photograph depicting activities involved with mushrooming. We could use more submissions in this category. Each slide must include a caption describing the activity (Hint: the judge likes clever captions!)

Rules:

- 1) No more than 10 slides per person.
- 2) Entries must be received no later than Dec. 2, 1990.
- 3) All entries must be 35 mm slides.
- 4) All slides must have submitters name, category of submission, and the name of the mushroom if possible (required for the technical category)

Prizes

1st prize - 3 rolls of Kodachrome ASA 64 slide film

2nd prize - 2 rolls of film

3rd prize - 1 roll of film

Mail entries to: Michael Rubin, 20 Lorraine Terrace, Boonton, N.J. 07005. You can also give them to him at the November and December meetings.

FUNGUS FEST WAS FANTASTIC!

The 1990 Fungus fest was a great success thanks to all of you. Special thanks go out to Ursula Pohl who did a wonderful job as chairperson. Additional thanks to Dr. Gene Varney, Erica and Len Frank, Artie Grimes, Viola and Joe Spock, Marge Berrien and Ed, Alex Adams and Carol, Grete Turchick, Michele Stewart, Joe K, Hana Tschekunow, Andy Heber, Bruce and Jan Vansant, Joe Latorraca, Joe Rapp, Al Northrup and Herb Pohl.

The event was made even more special with Bob Peabody's Foolproof Four Lecture. Ray Fatto, Sue Kibby and Bernice Fatto deserve our undying gratitude for their herculean efforts in identifying all those mushrooms. The cooking demonstrations by Bob and Genia Hosh and Jim Richards held many people captivated by their culinary expertise. Thanks to Dorothy and Bill Smullen for hosting the post Fungus Fest feast (where did you think all those cooked mushrooms go!). Last but certainly by no means least we give our thanks to Paul and Linda Meyer, who not only planned the mushrooms walks but kept all of the side activities running smooth as clock work. I know I have forgotten to mention someone and to those individuals I apologize. An event like this could never occur without the team work and dedication of all these people. Thank you all very much!

NJMA LIBRARY IS NOW ACCESSIBLE

Here is the announcement many of you have been waiting for. The NJMA collection of mycological books has been added to the Somerset County Park Commissions Environmental Education Center library. We have a separate section which is accessible

to all our members and the members of SCEEC. The collection holds a wide variety of books dealing with identification, cooking, toxicity, and habitat of mushrooms. It has a few books that are no longer in print and are quite expensive. You are welcome to use the books in the center's library. If you wish to take out a book please see our club librarian, Bruce Vansant. You will be held responsible for the books you take out. This includes replacement cost of the book if it is not returned when due. There are still many books to be added to the collection but I encourage you to explore those books that are already present. A listing of books in the collection will be available in the "near" future. Many thanks to Bob Hosh, Bruce Vansant, and Michael Rubin for their efforts in cataloging the books.

CLUB OFFICERS WANTED!

The club will hold elections during our January Holiday Meeting. We need people to run for Vice President. The duties include helping the president with setting up the schedule, forays, speakers, etc. It is a great way to get involved with a wonderful group of people. Why not you! You don't have to be an expert mushroom identifier to be an officer.

MUSHROOM CULTIVATION GROUP

Many people expressed interest in Ray Fatto's Shitake mushrooms and Dr. Varney's Shitake logs. If people are really interested perhaps we should form a cultivation group. If you are interested contact Michael Rubin during the winter meetings.

ERRATA

The last newsletter contained an article on spores. Unfortunately there was a mistake. The leading sentence on the last paragraph

should have read " There are many chemical reactions to help differentiate spores".

November 4th

Gary Lincoff author of the **Audobon Guide to North American Mushrooms** will be our guest lecturer. His talk will focus on mushroom grouping. Did you ever wonder how the pros can get to an identification so quickly? Here's your chance to find out. Gary is a very entertaining speaker, it should be a very enjoyable talk.

December 2nd

Van Cotter a mycologist with **American Cyanamid** will be our guest lecturer. Van's talk will be "From Boletes in Nepal to fungicides in New Jersey". This should be a very interesting talk. Come and learn all about our fungi friends turned fiends.

January 6th

Holiday party, photo contest, and election of officers. Please bring finger food (cookies, cake, dip, hors d'oeuver, etc.) to be shared with others.



CORRECTION SHEET FOR AUDOBON GUIDE AVAILABLE

Peter Katsaros author of Audobon Society Pocket Guide to Familiar Mushrooms of North America has made available a

correction sheet for his book. He apologizes to his readers and wants to make it known that he was not given the opportunity to proof read the final copy. If you would like a free copy see Michael Rubin.

MUSHROOM TRIP TO THE AMAZON

Gerry Miller and the Wild Mushroom Traveling Road Show are taking a trip to the Amazon. There are two trips planned one for January 5-19 and the other for January 19- February 3. If you are interested contact Gerry Miller, Box 126, East Haddam, Ct.

SHIITAKE and MUSHROOM THE JOURNAL by Ray Fatto

At our September 30th Fungus Fest, a considerable amount of interest was aroused by the display of a large pan filled with homegrown shiitake, *Lentinus edodes*, in the cooking display area. This was further enhanced by the small logs bearing a fresh fruiting of shiitake that Gene Varney brought in as part of his wood decay exhibit. Many people asked how the shiitake were grown and where did I get the spawn. I replied that success came easily by merely following the few simple directions provided with the spawn which had been ordered from the nearest source that advertised in the Mushroom Journal, and that I would provide the name and address. Hopefully, this information has been sent to all those who requested it, but in case I missed someone, the source is: Elix Corp., Rt. 1, Box 133-1A, Arvon, VA. 23004. Request a current price list for shiitake spawn.

What really surprised me was that no

one knew that there was a nationally published Mushroom magazine! Our friend Sam Ristich is on the Editorial Advisory Board and is always touting the magazine, but obviously none of these individuals could have been present at a meeting when Sam spoke. While "Mushroom, the Journal of Wild Mushrooming" does not compete technically with "Mycologia" or "Mycotaxon", it is an excellent publication presenting articles of general interest to the mycophagist and amateur mycologist. In order to inform all of our members of this interesting publication, a descriptive page from the last issue is being reproduced in this newsletter. Not included on this page is the fact that a two year subscription is \$28, and \$39 for three years.

ANDREW WEIL TALK ON NUTRITIONAL AND MEDICINAL PROPERTIES OF MUSHROOMS (REVIEW)

The following article is copied from the Las Angeles Mycological Society's newsletter called "The Spore Print" [Oct.1990]. It is a compilation of notes taken by the editor Greg Wright. While the New Jersey Mycological Association encourages its membership to keep an open mind on this topic this article in no way is an endorsement of forgoing sound medical and nutritional practice.

Mushrooms have long been valued in the Orient for their nutritional and medicinal properties, but these virtues have mostly been overlooked in the West. The Western oversight is largely due to the fact that most North Americans and many Europeans are mycophobic (fearful of wild mushrooms).

Mushrooms are high in protein and certain minerals and vitamins while being low in fat and digestible carbohydrate. The low protein becomes a high percentage of their weight only after some of their abundant water has been cooked or dried out of them. The protein is of high quality and is a good complement to the protein in grain, since mushroom protein is high in the amino acid lysine, which grain is low in. Americans tend to eat too much fat, so mushrooms are an excellent item for the American diet unless they are used as an excuse to ingest extra quantities of butter, cream, and cheese.

Raw mushrooms have tough cell walls that inhibit nutrient absorption, they have compounds that inhibit protein digestion, and they have carcinogenic (cancer-causing) toxins. Cooking mushrooms breaks down the cell walls, breaks down the digestion-inhibiting compounds, and destroys many of the toxins. Therefore it is best to eat mushrooms cooked, not raw.

A problem with commercial *Agaricus* is that some growers use unsafe amounts of pesticides. Some pesticides that are approved for use on agricultural crops need sunlight to break them down before the fruit of vegetable reaches the consumer; when used on mushrooms, these pesticides are not broken down because the mushrooms aren't grown in sunlight. If you eat commercial mushrooms, it is safer to eat wood-growing species like oyster mushrooms and shiitake that are less subject to predation by insects and therefore have less or no pesticide used on them.

Mushrooms are rich in physiologically active compounds, so it has been remiss of Western medicine to have mostly ignored them. Antibiotics like penicillin have been

extracted from lower fungi like bread molds, but mycophobia has prevailed over good science where mushrooms are concerned. It turns out that physicians and scientists are as governed by personal biases as everyone else.

A second problem is the Western approach to medicine. The more specific the effect of a drug is, the more orthodox Western medicine values it. The ideal is the "magic bullet": An unwanted physiological condition is identified and a "magic bullet" drug is given which eliminates the condition--preferably by acting via a fully understood physiological pathway.

Chinese medicine has an opposite viewpoint. Drugs that only do one thing are the *least* valued; most valued are drugs that restore balance to the whole body. An example is the herb ginseng-- the genus name for which, *Panax*, is related to our English word panacea, and refers to the plant's broad-ranging restorative powers (in particular, pharmacological studies have found that Chinese ginseng works well as a stimulant and American ginseng as a stress reducer). To Western medicine, a drug that does too many things-- a "panacea"-- is suspected of being merely a placebo. From the 1600's onward there has been a lucrative business shipping American ginseng to China, where its health-giving properties are highly valued; yet it wasn't until the 1970's that American pharmacologists began studying it.

It turns out that a number of wood-growing mushrooms that have been revered in the Orient but ignored in the West have health-giving properties of the panacea type. These include *Ganoderma lucidum* (called ling zhu or ling chi in china and reishi or mannentake in Japan) *Grifola* (*Polyporus*, *Polypilus*)

umbellata (zhu ling in China), *Lentinula* (*Lentinus*) *edodes* (shiitake), and *Fammulina velutipes* (enoke). These mushrooms produce polysaccharides of high molecular weight which stimulate the immune system and are effective against cancers and viruses.

In China, medical researchers have determined that a water extract of *Grifola Umbellata*, given orally and by injection, can cure lung cancer. Like the other polysaccharide-containing mushrooms, not only is *G. umbellata* completely nontoxic, but it reduces the toxic side effects of chemotherapy when the two are used together to treat lung cancer. The large, compound fruiting body of *G. umbellata*, like its more common close relative *G. frondosa*, hen-of-the-woods, bears a cluster of caps which make excellent eating when cooked. But it is the sclerotium--an underground, wood, tuber-like structure from which the fruiting body arises--that is rich in polysaccharides and which part is used medicinally. Dried slices of the sclerotium can be purchased inexpensively from any Chinese herb supplier. American researchers tested *G. umbellata* for anti-cancer activity and declared it to be ineffective. This happened because they tested it on cancer cell tissue cultures rather than on animals or people who had cancer. Obviously, something that works by stimulating one's immune system is not going to work when applied to an isolated culture of cancer cells. But Western science has a predilection for breaking things down into parts-- in contrast to the Oriental approach of working with wholes.

One of the polysaccharides in shiitake, called lentinin (after the original genus name, *Lentinus*), has been effective in treating

AIDS. Further testing of lentinin on AIDS patients is being conducted by researcher in San Fransico. Curiously, the lentinin was found to be effective only within a certain dose range; doses either **too small or too large** were ineffective.

Shiitake also contains a compound, eritadenine, that is effective in reducing cholesterol. Two ounces of dried shiitake or four ounces of fresh shiitake eaten daily lowered cholesterol in test subjects by 10% in one week.

Eating enoke has been found to be effective in regressing tumors. It has been observed, in fact, that in the one local area of Japan where enoke is cultivated, and where it is most available to the public and is abundantly eaten, cancer rates are lower than in the rest of the country.

Although it is theorized that the immune-system-enhancing polysaccharides in the preceding fungi are by-products of wood decomposition, there are plants that have the same type of polysaccharides in their roots. An Oriental species of the pea family *Astragalus* (the locoweed genus; the species is called *huang qi* in China) has antiviral properties; and a Western plant, *Echinacea* (the purple coneflower genus), has been found to have antiviral and immune-system-stimulating effects in tests in Germany.

Also it has been found by Japanese researchers that the prized edible matsutake (*Tricholoma [Armillaria] matsutake*, which is closely related to the American white matsutake, *Tricholoma magnivelare [Armillaria ponderosa]*) can inhibit tumors. Unfortunately, the researchers decided that the mushroom was too expensive to continue testing! A single mushroom can sell for

\$150 in Japan.

Although immune-system-enhancing properties of mushrooms have mostly been attributed to polysaccharides, another theory which has been advanced in connection with shiitake attributes this activity to mycoviruses associated with the spores.

The legal status of medicinal mushrooms in the United States is peculiar. Medicinal mushrooms and herbs are sold without any regulation...except that it is illegal to make medical claims for them. Before such claims can be made legally, present law says that **every compound** in the mushroom of plant must be tested and proved safe. Since any particular mushroom of plant contains many dozens of compounds, many of which are unidentified, such testing is an impossibility. Fortunately, as has been done with the antibiotics produced by molds, it will probably be possible to make extracts from mushrooms and test these.

The foregoing is another example of Western medicine being more comfortable dealing with parts than wholes. People at the FDA would be nonplussed to be shown a whole *Ganoderma* or *Grifola* mushroom and be told that here is a new medicine that merits their approval. Whole mushrooms are too messy and unwieldy for them.

The fact is that physicians and pharmacists tend to be nature-phobic. They will give dire warnings about the dangers of picking and eating wild mushrooms or plants but feel perfectly comfortable prescribing drugs that are more foreign and dangerous to the human body than the things pothunters gather.

There needs to be an attitude change...and a

whole new category of FDA regulation for botanicals. At the same time that people should be stopped from selling botanicals based on patently false claims, the real, major medical benefits of botanicals should be researched, acknowledged, and promoted.

Here are some additional items Weil commented on during the period for questions following his talk:

Some of the immune-system-enhancing compounds in fungi and plants are more effective when injected than when ingested.

Not only will cooking fungi not harm the large-molecule polysaccharides they contain, which are very heat-stable, but cooking is important to break down cell walls of the fungi to make the polysaccharide and other compounds more available to the body.

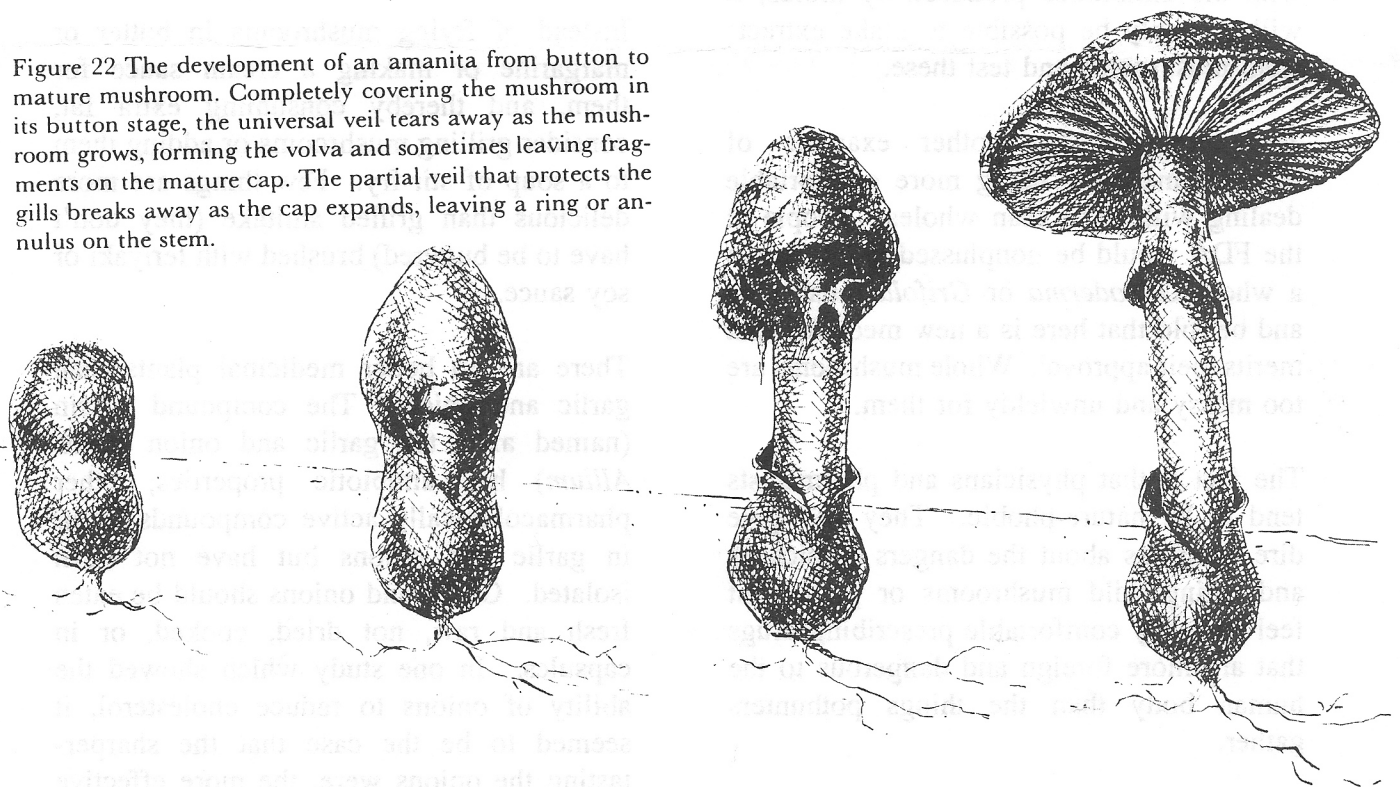
Instead of frying mushrooms in butter or margarine or making a cream sauce for them, and thereby consuming extra fat, consider grilling mushrooms or adding them to a soup or stir-fry. Few things are more delicious than grilled shiitake (they don't have to be buttered) brushed with teriyaki or soy sauce.

There are no better medicinal plants than garlic and onion. The compound allicin (named after the garlic and onion genus *Allium*) has antibiotic properties; other pharmacologically active compounds occur in garlic and onions but have not been isolated. Garlic and onions should be eaten fresh and raw, not dried, cooked, or in capsules. In one study which showed the ability of onions to reduce cholesterol, it seemed to be the case that the sharper-tasting the onions were, the more effective they were. In China it has been found that

a certain lethal fungus infection of the brain can be inhibited by injected garlic (injected because of the high quantity required) and with no toxic side effects, whereas the main antibiotic currently being used in the West to treat this infection is about as toxic as the infection itself.

DUES ARE DUE!!!!!!
PLEASE SEND YOUR CHECKS, PAYABLE TO NJMA, TO GRETE.

Figure 22 The development of an amanita from button to mature mushroom. Completely covering the mushroom in its button stage, the universal veil tears away as the mushroom grows, forming the volva and sometimes leaving fragments on the mature cap. The partial veil that protects the gills breaks away as the cap expands, leaving a ring or annulus on the stem.



Mushroom illustrations from The Mushroom Hunt, by Robert Porter, E.P. Dutton, 1983.

"An informative thrill a page." — *Library Journal*

Mushroom

If you're interested in mushrooms and the outdoors, you should be reading *Mushroom, the Journal*, because this is just a sample of what we've already delivered:

Issue 1 (Fall 1983) — Artistic Spore Prints (Here's how to make them); Mushrooms at the Summit (Craig Claiborne shares his recipe from Williamsburg); What Makes a Good Field Guide? (Nine of those available in 1983 are evaluated)

Issue 2 (Winter 1983-84) — Toxins and Hallucinogens (The slow-to-act mushrooms are the most deadly); The Woodrotters (Lumber may come to you with fungi in place)

Issue 3 (Spring 1984) — For the First Time (How do you know when to go out in spring?); Keys (An introduction to a vital tool)

Issue 4 (Summer 1984) - Photocopy available

Issue 5 (Fall 1984) - Growing Your Own Oysters (It's not difficult to get started); Mushroom Bandits (You have some tough competition out there)

Issue 6 (Winter, 1984-85) — Photocopy available

Issue 7 (Spring 1985) — The Merkle (Eugene J. McCarthy philosophizes); A Critique of the Photos in the Audubon Field Guide (By Gary Lincoff)

Issue 8 (Summer 1985) — Key for Use with the Audubon Field Guide (By Gary Lincoff); Just for the Smell of It (Bringing your nose into play can help with identification)

Issue 9 (Fall 1985) — The Inky Caps (Autodigestion makes them special)

Issue 10 (Winter 1985-86) — The Macgruder Statements (Ten interested parties comment on overpick); All Kinds of Baskets (It's possible to have many, but never too many)

Issue 11 (Spring 1986) - Find Those Morels (With advice from the winner of the national morel-hunting championship); The 1,2,3,4,5 of Starting Out (The experts come close to agreement on how beginners should proceed)

Issue 12 (Summer 1986) - Controlling the Mushrooms of Norway; Lumping and Splitting (There are fewer, or more, species, depending on which camp you're in)

Issue 13 (Fall 1986) — The Chanterelle; Cultivating Morels (with details of the newly-patented process); Should Sale of Wild Mushrooms be Regulated? (The Food and Drug Administration thinks so)

Issue 14 (Winter 1986-87) — Fungal Allergy; The Big Problem in Alaska is Underpick (or, maybe, bears); You Can Grow the Garden Giant in Your Backyard

Issue 15 (Spring 1987) — Photocopy available

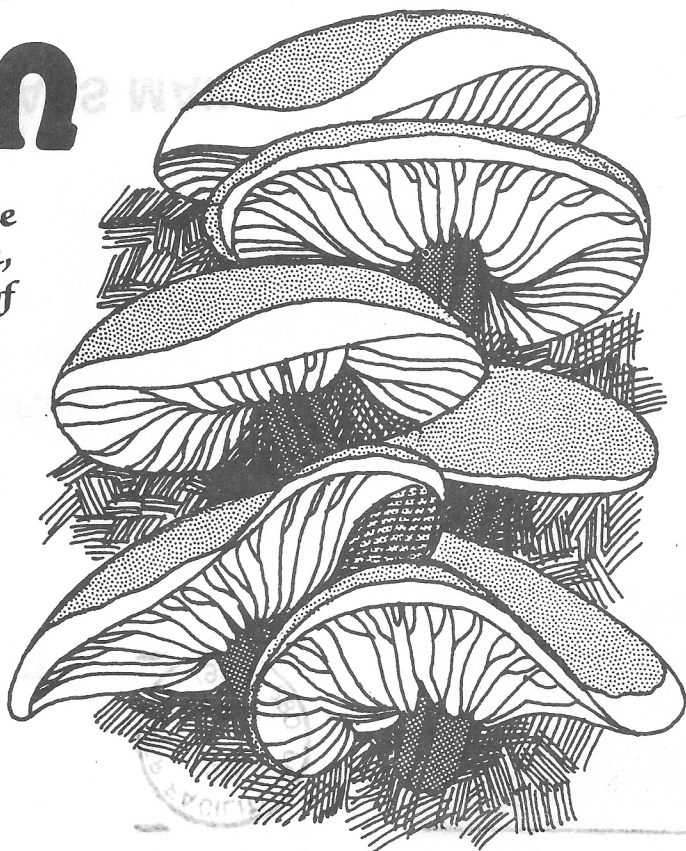
Issue 16 (Summer 1987) — The Chiggers Are Out There (but you can foil most of them); Chuck Barrows Looks Back (and sideways and to the future)

Issue 17 (Fall 1987) — The Nutritional Value of Mushrooms (It's quite species specific); The FDA Issues its Mushroom Interpretation (and leading mushroomers react)

Issue 18 (Winter 1987-88) — The 20 Most Beautiful Mushrooms (with no swimsuit competition to complicate things); Early Mushroom Manuals in the U.S. (One was written by a death-defying taste-tester)

Issue 19 (Spring, 1988) — The Definitive Word on Mycorrhizae (They're important to more than just mushrooms); Life in the Bog; You Can Cook with Spirit and Spirits

Issue 20 (Summer, 1988) — Deadly Humor (How mushroomers joke about danger); Mushrooms Decline in 10 European Countries; Using the Microscope (An introduction by Leo Tanghe); Pronounce it Correctly (or be in good company)



Issue 21 (Fall, 1988) — Ancient Forests (We need to save some); To Russia with Mushrooms; Get Started in Cultivation by Going to Garage Sales; Mushrooming Where the Yangtze Bends

Issue 22 (Winter, 1988-89) — A Winter Project (Start planning for Spring); Armillaria is Big in Idaho (It's called root rot); What's Happening with Amanita Phalloides?

Issue 23 (Spring, 1989) — What's Holding Up Tame Morels? (The patent was issued a long time ago); Are They Raking Our Truffles to Death? And yes, you can train your own tuber hound

(Now issues 24-28 also are available as back issues.)

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