

# Spore-Addict Times

The Newsletter of the Pikes Peak Mycological Society

July 1992

## Fungus used in chemical factory in a bottle

by Walter Johnson

Two of the seventy-five alkaloids produced by the rosy periwinkle are used to treat Hodgkins disease, diabetes, leukemia and other cancers in children. A plant culture breakthrough called "hairy roots," reported in *Science News* (Vol. 141, p. 306), could make such compounds more readily available.

In this technique, seeds are planted in a starter pot. The seedling is wounded at the growing tip and infected with *Agrobacterium rhizogenes* bacteria. The seedling produces "hairy roots" at the site of the infection which are removed and placed on antibiotic solid media. Antibiotics remove the bacteria, then the disinfected roots are transferred to antibiotic-free solid media.

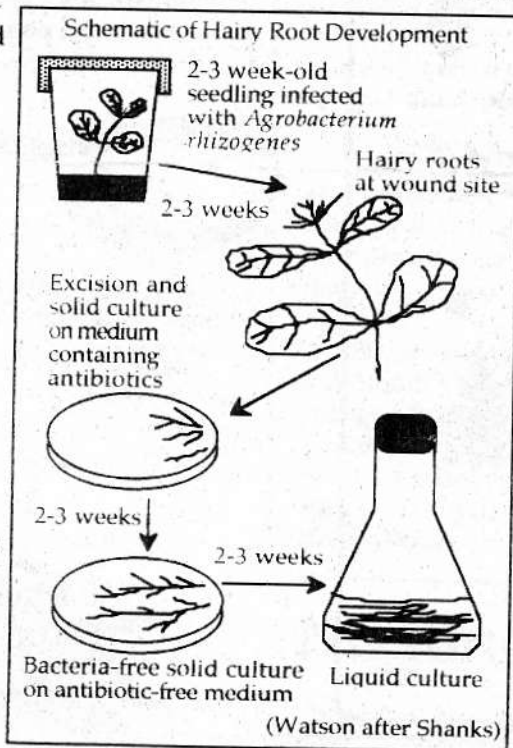
Finally, pure hairy root culture is transferred to liquid culture. Every month, the hairy root culture is subdivided to increase its biomass many thousandfold. Anticancer compounds are then extracted from the hairy

roots and the liquid culture medium.

Production of a "chemical factory in a bottle" can be stimulated by adding pieces of fungal cell walls. This technique has caused hairy root systems to produce new chemicals. Yield can be increased by causing hairy root systems to "turn green" and use photosynthesis to

become self-sustaining. Genetic engineering can also increase yields by inserting genes into hairy root cells.

[Research and original schematic by Jacqueline V. Shanks, Chemical Engineer, Rice University, Houston, Texas.]



## Biblical "manna from heaven" identified

by Walter Johnson

The biblical "manna from heaven," which saved the starving Israelites wandering in the desert, has been identified as the Near East manna lichen, *Lecanora esculenta*.

The manna lichen is easily detached by wind and accumulates in rock crevices. Every so often, a wind storm collects a huge amount and drops it in deposits several inches deep in some unexpected spot.

The nomads of the Kirghiz steppe regularly sought out accumulations and used the lichen to make bread. It was called "wonder grain" in eastern Turkey, and "bread from heaven" by the Kurds. So what is "Wonder Bread" named for?



Saturday

Announcing

August 1st

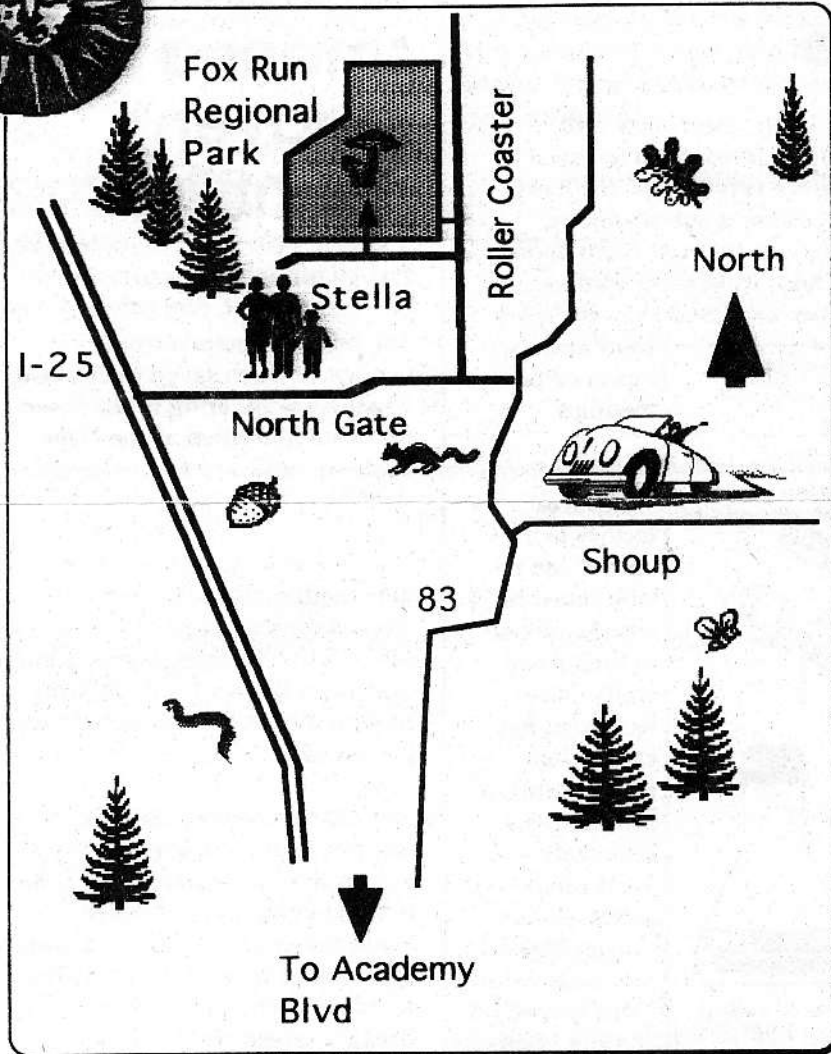
THE THIRD ANNUAL

# PIKES PEAK MYCOLOGICAL SOCIETY

Fox Run Regional Park

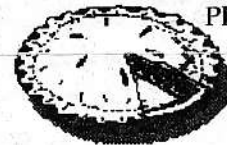
# PICNIC!

Meat and  
beverages  
provided!



Please reserve your place in advance when you attend the July meeting, or contact Society President Mike Chladek at 380-9199 by 28 July.

The Society will provide hamburgers, hot dogs, iced tea, lemonade, cups, plates, utensils, and fire.



Please take a dish to share such as a vegetable, salad, or dessert.

Feasting begins at 12:00 noon at park pavilion number two (the same spot as last year's picnic).

Park rules prohibit glass bottles and alcohol.

## Spore-Addict Times

P.O. Box 1961  
Colorado Springs, CO 80901

Spore-Addict Times is published monthly from April through October by the Pikes Peak Mycological Society. Submissions of articles, book reviews, letters, artwork, recipes, and ideas are encouraged.

The Pikes Peak Mycological Society is a non-profit organization dedicated to advancing interest in, and understanding

of, the field of mycology. 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.

- President..... Mike Chladek..... (719) 380-9199
- Vice President..... Dan Lacy..... (719) 636-2470
- Secretary..... Annette Campbell..... (719) 593-9912
- Treasurer..... Lori Ligon..... (719) 635-2213
- Foray Coordinator.....
- Newsletter Editor..... David Watson..... (719) 593-9912

# CMS presents mushroom fair

Next month, the Colorado Mycological Society will present their *sixteenth* annual Mushroom Fair. This year's fair continues traditions of past fairs including on-the-spot mushroom identification. The official identifier will be Dr. Harry Thiers of San Francisco State University.

## The Details

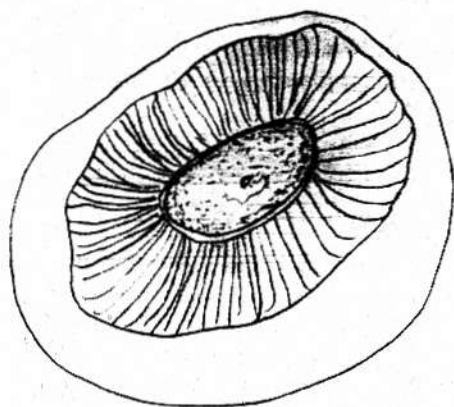
Date: Sunday, 23 August

Time: 11:00 a.m. to  
5:00 p.m.

Place: Denver Botanic  
Gardens  
1005 York Street  
Denver, CO

Cost: Free with your paid  
admission to the  
Botanic Gardens

The fair will also feature educational exhibits, mushroom photography and toxicology information, and mushroom book and T-shirt sales.



*Lactarius deliciosus*

## Meeting News

The truffle is regarded as the most expensive edible mushroom in the world. However, dried *Amanita muscaria* sells for \$40-\$400 per ounce. Muscimol and ibotenic acid, which are extracted from *Amanita muscaria*, sell for \$6 million and \$32 million per pound, respectively. Walter Johnson will be giving a fifteen-minute talk on his experiences with *Amanita* species. Walter will greatly appreciate questions and comments to help him prepare for his presentation at the Telluride Mushroom Conference.

Walter would also like to talk about economic opportunities in mycology, if time permits. For example, do you know how to get U.S. and foreign patents for your favorite mushroom strain?

If you have any PPMS business cards, please take them to the meeting so that we may determine how urgently we need to print more.

Please note that the date for this month's meeting has been changed from Monday, 27 July, to Tuesday, 28 July. The time and place are unchanged: 7:00 p.m. at the Junior League office at 2914 Beacon Street.

**28** July, 1992  
Tuesday

*New meeting date!*  
*Walter Johnson will*  
*give his Telluride*  
*talk on Amanitas -*  
*7:00 p.m. at the*  
*Junior League.*

## Last Month

Fifteen members attended the meeting on 22 June.

President Mike Chladek related some of the highlights of *Mushroom, the Journal*.

The Society approved the purchase of a video on morels.

Some of the details of the August picnic were finalized, but a few volunteers are still needed to handle logistics.

Jay Kilgore presented a clever orienteering technique that should help lost forayers avoid getting more lost while trying to find their way home.

## No fungus, no forays

There have been no official Society forays recently because there has not been sufficient fungal growth to warrant one.

However, a number of Society members—Lee Barzee, Lori Ligon, Ester Price, David Watson, Cass Trzyna, and others—have scouted a variety of regions: Divide,

Cripple Creek, Fox Run Park, and even the newly-opened recreation area on the north slope of Pikes Peak.

Among the few discoveries: *Leccinum* on Old Stage Road (18 July) and a single *Russula* "mushrump" in the pine needle duff of Black Forest (11 July).

# Stems & Pieces

## YAMC (Yet another mushroom cookbook)

The University of Texas Press has just published *Edible Wild Mushrooms of North America* by David W. Fischer and Alan E. Bessette. Subtitled "A Field to Kitchen Guide," this book identifies over one hundred species and includes two hundred color photographs and more than seventy recipes.

The book is available in both hardcover (\$35) and paperback (\$19.95) editions. PPMS can earn a commission on every copy sold to its members, so consider buying your copy through the Society.



## Mushroom Study Tour of Morocco

The non-profit organization Fungophile, Inc. is organizing a mushroom study tour of Morocco, 1-15 December 1992. Gary Lincoff and Emanuel Salzman, M. D., will lead the tour.

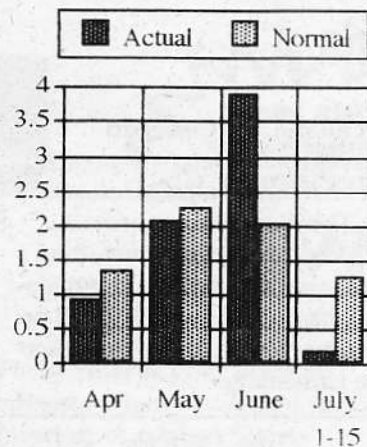
The tour will encompass the Mediterranean coast, the Rif and Atlas mountain ranges, and the Sahara. Ample time for sightseeing is included.

For more information contact

Fungophile  
P. O. Box 480503  
Denver, CO 80248-0503  
(303) 296-9359

# Rain Report

Colorado Springs Monthly  
Rainfall (inches)



**Totals as of 15 July:**  
Normal year-to-date: 8.27 in.  
Actual year-to-date: 9.53 in.  
(115 percent of normal)

**Thirty-day outlook:** above normal  
(through mid-August)

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Pikes Peak Mycological Society  
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Colorado Springs, CO 80901

GMF COLD SPRINGS 809 19:00 07/21/92 DCR#1



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