

Newsletter of the Mycological Society of America

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Important Dates

September 15 — Deadline for
next *Inoculum*.

About this Issue

The business of the Society will occupy a large part of this issue and the remaining numbers of the year. Many MSA committee reports were available prior to the annual meeting and are included here. The minutes and the details of the awards presented at the annual meeting will appear in the October issue. Those of you working with Myxomycetes for teaching or research will be interested in the "techniques" article by Walter Sundberg and Harold Keller (page 12) and the Myxomycete videos (page 10).

Next Deadline and Electronic *Inoculum* questionnaire. Deadline for submission of material for the October issue of *Inoculum* is September 15, 1996. In early July I broadcast an electronic *Inoculum* questionnaire as a message to members with an e-mail address in the MSA directory. Response was good so I will continue to use this technique for gathering last-minute news. But don't wait for the reminder. News and articles welcome at any time—on paper, diskette, or in an e-mail message. See page 18 for details. I am now using a new e-mail address and can receive documents sent as "attachments" by some mail systems.

Several *Inoculum* questionnaire messages were returned as "undeliverable." If you have an e-mail address and didn't receive the message, please check your entry in the published MSA directory or online from the MSA Home Page. The URL is <<http://www.erin.utoronto.ca/soc/msa/>>. You can submit corrections to Allen Press from the Directory Web site or by mail or e-mail (see page 17).

Ellen Farr <farr.ellen@nmnh.si.edu>

Citizenship and Scientific Responsibility

Some individual scientists have asked whether it is proper for a scientist to engage in public discourse over scientific issues. Does he or she lose objectivity in the process? I have often replied that the scientist has an obligation to explain his/her research AND its implications to the world at large, and also to correct policy-sensitive misinterpretations of science that appear in the popular press. Steve Gould, in his book of essays *Dinosaur in a Haystack*, (p. 318), says, "As a scientist, I can refute the stated genetic rationale for Nazi evil and nonsense. But when I stand against Nazi policy, I must do so as everyman—as a human being. For I win my right to engage moral issues by my membership in *Homo sapiens*—a right vested in absolutely every human being who has ever graced this earth, and a responsibility for all who are able." We should not allow our particular role as scientists, important as it is, to keep us from exercising the same right and duty that everyone has to speak out on important issues of the day. Our extra knowledge should aid, not burden us in our public role.

[From *ASC Washington Initiative*. Vol. 10. Submitted by Amy Rossman]

MSA Official Business

Official Reports

This section includes the Annual Reports of MSA officers, committees, representatives, and liaisons with other groups. Additional reports and the announcements of awards and minutes from the 1996 meeting will appear in the next issue of *Inoculum* and the final issue of the year will include any remaining reports and the financial summary for the year.

The officers of the Mycological Society of America for the year 1996–1997 are:

President: James H. Ginns
Eastern Cereals and Oilseed Centre,

Agriculture Canada, Ottawa, ON K1A 0C6. Phone: 613-759-1382.
<ginnsj@em.agr.ca>.

President-Elect: Mary E. Palm
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Vice President: George C. Carroll
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Secretary: Linda M. Kohn
Dept. Botany, Univ. Toronto, Erindale Campus Mississauga, ON, CANADA

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Treasurer: Richard J. Howard
Science & Engineering Laboratories, DuPont Central Research & Develop. P.O. Box 80402 Wilmington, DE, USA 19880-0402. Phone: 302-695-1494 <howardrj@a1.esvax.umc.dupont.com>

Past President: Donald H. Pfister
Farlow Herbarium, Harvard University Cambridge, MA, USA 02138 Phone: 617-495-2368.
<dpfister@oeb.harvard.edu>.

Secretary's Report 6 August 1995–26 July 1996

1. Sent list of 1995–1996 Council to AIBS, AAAS, NSF, and IUMS.
2. Mailed renewal forms and nomination ballot directly to members.
3. Instituted a new Society policy of sending a job description to each Committee Chair, Representative and Liaison from the Manual of Operations, with a request for revisions to the MOP. Received many suggestions for revisions.
4. Sent request for agenda items and reports for the mid-year Executive Committee meeting to Council and all Committee Chairs.
5. Produced MSA Home Page with assistance of R. Chow. Home Page has information on all MSA activities, membership and membership form, access to the Online Directory, to the searchable Annual Meeting Abstracts, and to the MSA Bulletin Board, plus a wide range of links aimed at researchers, educators, neophyte collectors, and casual browsers. A link to MSA member sites is being added. Entered Home Page on all major net search engines.
6. Participated in mid-year Executive Committee meeting on March 9 at the Farlow Herbarium, Harvard University under bizarre circumstances. Due to inclement weather, Logan Airport in Boston was closed and I was unable to fly out of

Toronto, although I was in telephone contact with President Pfister. Vice President Palm, Treasurer Howard and Past President Rossman were marooned in Philadelphia but communicated through conference call. Notes were taken by Ginns and Pfister, and after consultation I prepared minutes for *Inoculum* 47(3):3–4.

7. Mailed MSA Ballot, Endowment Fund contribution form, announcement of awards, and request for auction items, photographs, and entries to the Fungus Race to members.

8. Emailed request for agenda items and reports for the annual Council meeting.

9. Sent letter of welcome, a copy of "A Brief History of Mycology in North America," and a 1995 Directory of Members to new MSA members.

10. Corresponded with various members and responded to inquiries via phone, fax, mail and e-mail. Mediated orders for rental of MSA Membership List.

11. Sent over 100 copies of "Careers in Mycology" on request.

12. Corresponded with AIBS, ASC, IUMS, AAAS and organizing committee of IMC 6.

13. Polled Council and moderated e-mail discussion (all items passed):

(a) 9/8/95 The annual MSA meeting in 1999 will be held in conjunction with the

International Botanical Congress in St. Louis, MO. An appropriation of \$1,000 from Program Committee Funds for symposium speakers to 1995 Program Chair.

(b) 10/1/95 Approval to work with New York Botanical Garden on developing online *Mycologia* index.

(c) 12/3/95 Approval of Charles Mims as a new Associate Editor of *Mycologia*. Approval of a three-year term for Associate Editors. Currently the Manual of Operations stipulates a two-year term. Editor-in-Chief David Griffin wishes to stabilize the AEs and cut down turnover and paperwork. Leave number of Associate Editors to EIC's discretion.

(d) 3/14/96 Approved \$500. to pay registration fees for two symposium speakers, Annual Mtg. 1996. The MSA will waive page charges for authors of invited papers. Policy on symposium papers requires further Council action. The MSA, not the authors, will pay page charges for authors of invited papers.

(e) 4/29/96 Approved up to \$800 for invited symposium speaker whose funding request for travel support was unexpectedly denied.

(f) 5/15/96 Approval of Associate Editors, *Mycologia*. For 3 year terms: Rick Howard 1996–1999, Rich Humber 1996–1999, Martha Powell 1996–1999, Gary Samuels

1996-1999, Rytas Vilgalys 1996-1999 and Martin Dickman 1996-1999. For a two year term: Darrell Weber 1996-1998.

14. Moderated e-mail discussions among Council.

15. Received notices of deaths of Joe Czarnecki (October 28, 1995), Paul Arenz Lemke (18 November, 1995) and Martin B. Ellis (8 June 1996). The passing of

Czarnecki and Lemke has been noted in *Inoculum*.

[Linda M. Kohn, Secretary, MSA]

Annual Reports from Committee Chairs, Liaisons, and Official Representatives: 1995-1996

Report of the Representative To The AIBS Council

The AIBS Council met on December 3, 1995, in Washington, DC. The big news was the announcement that the AIBS was undergoing a major restructuring due to a combination of dwindling federal funds and a collapsing real estate investment entered into during the 1980s.

In 1987, the AIBS Board decided to purchase a headquarters building at the height of the real estate boom in Washington, DC. In order to finance the purchase, the Board created the American Foundation for Biological Sciences and through this foundation entered into a limited partnership with a real estate developer to buy a headquarters building at 730 11th Street. The AIBS was to provide the general partner (the landlord) a source of rental income to cover the costs of the mortgage. A 55% equity share in any profits resulting from the sale of the building was to go to the Foundation.

The AIBS anticipated occupying the building for several years before selling it and using the equity to purchase a more suitable headquarters. Unfortunately, the bottom fell out of the Washington real estate market leaving the AIBS with a serious negative equity situation. The AIBS found itself paying twice what it should for the property because the rental rates were linked to the mortgage rather than the current market rental rates. Furthermore, with shrinking federal funding, the AIBS could no longer cover these costs by allocating rent, the executive office, and the business office as indirect costs to its federal contracts.

Faced with this dilemma, the Board of Directors decided to restructure the Institute so as to be independent of support from federal contracts. This has resulted in the hiring of a management firm specializing in "non-profits" (Burk & Associates, Inc.) to work with the AIBS staff in managing most aspects (membership, finances, meetings, publications) of AIBS. In addition, the AIBS has been able to extract

itself from the real estate partnership and is now renting a new headquarters office in Washington at an annual savings of approximately \$500,000. There also has been a major down-sizing of staff that, among other things, has resulted in the abolishment of the public policy office. A list of alternatives for continuing and expanding the public policy activities of the AIBS currently is being considered.

In view of these changes, 1996 will be a year of transition/stabilization for the AIBS. During the next several months, there will be undoubtedly much discussion concerning the future directions of AIBS within the context of its new organizational environment; what it should be doing for its member societies and what its primary focus should be, i.e., public policy, publisher of *BioScience*, education, etc. [Albert P. Torzilli, AIBS Representative]

Report from the Representative to the American Type Culture Collection

Since last year's report, the Memorandum of Understanding and Agreement between the Commonwealth of Virginia, George Mason University, and the ATCC has been approved, paving the way for the relocation of the ATCC to Northern Virginia where it will occupy a new, state-of-the-art, 100,000 square foot facility which will house the collections and administration. In addition, the ATCC, in partnership with George Mason University and the Virginia Center for Innovative Technology, will occupy 50,000 square feet of research laboratory space in a new 100,000 square foot building at the Prince William Institute campus of George Mason University. This ATCC research facility will be designated the ATCC Bioscience Institute. Both buildings will be opened in early 1998. This cooperative venture should provide unprecedented opportunities for the development of innovative educational and research programs which should provide the ATCC an expanded market and associ-

ated revenues for its educational programs as well as increased opportunities for research funding through collaborative grantsmanship with GMU faculty.

Beginning in 1996, the governance structure has been modified such that what was formerly the Board of Directors has been divided into a Board of Trustees and a Board of Scientific Directors. The Board of Trustees oversees the business and activities of the Corporation. The responsibilities of the Board of Scientific Directors, comprised of representatives from the various participating scientific societies, include assessing the strengths and weaknesses of the individual collections and advising the collections accordingly, providing scientific input for culture acquisition, serving as a liaison between the ATCC and the scientific societies, overseeing education and training programs, and helping in the planning of the research initiatives for the Bioscience Institute.

The ATCC also has streamlined its staffing structure through a significant reduction of managerial levels without, however, reducing salary or benefits for its employees. This new organization defines two types of scientists; Collection Scientists who manage the activities of the specific collections, and Research Scientists who procure grants and conduct research, generating 50% of their salaries via these activities.

With the steady decline in federal support for collection services, the ATCC faces a significant fiscal challenge in the foreseeable future. However, the changes and initiatives outlined above should provide the ATCC an excellent opportunity to develop creative funding strategies for successfully meeting this challenge. [Albert P. Torzilli ATCC Representative]

1996 Report Of The MSA Awards Committee

The 1995-1996 MSA Awards Committee is composed of Dennis E. Desjardin, Chair, Joanne (Judi) Ellzey, Daniel Wubah and David Hibbett. Desjardin will be re-

tiring this year and Joanne Ellzey will become Chair of the MSA Awards Committee for 1996-1997.

The awards announcement was published in *Inoculum* and on the MSA Bulletin Board, and it was placed on the web pages or bulletin boards of the following organizations: APS, AIBS, American Soc. for Microbiology, British Mycological Society, Botanical Society of America, American Society of Plant Taxonomists, Bionet Mycology Newsgroup, and Fungal Genetics Newsletter.

The committee received a total of 11 applications for the four MSA Graduate Fellowships, two nominations and completed files for the Alexopoulos Prize, and two nominations and completed files for the Distinguished Mycologist Award. After review and evaluation of all of the files, the Awards Committee reached the following consensus:

MSA Graduate Fellowship Awards:

Kathie T. Hodge (Cornell University) - "Monophyly and host switching in *Hirsutiella*."

2. Elizabeth M. Frieders (Univ. of Minnesota) - "Species concepts in the tropical moss parasite genus *Jola*."

3. Ellen Trueblood NAMA Memorial Fellowship: James E. Johnson (Univ. of Tennessee, Knoxville) - "Systematics of the genus *Xeromphalina*."

4. Backus Award: John M. McKemy (SUNY College of Environmental Science and Forestry) - "Molecular systematics of the black yeast fungi."

NAMA has changed the name of their supported MSA Fellowship to the Ellen Trueblood NAMA Memorial Fellowship. They have specifically requested that if any of the recipients of MSA Fellowships was conducting research topics associated with mushrooms or other fleshy fungi pertinent to the interests of most NAMA members, that that student be awarded the NAMA Fellowship. Of the top three applications (\$1000 each), Johnson's pertains directly to mushrooms so we have decided to award him the NAMA Fellowship; the other top two applicants will receive the generic MSA Graduate Fellowships. Our fourth place application will be awarded the Backus Award (\$500).

Alexopoulos Prize: Of the two completed files, we have chosen James Francis White, Jr., Rutgers University as this year's recipient of the Alexopoulos Prize.

Distinguished Mycologist Award: We have decided to award the Distinguished

Mycologist Award to both Ian Brent Heath and John W. Rippon.

Chair Desjardin has contacted all Graduate Fellowship recipients and informed them of their being chosen for this prestigious award, and asked that they attend the MSA breakfast where the award will be announced. Standard procedure as dictated by last year's Executive Committee is to give Graduate Fellowship recipients free tickets to the MSA breakfast where the awards will be announced. Because the cost of MSA breakfast tickets is included in the cost of registration this year, upon consent from President Pfister, I informed the Graduate Fellowship recipients that they would receive a free ticket to the MSA Social and Auction instead, where the awards would be announced again. President Pfister and the Awards Committee felt this was a just expenditure of MSA funds in honor of these excellent student researchers. All unsuccessful applicants were encouraged to reapply next year.

President Pfister contacted the successful Alexopoulos Prize recipient and the Distinguished Mycologist recipients and requested that they attend the MSA breakfast to receive their awards. President Pfister will present the Alexopoulos Prize and Distinguished Mycologist Awards at the breakfast, whereas Chair Desjardin will present the Graduate Fellowship Awards and the Best Student Presentation Awards. Desjardin contacted the unsuccessful Alexopoulos Prize nominee and encouraged the candidate to update the file for consideration next year.

At the MSA meetings in Indianapolis, the Awards Committee will initiate a new evaluation procedure approved by the Executive Committee. The Awards Committee will be divided into two subcommittees: A Papers Evaluation Subcommittee and a Posters Evaluation Subcommittee, each with two committee members. Two ad hoc committee members have been selected to aid in evaluating student presentations and one of these will be added to each subcommittee. This brings each subcommittee to three members and reduces the work load on each official committee member to reviewing only papers or only posters at the meeting. For Indianapolis, Kathy LoBuglio and Karen Snetselaar have agreed to serve as ad hoc committee members. Both are past recipients of graduate fellowships or best student presentation awards. Committee member Ellzey will not be able to attend the meetings in Indianapolis, so Don Hemmes was selected to replace her. With

an attempt to have diverse mycological expertise on each subcommittee, the subcommittees were organized as follows: Papers: Desjardin, Hemmes, Snetselaar. Posters: Wubah, Hibbett, LoBuglio.

All MSA Members who sponsor students that may be appropriate for consideration of the Graduate Fellowships are encouraged to have their students apply before the deadline of 1 April 1997.

I would like to thank my fellow members of the awards committee for their efforts in evaluating the files of so many excellent candidates and for reaching a difficult consensus decision. I would like to thank President Pfister and Secretary Kohn for all of their advice concerning the procedures outlined in the Manual of Operations, and I especially thank Rodney Roberts, last year's Committee Chair for reminding me of my duties. [Dennis E. Desjardin, Chair, MSA Awards Committee]

Association Of Systematics Collections

In May ASC met jointly with the 1996 Beltville Symposium. The theme was "Global Genetic Resources: Access, Ownership and Intellectual Property Rights." A principal focus was the free, international distribution of germplasm and scientific information on biodiversity versus the control such distribution. The commodity value of germplasm is one aspect, which is related to bioprospecting contracts. And exclusive property rights, such as patents and copyrights, are another important aspect.

ASC has been funded by the National Biological Service to develop a Taxonomic Resources & Expertise Directory (TRED). Although ASC is seeking data worldwide, emphasis will be on those familiar with North American taxa. A principal purpose of TRED will be for ASC to help governmental agencies assess gaps in taxonomic knowledge and human resource needs and to develop a strategy to fill the gaps.

ASC continues to work with the agencies regulating the importation of flora and fauna, to insure that proposed regulations have considered the aims of collections, and the needs of legitimate biodiversity and monographic studies. [J. Ginns, MSA representative to ASC]

Report on the Distribution of Back Issues of *Mycologia* and the Next Step

The MSA project to distribute back issues of *Mycologia* to thirty institutions throughout the world has been completed. Nineteen countries received these sets including: Bangladesh, Brazil, Cambodia, Costa Rica, Croatia, Goa, Guatemala, India, Indonesia, Laos, Mexico, Pakistan, Paraguay, Peru, People's Republic of China, The Philippines, Thailand, Venezuela, and Viet Nam. The total expense for shipping and mailing from New York to Beltsville to countries throughout the world plus the expense for the complementary sets mailed from Allen Press in Lawrence, Kansas to those same countries was approximately \$10,000 or about \$350 per institution.

Many people deserve special acknowledgment for making this project a success. First and foremost, we thank Sandi Frank at the Publications Office of the New York Botanical Garden, and publisher of *Mycologia*, for donation of the back issues. Dr. Clark Rogerson contributed the seed funds that paid for moving the massive volume of journals from the Bronx, NY to Beltsville, MD where they were organized, inventoried, assembled and mailed. The members of the Systematic Botany and Mycology Laboratory are thanked for donating their time and sweat to moving the heavy boxes, counting the contents, assembling and documenting each set, taping and marking each box, and finally loading the M bags and transporting them to the post office. This was no small task! Rick Howard was instrumental in locating the names and addresses of worthy institutions in countries around the world. Finally, substantial funding for mailing costs was provided by the amateur mycological societies, namely the Asheville Mushroom Club, the Connecticut Mycological Society, the Missouri Mycological Society, the Mid-York Mycological Society, and associated individuals, Peter Stevens, Sam Ristich, and Gene Yetter. Their outpouring of enthusiasm and dedication was inspiring. Finally, as detailed below, the Vancouver Mycological Society is sponsoring gift subscriptions of *Mycologia* to two of the receiving institutions.

The next step in promoting and supporting mycology throughout the world is to match the receiving institutions with sponsors. That way each receiving institution will continue to receive the journal so they can stay abreast of current research in mycology. At present, three institutions

have been adopted, namely Kasetsart University, Kamphaeng Saen Campug, Nakhom Pathom, Thailand, will be sponsored by Emory Simmons and the Vancouver Mycological Society is sponsoring both the Universidad del Valle de Guatemala, Guatemala City, and Dra. Regla Arcohe Alfonso, University Autonoma de Hidalgo, Pachuga, Mexico.

If you or your colleagues would like to provide a current and future year gift subscription to one of these institutions, please send \$60 for the 1996 dues with the name of the institution you wish to sponsor to: Karen Hickey, Mycological Society of America, P.O. Box 1897, Lawrence, KS 66044-8897. You will receive yearly dues notices for that institution. Following are the institutions that are still available and in need of an ongoing subscription.

Dr. P.G. Patwardhan, Agharkar Research Institute, Pune, India

Prof. Dr. S. Q. Iqbal, University of Punjab, Lahore, Pakistan

Prof. Armando Lopez, Universidad de Veracruz, Xalapa, Mexico

Dr. Harry J. Nesbitt, Cambodia-IRRI-Australia Project, Phnom Penh, Cambodia
Director Magda Chanco, Museo de Historia Natural, Lima, Peru

Ms. Li Yu, China National Rice Research Institute, Hangzhou, China

Dr. K. Prasad, Central Rainfed Upland Rice Res. Stn., Bihar, India

Dr. R. Jeyarajan, Tamil Nadu Agricultural University, Coimbatore, India

Dr. R. Edi Soenarjo, Sukarami Research Institute for Food, West Java, Indonesia

Dr. John M. Schiller, Lao-IRRI Project, Vientiana, Laos

Dr. Rodolfo Natividad, Mariano Marcos State University, Ilocos Norte, The Philippines

Dr. Lina L. Ilag, Univeristy of the Philippines at Los Baqos, Laguna, The Philippines

Dr. Dang Duc Tri, Cantho University, Cantho City, Vietnam

Ricardo Valenzuela Garza, Santo Toma's, Mexico

Eilzur Montiel Arcos, University Autonoma del Estado de Morelos, Cuernavaca, Morelos, CP, Mexico

Prof. Franklin Escalona, University del Zulia, Maracaibo, Venezuela

Bogdan Cuijetkovic, University of Zagreb, Zagreb, Croatia

Marcos Sanjurjo, Universidad Nacional de Asuncion, Paraguay

Dr. Dolores Alcober, FARMI, VISCA, Baybay, Leyte, The Philippines

Dr. Kasem Soyong, KMITL, Bangkok, Thailand

Dr. M. Mamunur Rashid, Bangladesh Rice Research Institute, Gazipur, Bangladesh

[Amy Y. Rossman, Director U.S. National Fungus Collections]

Report of the MSA Ecology Committee, 1995–1996

The committee was not called upon to act in any advisory capacity this year. I am pleased to report that the committee is emerging from dormancy in its function in education and interdisciplinary relations. We have begun planning a symposium for the 1997 MSA meeting in Montreal on the ecology of indoor fungi and possible ensuing health problems. Other projects include a survey of potential funding sources for research in fungal ecology and a journal survey to determine which journals are publishing in this area. I wish to thank my committee members, Paul Widden and Keith Clay. [Maren A. Klich]

Report of the MSA Endowment Committee 1995–1996

A total of \$23,710.96 was raised by the endowment committee between July 1 1995 and June 30, 1996. This includes funds raised through the auction and T-shirt sales from the 1995 annual meeting and contributions to the named funds within the MSA endowment Auction and T-shirt sales from the 1995 annual meeting totaled \$6,388.00. Donations to Mentor Travel funds for the past year totaled \$8875.00, combined donations to Research Award funds was \$8,347.96, and an additional \$400 was donated to the uncommitted endowment for various purposes. Including the uncommitted endowment, the balances of the named funds now stands at approximately \$131,545 exclusive of interest income. Balances of the named funds as of June 30 1996 are:

Mentor Travel Funds

Alexopoulos (\$2,800.00), Barksdale-Raper (\$3,295.11), Bigelow (\$6,750.00), Butler (\$2,564.28), Denison (\$5,575.00), Fitzpatrick (\$3,525.00), Fuller (\$600.00), Korf (\$3,109.05), Luttrell (\$1,850.00), Thiers (\$2,095.00), Uecker (\$2,175.00), Wells (\$1,800.00).

Graduate Research Funds

M. P. Backus Fund (\$9,800.00).

Senior Research Funds

Martin/Baker (\$23,467.89), A. and H. Smith (\$23,921.62).

Special Prize Funds

Alexopoulos Prize (\$8,999.83).

Uncommitted Funds

Uncommitted (\$29,217.95—includes 1995–96 auction and T-shirt sales of \$6388.00)

Total Endowment Funds = \$131,245.73

The endowment committee will again organize several fundraising activities at the 1996 annual meeting in Indianapolis. As usual, an auction fund-raiser and T-shirt sales will be held. In honor of the annual meeting venue, a fungus race has been organized by David Malloch and Meredith Blackwell. At the 1995 annual meeting a mycological photo show and auction organized by Don Hemmes and Fred Speigel was very successful and will be repeated at the 1996 annual meeting. Eleven graduate travel awards of \$150 will be made (two awards represent combined mentor travel funds that are below the \$3000 target for an individual award). An Alexopoulos Award, a Smith Award, a Martin/Baker award, and a Backus graduate fellowship will also be announced at the annual meeting.

Over the past year the endowment fund has continued the very encouraging trend of growth established during the past four years. The Martin Baker and Smith funds both now exceed their \$20,000 target levels. Donations to the Smith Fund during the past year included a generous bequest from the estate of Helen V. Smith. A new Mentor Travel Fund was established in 1996 to honor Dr. H. M. Fitzpatrick, bringing the number of named Mentor Travel funds to twelve. The generous contributions of Dr. C. T. Rogerson and Dr. R. P. Korf to establish this fund are particularly acknowledged. The Mentor Travel Award Funds have benefited from very strong support of MSA members. This program is indeed making a difference in the attendance and participation at annual meetings by graduate students. As these funds continue to grow it is hoped that it will be possible to increase the amount of the cash award to a more substantial amount.

The endowment committee is exploring some new options for fundraising for the coming years. Some possibilities under consideration are production of an MSA calendar and post cards or note cards with mycological themes using original illus-

trations contributed by MSA members.

The current financial strength of the endowment, however, comes primarily from the generosity and commitment of MSA members who believe in the aims of the endowment in furthering our discipline. The contributions from the many members who have made cash donations to the various endowment funds during the past year are very warmly appreciated. Many members have been equally generous in providing items for sale at the annual auction. The auction owes its success as a consistently effective fund-raiser and annual MSA social event to the continuing generous donations and unrestrained, profligate bidding by MSA members. The hard work of endowment committee member Meredith Blackwell to ensure the success of this venture, as well as organizing the production and sale of T-shirts is gratefully acknowledged. We hope to continue the strong growth of the endowment and to increase the ability of the society to recognize and reward excellence in mycological research in the coming years. [Jeffrey K. Stone, Chair]

Finance Committee Report: Investment Portfolio for the Society

The Endowment Portfolio of the Mycological Society of America currently has an estimated value of \$145,493.99. It consists of \$99,586.60 in U.S. Treasury Bills, \$19,933.20 in the INCO mutual fund and \$26,074.19 in Money Market Funds [CRG].

There are substantial non-endowment funds which are in low yielding bank accounts or in CDs. Dr. Richard Howard, Treasurer MSA, Dr. Orson Miller Jr. Chair of the Finance Committee discussed the alternate investment of a portion of these funds with Mr. Richard Bohlin, Office Manager, Wheat First, Butcher, Singer. The direction and strategy for the investment of the additional non-endowment funds for the Mycological Society of America is detailed below. It was decided to retain the additional funds in the same portfolio for convenience. The Treasurer, Dr. Howard, will keep the records for the individual funds and accounts. This approach enables a smooth and financially advantageous approach to the investment of the funds for the greatest return.

The strategy, agreed upon, for the non-endowment funds, agreed upon, is to invest \$125,000 in five \$25,000 federal notes that will form a second ladder parallel to the one for Endowment Funds. An

auction for 2-year notes on the 25th of June and 5 year notes on the 26th of June will fill two rungs of the ladder. A 3-year \$25,000 note will be purchased during the auction, not yet announced, in late August. A 1-year note can be purchased any time. A 4-year note will have to be purchased on the open market since the Federal Government does not offer 4-year notes for sale. The auction is the best approach when available because of a more favorable interest rate and a lower commission per purchase. The fee for the purchase of each note in the auction is \$50.00.

A second investment will be the purchase of \$30,000 in shares of INCO (Investment Company of America) which will bring our total purchases in this fund to \$50,000. This will represent about 18% of the portfolio in a higher returning mutual fund that specializes in conservative stocks and bonds and historically averages over 14% return per year. It also brings our total investment to \$50,000 level which lowers the commission from over 5.75 to 4.5%. This is, by the way, the only funds subject to a commission in the MSA portfolio.

The total investment from the operating funds will be \$155,000 and will leave ample funds to enable the Society to carry out the necessary business. In addition, every year Federal notes from both the Endowment Funds and Operating Funds in the amount of \$45,000 will be available for reinvestment in the manner prescribed and approved by the executive committee of the Society. This will normally be done in communication with the investment advisor, Treasurer and the Finance Chair. It is anticipated at this time that additional Federal Notes would be purchased each year to keep the ladder in place. [Orson K. Miller Jr., Chair Finance Committee]

Annual Report: Honorary Membership Committee

The MSA Committee to recommend persons for Honorary Membership in the Mycological Society of America considered three nominees from members. Professor Junta Sugiyama of the University of Tokyo and Professor Anthony P. J. Trinci of the University of Manchester were recommended to Council for Honorary Membership. [Melvin S. Fuller, Chair]

Report of *Inoculum* Editor

Inoculum continues to be published six times a year and mailed with *Mycologia*. The abstracts for the 1996 Annual Meeting were published in *Inoculum* 47(3) and posted on the Smithsonian's Natural History Gopher Server. The MSA Home Page makes a link to the Abstracts and to issues of *Inoculum*.

Inoculum needs more input from members. In addition to news of meetings and events and material for the "Classifieds," I need brief articles, notes on techniques, brief reviews of books that might be too general for review in *Mycologia*. Beginning with *Inoculum* 47(4), I am experimenting with an electronic *Inoculum* questionnaire distributed to members with e-mail addresses. [Ellen Farr]

Report of the Ad Hoc International Committee

Since the inception of the Mycological Society of America (MSA) in 1931, many of its members have been involved in mycological activities on an international scale. It is rather ironic, therefore, that MSA itself has had little international involvement, with the notable exception of hosting the Second IMC and the more recent participation in IMA and IUBS. Inasmuch as more than one-third of the members of MSA reside outside the U.S., it is important that these members have the same access to Council and Society activities as those who reside within our borders. More importantly, the professional activities of mycologists are inherently global in nature, and it is appropriate that the Society develop programs that assist and encourage these activities. It is especially important to lend assistance and encouragement to mycologists working in areas with limited facilities, through cooperative programs and other means. It is with these goals in mind that the Ad Hoc Committee makes the following recommendations for consideration by Council.

- The Committee strongly supports a more active and expanded role for MSA in international mycological activities. Some possible activities suggested are the establishment and maintenance of contacts with mycological societies in other countries, especially in areas with developing programs, such as Latin America; participation in joint collecting expeditions with other societies; development of a fund to assist international members in attending MSA meetings; improved communications with members in other countries; and to

develop opportunities for graduate student exchange.

- Establish a permanent International Committee. This should be a standing committee with three year terms. The primary function of this committee would be to coordinate the international activities of the Society. It would also serve as a liaison between the Society and members in other countries.

Other suggested activities of the Committee are to serve as a clearing house for journal exchange; to develop a file of members interested in presenting mycological short courses; and make MSA members aware of pertinent international activities, perhaps through a column in *Inoculum* and a place of the MSA Web Page.

The Ad Hoc Committee views the establishment of a permanent International Committee as essential to developing an increased role and presence for MSA in international mycology. Once accomplished, the Committee will provide a mechanism for further development.

[MSA International Committee: Richard T. Hanlin (Chair), Joseph Ammirati, Teresa Iturriaga, Linda M. Kohn, D. Jean Lodge, Orlando Petrini]

Statement Of Support

As practicing biologists, members of MSA have a professional interest in protecting and studying the biota of the tropical American rain forests. In particular, as mycologists we encourage local mycologists to undertake investigations of neotropical fungi and to make the results of their studies available to the scientific community. In this regard, the Council of MSA expresses its strong support for the recently formed Asociacion

Latinamericana de Micologia (ALM), which provides a mechanism for information exchange and the organization of scientific meetings of mycologists interested in the American tropics. The Council also expresses its concern over the present conditions that preclude participation of members of MSA in ALM activities and which hinder free interchange of scientists and of scientific information.

IMA Report

IMA (International Mycological Association) has engaged in a number of activities over the period of August 1995–July 1996. These include the following:

1. An IMA World Wide Web site has been established to keep the large and loosely organized membership informed of its activities. The site can be accessed at <<http://lsb380.plbio.lsu.edu/ima/index.html>>. The IMC 6 program as well as programs for several other meetings to be held under the auspices of IMA will be posted at this site.

2. Plans progress for the Sixth International Mycological Congress to be held 23–28 August 1998 in Jerusalem. The MSA has been alerted to the fact that now is the time to undertake proposals to defray member travel expenses.

3. The MSA electronic bulletin board and *Inoculum* were used on a number of occasions to post information of interest to members.

4. Two awards were initiated and awarded in 1996 by the IMA Executive Committee. The inaugural presentation of the medals was made on the occasion of the Centenary of the British Mycological Society to recognize the unique contribution that British mycologists have made to their science.

The Ainsworth Medal rewards service to world mycology. In addition it commemorates Dr. Geoffrey C. Ainsworth, who first conceived the idea of an international association to foster cooperation in mycological research and education throughout the world and who was instrumental in the organization of the first International Mycological Congress in 1971. This medal was presented to Prof. John Webster, who organized IMC 1 and served as Secretary-General and President of IMA in its formative years.

The medal for lifetime research achievements is named after Anton de Bary, who not only began a modern era in fungal research, but also was responsible for training students from throughout the world who disseminated the knowledge broadly. Prof. E. J. H. Corner, student of tropical botany and wood-decaying basidiomycetes, and Prof. C. T. Ingold, known especially for his work on aquatic hyphomycetes and spore dispersal were co-recipients.

The original design of the medals depicts a germ tube emerging from and encircling a reticulate spore and terminating in the production of asexual spores. The spore shape and ornamentation was chosen because it is a common form found in many groups of organisms studied by mycologists. On a different level it may be seen to symbolize mycological knowledge encircling the earth, poised for dissemina-

tion. The design, crafted in silver, overlays an engraved bronze base. The design is the basis of an emblem that will be used to represent IMA.

5. MSA members who serve IMA in an official capacity are the following: M. Blackwell, Secretary-General, C. P. Kurtzman, Vice President, and R. H. Petersen and A. J. S. Whalley, Executive Committee members. Honorary MSA members G. C. Ingold, D. L. Hawksworth, and C. T. Ingold are Honorary Presidents of IMA. [Meredith Blackwell]

Report of the MSA Representative to the U.S. National Committee for the International Union of Microbiological Sciences

The U.S. National Committee met in Washington, DC on April 9, 1996. Under the leadership of Anne Vidaver, the agenda included discussion of the proposed IUMS Congresses and a potential U.S. bid for the meeting in 2005. Efforts will be made to avoid any conflict with the International Mycological Congresses sponsored by the International Mycological Association. The need to include microorganisms in studies of biodiversity was discussed and Dr. Rita Colwell is working to ensure that they are included in the international program *Diversitas*. The U.S. National Committee will attempt to increase communication within the United States about activities and program that exist at the international level through which opportunities for funding and research may develop. The new Chairman is the MSA's own Cletus Kurtzman. [Amy Y. Rossman]

Report of the Nominations Committee

The committee nominated candidates for the following positions: Vice President; Councilor Ecology/Pathology; Councilor Cell Biology/Physiology; Councilor Genetics/Molecular Biology; and Councilor Systematics/Evolution. The nomination process consisted of two rounds of correspondence. First, the committee was asked to suggest one or two candidates for each position. In the second round the committee was asked to rank the candidates; the Chair voted only to break ties which occurred for the first place in one position and third in another. First, second and third choices for each position were forwarded to the current Vice President. [Donald J.S. Barr, Chair.]

MSA Teaching Committee Annual Report

The Teaching Committee evaluated three candidates for the William H. Weston Award for Teaching Excellence in Mycology. Dr. James W. Kimbrough and Dr. Michael R. Tansey have been selected as this year's recipients. The awards will be presented at the APS/MSA meeting at Indianapolis, Indiana.

The Teaching Committee continues to maintain the teaching slide collection. Two requests for a total of 119 slides were processed. The requests were filled utilizing media services at Eastern Illinois University. A change in policy at media services, and the lack of a reliable replacement vendor to copy slides, meant that several orders were unable to be filled. The new chair of the MSA Teaching Committee, Dr. Karen Snetselaar, should be able to fill

past and future orders without the kinds of problems encountered this year. The committee chair apologizes for the difficulties encountered and the inability to meet these requests.

We received six requests for the Careers in Mycology poster. We have five copies left. The committee is considering whether or not to modify the existing poster before printing additional copies of the poster to meet future needs.

We received no requests for the hard copy form of the Mycology Test Bank. The committee continues to discuss reorganization of the test bank and the possibility of posting an electronic version of the test bank.

The committee is proceeding with plans to ensure that mycology is included in K-12 educational curricula. Drs. Ed Braun and Karen Snetselaar are excited about the possibilities and hope to discuss this topic in a joint meeting with the APS Teaching Committee at Indianapolis.

The Teaching Committee would be happy to forward copies of the Mycology Teaching Manual to those interested in submitting or revising materials in the manual. Dr. John Clausz continues to direct the publication of the teaching manual with a publication date of 1 year from this summer.

The MSA Teaching Committee will meet with the APS Teaching Committee on Saturday, July 27 in Indianapolis to discuss issues of mutual interest and concern. [Andrew S. Methven, Chair, MSA Teaching Committee]

Mycology Online

MSA Online

Visit the MSA Home Page at <<http://www.erin.utoronto.ca/soc/msa/>>. Members can use the links from MSA Home Page to access MSA resources maintained on other servers. Additionally, Gopher client software can still access the MSA Bulletin Board <gopher://huh.harvard.edu/1m/project_information/msa-bbs> or back issues of *Inoculum* <<gopher://nmnhgoph.si.edu/11/>>.

<botany.mycology.inoculum> directly. Announcements are posted to the MSA Bulletin Board by submitting news as an e-mail message to <msa-news@huh.harvard.edu>.

An Electronic Journal: Molecular Plant Pathology Online

The British Society for Plant Pathology (BSPP) has developed an exciting new way to publish research in mo-

lecular plant pathology and nematology—the electronic journal *Molecular Plant Pathology On-Line* (MPPOL). MPPOL is:

- Peer-reviewed—through BSPP
- Fast—saving the months normally taken to print, bind and distribute on paper
- Accessible—at the desk or bench, straight from the Internet
- Convenient—search, browse, view, print or download, any time

• Free—BSPP bears the modest costs, as a service to international plant pathology

• Versatile—colour illustrations are encouraged; movies and sound bites are welcome.

For additional information visit the MPPOL Web site at

<<http://www.bspp.org.uk/mppol>>.

Contact: Dr Debra Whitehead, MPPOL, The Royal Horticultural Society's Garden, Wisley, Woking, Surrey GU23 6QB, UK or send an e-mail message to <cc08@dial.pipex.com>.

Rhizoctonia Newsletter Online

The *Rhizoctonia* Subject Matter Committee of the International Society for Plant Pathology is pleased to announce that the first issue of the *Rhizoctonia Newsletter* was published in late June. If you would like to receive a copy of subsequent issues of this newsletter, please send your e-mail address to: <mkulik@asrr.arsusda.gov>. [Martin M. Kulik, Editor *Rhizoctonia Newsletter*]

Web Site for Zoosporic Fungi

Since April, Mel Fuller and Joyce Longcore have been editing a web site entitled: "Zoosporic Fungi on Line." The URL is <<http://zoosporic-fungi.dmc.maine.edu>>. These pages replace an earlier newsletter on the aquatic fungi that was most recently

edited by Dr. Ruth Harold at Colorado State University. Although we have both been rather busy this summer isolating fungi and practicing retirement, we will devote a lot more time to these pages by the time you are teaching mycology. We want, in addition to our function as a newsletter for those already working with zoospore-producing fungi, to develop pages to which those of you teaching mycology will be able to refer to and direct entering mycology students. Hopefully, they will find useful and interesting information on the biology of these fungi that will stimulate some of them to undertake research using zoosporic fungi. Our success with these pages depend upon your sending us items of interest and telling us what you would find most useful in your teaching and research. [Mel Fuller]

Correction for *ING*

Ooops! When I announced that the *ING* (*Index Nominum Genericorum*) was available online (*Inoculum* 47(3): 2) I made an error in the URL. The correct address for the Web site is <<http://www.nmnh.si.edu/ing/>>. [Ellen Farr]

URLs Briefly Noted

<<http://www.nybg.org/bsci/hcol/fung/fung.html>>

The first installment of New York Botanical Garden catalog of macrofungi is available at the NYBG web

site. We are in the process of cataloging the specimens of macrofungi and we intend to make these records available family by family, as cataloging is completed. Currently, the following families are available: Amanitaceae (3198 records) and Boletaceae (6707 records). [Roy Halling]

<<http://phylogeny.arizona.edu/tree/eukaryotes/fungi/fungi.html>>

Check out new entry in Tree of Life. [Meredith Blackwell]

<<http://www.wvonline.com/myxo>>

"The Internet Guide to Myxomycetes." Although some parts of the site are still under construction, there is a lot of information and images that would be of interest to mycologists. [Denise E. Binion]

<<http://herb.biol.uregina.ca/herb/>>

Home Page for The G.F. Ledingham Herbarium (USAS) at University of Regina. Dr. G.F. Ledingham established the Herbarium in 1945. Since then, he has devoted a good portion of his lifetime in expanding the collections of the Herbarium, both while he was a full-time faculty member and during his nearly twenty years of retirement. The Herbarium has over 50,000 vascular plant specimens, 10,000 bryophyte specimens, and 10,000 specimens of lichens. [Shunguo Liu]

Mycological News

U.S. National Fungus Collections Completes Computerization of Ascomycete Specimen Data

The U.S. National Fungus Collections is pleased to announce that they have completed the computerization of data associated with the 154,000 specimens of Ascomycetes. With this major

group, the number of specimens for which the data has been computerized has reached 625,000. These includes all of the following major groups of fungi: Uredinales (168,000), Ustilaginales (30,000), Polypores (104,000), Deuteromycetes (114,000), Ascomycetes (154,000) and the C.G. Lloyd Herbarium (54,000). One group of miscellaneous basidiomycetes including the Gasteromycetes and jelly fungi

will be entered in the next year as well as selected sets of exsiccata. All data are accessible through the web site at <<http://nt.ars-grin.gov>> and herbarium specimens can be requested by sending an e-mail message to <herbarium@nt.ars-grin.gov>. [Amy Y. Rossmann, Director U.S. National Fungus Collections]

New Mailbox: ARSEF Culture Collection

I am pleased to announce the establishment of a new electronic mailbox for the USDA-ARS Collection of Entomopathogenic Fungal Cultures (ARSEF): arsef@cornell.edu.

It is intended that this new mailbox be used for direct inquiries about ARSEF cultures, to request shipments of ARSEF cultures, or for other official correspondence with collection staff. Requests for information or cultures, and other correspondence can also continue to be sent to me at my personal email box: [<rah3@cornell.edu>](mailto:rah3@cornell.edu).

Fax communications to me, to the ARSEF collection, or to any of the collection staff should be sent to the new Fax number, 607-255-1132. The technician in charge of maintaining the collection can be reached by phone at 607-255-1274. [Richard A. Huber]

Myxomycetes on Video

If you missed the late night myxomycete film festival at the 1995 NAMA Foray at Bemidji, Minnesota last year, you now have another chance to see these classic movies. The series of three color films have been transferred to videotape. Prepared by James Koevenig in 1961 at the University of Iowa under the direction of C.J. Alexopoulos, G.W. Martin, and T.R. Porter, the films illustrate the life cycle, identification, collection and cultivation of slime molds. Dr. Koevenig retired this year from the Department of Biology at the University of Central Florida in Orlando, and his pioneering film project has been saved for posterity.

The videotape has a running time of approximately 65 minutes. The life cycle of Myxomycetes is revealed by normal speed and time-lapse photomicroscopy; animation is used to point out the details of their reproduction and classification. The techniques of collecting are captured in a special sequence by Professor George W.

Martin turning over a moldy log and cutting the bark off American elm trees. These American elm trees once lined the street in front of the Chemistry/Botany building at the University of Iowa in the 1960s but have been cut down because of Dutch elm disease. The identification of Myxomycetes is illustrated by comparing a dichotomous key to a branching road map leading to the main families of Myxomycetes. Also described are projects suitable for high school or college biology classrooms, involving the culture of slime molds and suggested experiments that may be performed.

A brief description of each film will introduce the viewer to the fascinating world of Myxomycetes.

Slime Molds I: Life Cycle, approximately 30 minutes, sound, color. The complex life cycle of one myxomycete is revealed in detail by a combination of high and low magnification, phase contrast, dark field, bright field, normal speed, and time-lapse cinematography. Form is related to function. Unsolved problems are posed for further research. Similarities and differences in the life cycle of different species are discussed.

Slime Molds II: Collection, Cultivation And Use, approximately 19 minutes, sound, color. Techniques used in the collection, cultivation, and use of the Myxomycetes are presented by taking the viewer into the field and laboratory.

Slime Molds III: Identification, 24 minutes, sound, color. The use of a taxonomic key is illustrated by comparing a modified portion of Professor G. W. Martin's key to a road map. Each road is followed until the main families of Myxomycetes are identified. Representative genera and species are shown through a variety of photographic techniques. The reasons for identification, keys, terminology, and scientific names are given.

This video illustrates many important biological principles and ideas. Some of these are as follows: 1. Life is asso-

ciated with protoplasm which is characterized by metabolism, reproduction and responsiveness; myxamoebae, swarm cells, and plasmodium illustrate these activities of life, Film I; 2. Mitosis results in two genetically similar nuclei and meiosis reduces the number of chromosomes and segregates genetic characters, Film I; 3. fusion of myxamoebae and swarm cells, and meiosis in the fruiting process, Film I; 4. feeding by engulfment of myxamoebae by plasmodia, Film I; 5. myxamoebae avoiding particles, Film I; 6. adaptation is the ability of the organism to change in response to its environment illustrated by encystment and sclerotium formation, Film I; 7. Diversity of organisms due to evolution Similarities and differences are used to distinguish among related groups, A system of classification is recognized, comparison of a classification system to political divisions, Film III; 8. Scientific research on specific areas often has broader applications with a review of research on the Myxomycetes, Film II. By Dean Abel and Harold W. Keller, co-editor, the Mycophile. These video tapes are available from: Marilyn Shaw, NAMA Education Chair, 510 Dexter Street, Denver, Colorado 80220-5036. Telephone number (303)377-1278. The costs of the video is \$29.95 plus shipping and handling charges of \$5.00. [Harold Keller]

News of Mycologists

Steve Bentivenga has accepted the Mycology position at the University of Wisconsin Oshkosh. He will be joining the faculty in August and his new address will be: Department of Biology & Microbiology, University of Wisconsin Oshkosh, 800 Algoma Blvd., Oshkosh, WI 54901-8661.

Gerald Bills was promoted to Senior Research Fellow in the department of Natural Products Drug Discovery, Merck Research Laboratories, effective June 1, 1996.

Alice W. Chen will present three papers at the 1996 Taipei International Ganoderma Research Conference, August 14–15: 1.) Cultivation of *Ganoderma lucidum* in North America, 2.) Reproductive structures in *Ganoderma lucidum*: Habitat characterization of basidiocarps and microconidia formation, and 3.) Extensive Ecological surveys of a Long-spored *Ganoderma* Species in North America She was awarded a traveling grant by Unicorn Import and Manufacturing Corp. of Water Valley, MS.

At the 2nd International Conference on Mushroom Biology and Mushroom products at Pennsylvania State University (June 9–12), Dr. Chen delivered two papers on *Ganoderma* (Biomedical research and Application and Bonsai cultivation). Dr. Chen's work on *Ganoderma lucidum* and related species (biomedical importance, cultivation and marketing) will be published in book form.

From **Michelle Momany**: I'm now an assistant professor in the Botany Department at the University of Georgia in Athens. I'm having a great time getting acquainted with the many mycologists on campus, setting up my lab, and getting my research program going. My group will use molecular genetic approaches to investigate the cell wall network in *Aspergillus nidulans* and *A. fumigatus*. <momany@dogwood.botany.uga.edu>.

Frances Trail has been hired as the mycologist for Michigan State University's Department of Botany and Plant Pathology. This mycology position has been historically linked to Edward Cantino an experimental mycologist who helped establish the journal, *Experimental Mycology*.

Frances Trail is currently an assistant professor in the Department of Botany at the University of Wyoming

and teaches the introductory genetics course. She began her journey in mycology as an undergraduate in Lindsay Olive's course and completed an undergraduate thesis project on the effects of V-A mycorrhizae on the growth of *Sporobolus* in a pine savanna in North Carolina. Her masters degree was with Dallice Mills with whom she explored the genetics of interspecific hybrid crosses and heterokaryosis among species of *Tilletia*. Frances then worked in industry on genetic manipulations of cytoplasmically encoded traits in an *Agrobacterium/Brassica* system. Her PhD was from Cornell where she completed research, with Wolfram Koller, on fungal cutinases and pathogenicity. Also she obtained mycology education at Cornell under the tutelage of Richard Korf. Her postdoctoral research in John Linz's lab focused on the identification, characterization and regulation of genes encoded in aflatoxin biosynthesis. Currently she is exploring the regulation of aflatoxin biosynthesis and its relationship to pathogenicity with the goal of understanding the differentiation that distinguishes saprophytic from parasitic growth.

The Department of Botany and Plant Pathology at Michigan State University wishes to warmly welcome Professor Trail into its faculty.

From **Chris Walker (UK)**: I will be taking early retirement from the Forestry Commission, starting on 17 July, due to the closure of all work on mycorrhizas. I have an extensive collection of living endomycorrhizal fungi (more than 280 isolates). Some of these may be taken over by IMI. A few will go to the University of York. Probably the bulk will be discarded. The fate of unfunded germ plasm collections today? Despite protestations about the need for preservation of

germ plasm and for work on biodiversity, funding for such work in UK is, to say the least, elusive. I hope to carry on a little with my work on taxonomy of arbuscular mycorrhizal fungi as a consultant.

News for Biologists

NSF Education Leadership Program Planned

NSF has announced a new Leadership for the Integration of Research and Education (LIRE) program. It will focus on the recognition of universities with significant research capabilities that have shown "bold leadership, exceptional innovation, and tangible accomplishments in linking research and education." The program will total about \$5 million, and will be supported by NSF's Opportunity Fund in FY 1997. This program may be of interest to ASC members who have strong programs connecting their research with their education programs (both formal and informal). While the program may have been constructed more with formal education in mind, ASC will be talking to NSF about the importance of linking research to informal as well as formal education.

At a recent Congressional hearing on the NSF budget, Jerry Lewis (R-CA), Chair of the House Appropriations Subcommittee on VA/HUD (which handles NSF funding) and Rep. Sherwood Boehlert (R-NY) both applauded NSF's attempt to integrate research and education. Lewis also applauded Dr. Lane, NSF Director, for his recent statements urging the scientific community to increase its outreach to the public. [contributed by Amy Y. Rossman, MSA Representative to Association of Systematic Collections]]

New Ideas and Techniques

Myxomycetes: Some Tools and Tips On Collection, Care, And Use Of Specimens

by

Walter J. Sundberg

Southern Illinois University
at Carbondale

and

Harold W. Keller

University of North Texas
Health Science Center

To encourage others to share some of their research and/or teaching techniques with colleagues via *Inoculum*, we offer the following comments on some easy-to-make tools, techniques, and procedures that we have found useful in working with Myxomycetes in teaching laboratory exercises and in research. We wish to thank our mentors, colleagues, and students for sharing, suggesting, and/or testing the procedures summarized below.

Several excellent references describing techniques for handling Myxomycetes are currently available (e.g., Stevens 1974, Martin and Alexopoulos 1969, Farr 1981, Stephenson and Stempen 1994). Our notes below, where possible, are intended to augment this information.

A. Useful Tools

A number of useful tools can be easily made in the laboratory with inexpensive materials. When making any of these items, *always wear protective safety goggles*.

Fine dissecting needles: Using sewing needles, dissecting tools of varying strength and fineness (determined by the size and quality of the needle used) can be made. To prepare: Trim off the eyelet end of a sewing needle. Sharpen the tip of needle point with a hone. Cut small wooden dowels 5–10 cm in length and drill a very narrow hole in

the end of each. Apply epoxy resin to the dowel hole and end of the needle. Insert the cut end of needle into hole in the dowel. By cutting the needle at different lengths, one can control the length of the dissecting implement.

Flattened dissecting and lifting tool:

This tool works nicely for cutting out single spores on agar surfaces, cutting veins or portions of plasmodia, or manipulating myxomycete fruiting bodies. To prepare: Trim sewing needles or #1 insect pins at the end opposite the point (cut off heel or eyelet) with a wire cutter. Hold the needle point at an angle on a heavy metal plate or anvil and “hit” or “smash” the end of the needle with a hammer. One can modify the orientation of the needle tip to obtain the desired type of tool. The bent tip can be hammered flat for cutting on one edge and for lifting small objects (fruiting bodies or chunks of agar). Smooth off and/or sharpen with hone, as necessary. To make a handle, break off the striking end of a long handled wooden match stick and tailor the length to individual preference (several inches). Insert the blunt (cut) end of the needle into the end of a match stick. Be careful because the wood splits easily. Make a number of these at one time in the event they get broken, damaged, burned up during flame sterilization, or “borrowed”.

Dissecting micro-knives: Specimen manipulation and preparation can sometimes be enhanced by the use of very small and sharp knives. These can be prepared inexpensively and readily from razor blade chips and applicator sticks as outlined below. They are autoclavable and, if properly cared for, can be used repeatedly. To prepare: Using pliers, break the blade and nearby portion of an intact single

edge razor blade into small pieces or chips. If the blades come individually wrapped, break them while they are still in their wrapper as an added safety precaution. To make handles, cut applicator sticks to a comfortable length. Prepare a chip slot by cutting a small linear slit (split) a short distance into one end of the round applicator stick. Mix and apply epoxy glue to the slot area (12–24 hr drying epoxy time gives maximum working time during knife preparation). Insert a piece (or chip) of razor blade. Position the blade so that the angle between the handle and the cutting edge of the blade will be appropriate for intended use. Add more epoxy as necessary. Let harden overnight on a piece of cardboard (paper plate, etc.) to catch any epoxy that drips or flows off of the handle before setting.

A hand-held small air stream

blower (microblower): A microblower can be used to gently clean debris and/or remove loose materials from very small areas (e.g., spores from sporangia). To prepare: Cut 4 mm rubber tubing into 20–25 cm lengths. Use a Bunsen burner to heat a section of 4 mm glass tubing, remove from the flame after the glass is red hot and flexible, and pull quickly into a thin, capillary-like end. Let cool, then carefully score with a triangular file and snap apart. Be careful not to shatter or break the end of the glass tube unevenly. Score the other end with a triangular file so that each section of glass tubing is approximately 5–8 cm in length. Fire the ends of the glass tubing to eliminate roughness. Insert the broad end of the tapered glass section into one end of the rubber tubing. Make and fire another glass section approximately 5 cm in length with round untapered ends and

insert in the other end of the rubber tubing for use as a mouth piece. For ease of access, a large loop of shoelace can be tied to the tubing near the mouthpiece end so that it can be hung around one's neck while working.

Tool sterilization for field use: All of the above tools (and others), which can easily be made up in large numbers, can be conveniently wrapped and pre-sterilized (if necessary) and kept ready for field and/or laboratory use by placing them in small sections of disposable pipette bags and autoclaving. To prepare: Cut a disposable glassine pipette bag (diSPo Pipet Wrap, VWR #34010-530) into two to three short lengths dependent on tool length. For each piece, fold about 5 mm of one end over; repeat two more times, then staple once through folds to hold in place and keep closed. Insert tool(s) in the still open end and then close by folding and stapling as before. Place one to three such bags into a small paper bag; flatten the bag, fold the end over about 2 cm, repeat 2–3 more times, keep it closed with autoclave tape or staple as before, and autoclave. Tools thus prepared can be used without the need of an alcohol lamp or other sterilizing heat source. Save, gently clean, rebag, and sterilize the tools again for repeated use.

B. On Collection and Care Of Specimens

There is no one single best way to collect Myxomycetes. There are advantages and disadvantages of different collection and storage methods that must be considered in advance based on the collector's intended use(s).

What to collect: For species identification, collect only completely mature fruiting bodies that are in good condition. Avoid those that are badly weathered, moldy, or insect-damaged. It is tempting to collect the premature brightly colored fruiting bodies, but in virtually every case these undergo

premature drying, becoming aberrant, hardened, and unidentifiable.

Using boxes—specimen care, transport, storage, and use: Many workers glue specimens to storage box tops or bottoms at the time of collection in the field. Avoid gluing wet wood, bark, or decaying leaves with specimens to the box-top unless the box is left upside down and stationary in the sun long enough for the glue to set. Specimens glued when still on wet substrata are often subject to severe damage in transit. When specimens are glued to the box top in the field, be sure to carry the box upside down to assure maintaining proper orientation of the specimen while the glue is soft and to prevent dislodging the specimen as it dries out. When the label (taxonomic data, collection information, etc.) is affixed to the box top, the specimen and label become inseparable and the chances of error due to switching label and specimen are eliminated. As an added precaution, record the collection or herbarium number on all pieces of the specimen box—top, bottom, and, when used, the card stock insert (see below). When specimens are glued to the top of the box, any movement during transport, filing, storage, or subsequent use may cause some materials (e.g., loose bits of sporangial wall, spores, and perhaps some capillitium) to fall out of the fruiting body. This can result in substantial disruption of fragile sporangia of certain species. However, the resulting debris can sometimes be used to advantage for obtaining spore samples or free capillitium to make microscope slide mounts instead of dissecting intact fruiting bodies.

Collecting boxes of uniform size and depth are most desirable. The National Fungus Collection (BPI) uses a standard size box of $4\frac{1}{2} \times 10\frac{1}{2} \times 2$ cm ($1\frac{3}{4} \times 4 \times \frac{7}{8}$ inches) or, for larger material, $10 \times 9\frac{1}{4} \times 2$ cm (Martin and Alexopoulos 1969). These boxes have a fairly shallow lid which facilitates general examination of the

specimen with a hand lens or dissecting microscope. However, for thick pieces of bark, deeper boxes may be necessary to protect and accommodate larger specimens. Boxes are sometimes a disadvantage when intact specimens are used for detailed morphological study and/or close-up photography with the dissecting microscope. The sides of the box and the glued and fixed position of the specimen may make it difficult to orient the specimen for the most effective viewing angle and depth of field for the best photographic image. Alternatively, the specimen can be glued to a piece of stiff paper, such as an index card or heavy herbarium paper stock, with the ends bent up and fitted snugly inside the box (for illustration see Stevenson and Stempen 1994). The bent ends enhance removal, handling, and replacement of the card, and, if of the proper length, they prevent accidental vertical movement of the card within the box. Professor George W. Martin, at the University of Iowa, used small wooden match boxes fitted with strips of stiff paper as his "loan" collection of identified specimens that he sent to "beginners" to help them learn to recognize common species of Myxomycetes. This strip of paper with affixed specimen can be carefully removed and oriented in such a way as to improve the number of fruiting bodies in the plane of focus for study and close-up photography. Although the use of card stock overcomes potential viewing problems presented by box structure, because the card stock is inherently more flexible than the box top or bottom, one must be careful not to accidentally dislodge glued specimens during handling.

C. Microscopic Examination

Some Myxomycetes can be identified to species on sight by the experienced myxomycologist. Most species, however, must be examined with a compound microscope to resolve taxonomic features employed in positive identification.

Pre-mount preparation: In preparing glass slide mounts, details of internal structural parts of sporangia may best be revealed by carefully selecting wind-blown sporangia nearly void of spores or alternatively blowing spores free of the spore case. There are several ways to remove spores: (1) by firmly grasping a spore-filled sporangium with a jeweler's needle-nosed forceps and gently blowing on the sporangium to remove most of the spores (Farr, 1981), (2) by gently blowing through a hand held microblower (flexible rubber tube with an attached glass pipette having a very small terminal opening—see "Useful Tools" above); or (3) by placing broken sporangia in a water-filled test tube and vigorously shaking.

Picking up small specimens or specimen parts: Sometimes it is difficult to grasp a single, tiny myxomycete fruiting body, a small group of spores, or a portion of the capillitium for mounting. If so, place a droplet of saliva on the heel of one's hand and touch the end of a needle nose forceps or dissecting needle so that the saliva adheres to the tip. Then, touch the tip of the tool to a myxomycete sporangium or other material and, because of the surface tension properties, it will quickly adhere to the needle point. This really works well!

Slide mounting: A temporary water mount is perhaps best for the routine study and identification of Myxomycetes. Sporangia are mounted directly in water and a cover slip **dropped** in place. This often has the advantage of trapping air in the form of isolated air bubbles which will highlight the surface markings of spores and capillitial threads. Air bubbles produce a "lens effect" increasing magnification above that of the optical system of the compound microscope. Macbride and Martin (1934) also recommended water mounts as follows: "For nearly all species, the best mounts are those which are held in a saturated atmosphere for a few hours and then mounted in water. When care is taken that spores of such specimens are not permitted to swell, as they do previous to germination, they afford the most favorable mounts for the determination of spore markings."

To observe the three dimensional aspect of sporangia, the structural pattern of the columella, and the attachment, branching, and surface net of the capillitium, glass slide mounts of genera such as *Clastoderma*, *Comatrichia*, *Lamproderma*, and *Stemonitis*, for example, should be made in the following way. The sporangium should be centered in a small droplet of mounting medium. Use of too much mounting medium which will result in excessive movement of the specimen and cover slip; practice and experience will help determine the correct amount

of mountant. Take a size number 1 or 1 1/2 cover glass and break each corner so that a triangular shaped fragment of glass is positioned at each of the four corners of the mounting droplet on the microscope slide. Use a needle nose forceps or dissecting needle to properly position the broken glass fragment. Then place a number 1 1/2 cover slip angled at 45 degrees on one side of the droplet. Use two dissecting needles—one to hold the rear edge of the cover slip in place and the other to lower the cover slip. Gradually and gently lower the cover slip which will push and spread the mounting medium at the leading edge. If done properly, no air bubbles will form. This kind of slide mount will preserve the internal structural features of the sporangium because the cover slip is slightly raised avoiding "sandwiching" the specimen.

Literature Cited

- Farr, M. L. 1981. *How To Know The True Slime Molds*. W. C. Brown Company Publishers, Dubuque. 132 pp.
- Martin, G. W., and C. J. Alexopoulos. 1969. *The Myxomycetes*. University of Iowa Press, Iowa City. 496 pp. + 41 pl.
- Macbride, T. H., and G. W. Martin. 1934. *The Myxomycetes*. Macmillan Co., New York. 339 pp. + 21 pl.
- Stephenson, S. L., and H. Stempfen. 1994. *Myxomycetes. A Handbook Of Slime Molds*. Timber Press, Portland. 183 pp.
- Stevens, R. B. 1974. *Mycology Guidebook*. University of Washington Press, Seattle. 712 pp.

Calendar of Events

25–29 August 1996. **8th International Congress for Culture Collections**, "Culture Collections to Improve the Quality of Life," Veldhoven, The Netherlands. Dr. Dirk van der Mei, Chairman, Organizing Committee. Contact: Secretariat ICCC-8, Centraalbureau voor Schimmelcultures, PO Box 273, 3740 AG Baarn, The Netherlands Phone: +31-2154-81211.

Fax: +31-2154-16142.
<iccc8@cbcs.nl>.

29 August–September 1, 1996. **NAMA/North East Mycological Fed. Foray**, Ascutey Mountain Resort, Brownsville, VT. Contact: David W. Fischer, 343 Randolph St., Syracuse, NY 13205-2357. <xprtmshrm@aol.com>.

30–31 August 1996. A Workshop to Discuss "Access to Microbial Genetic Resources Within The Framework of the Convention on Biological Diversity." Organised by the World Federation for Culture Collections (WFCC) and the Forum of Industrial Microbiologists (FIM). The workshop will take place in Veldhoven, The Netherlands, immediately following the International Congress

for Culture Collections (ICCC8). The aim of the workshop is to consider the implications of the Convention on Biological Diversity on access to microbial genetic resources, both from the point of view of the microbial resource centres and the user community. Information is available through the WFCC Web site, <<http://www.wdcm.riken.go.jp/wfcc/wfcc.html>>, or from Barbara Kirsop, WFCC Biodiversity Committee. Phone: 44 1778 570618. Fax: 44 1778 570175. <barbara@biostrat.demon.co.uk>.

1–7 September, 1996. Progress and Problems in Lichenology in the Nineties (3rd International Association for Lichenology Symposium), Salzburg. Contact: Dr. Roman Türk, University of Salzburg, Institute of Plant Physiology, Hellbrunnerstr. 34, A-5020 Salzburg, Austria. Phone: +43 662 8044 5588. Fax: +43 662 8044 5010. <tuerk@edvz.sbg.ac.at>. WWW announcement at <<http://www.sbg.ac.at/pfl/projects/lichen/index.htm>>.

1–7 September 1996. Society for Invertebrate Pathology 29th Annual Meeting and 3rd Colloquium on *Bacillus thuringiensis*. Cordoba, Spain. Contact Wendy Gelernter, Secretary, Soc. for Invertebrate Pathology, Phone: 619-272-9897. <pacenet@delphi.com>.

16–20 September, 1996. First World Congress On Allelopathy, A Science For The Future will be held in Cadiz, Spain. Information available at <http://www2.uca.es/dept/quimica_organica/allelopathy.htm>. [posted on MSA Bulletin Board; Editor has no additional information]

23–26 October 1996. 2nd Latin American Congress of Mycology, Havana, Cuba. Contact: Lic. Mayra Camino, Jardín Botánico Nacional, Carretera del Rocío Km 3 1/2, C.P. 19230, Calabazar, Boyeros, C. Habana, Cuba. Fax: (53-7) 33-5350. <hajb@ceniai.cu> or Dr. Rolando Tapanes, Inst. Medicina Tropical “Pedro Kouri,” Apartado 601, Mari-

anao 13, C. Habana, Cuba. <ciipk%infomed.sld.cu@gn.apc.org>.

11–13, October 1996. Symposium: The Phylogeny of Life and The Accomplishments of Phylogenetic Biology. University of Arizona, Tucson, Arizona. Sponsored and Organized by The Research Training Group in The Analysis of Biological Diversification. Contact: Marty Wojciechowski or Anne Gerber, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, Arizona USA 85721. <rtg@ccit.arizona.edu>. Updates posted to RTG Web site: <<http://biodiv.arizona.edu/rtg.html>>.

13–14 October 1996. The Taxonomic Databases Working Group (TDWG) Annual Meeting and Symposium will take place on at the Vascular Plant Herbarium (TRT), Royal Ontario Museum, Toronto, Canada. For additional program information contact either: Timothy Dickinson, Vascular Plant Herbarium (TRT), Center of Biodiversity and Conservation Biology, Royal Ontario Museum, 100 Queen’s Park, Toronto, Canada M5S 2C6. Fax: 416-586-5516. <timd@rom.on.ca> or TDWG Secretariat, Real Jardín Botánico - CSIC, Plaza de Murillo 2, 28014 Madrid, Spain, Fax: +34 (1) 420-0157. <pando@ma-rjb.csic.es>.

29–31 October 1996. The First International *Fusarium* Biocontrol Workshop, Beltsville, MD. Sponsored by the Beltsville Agricultural Research Center, Biocontrol of Plant Diseases (BPD) and Systematic Botany and Mycology (SBML). A complete range of topics concerned with biological control of diseases caused by *Fusarium* spp. and use of *F. oxysporum* as a mycoherbicide will be discussed from exploitation and biosystematics to host-parasite interactions/molecular biology to development/implementation. Each session will consist of a core program of informal keynote presentations supported by short contributed presentations, comments, and discussion. The program will be flexible so that more time can be devoted to a particular topic if needed. For information or

registration, please contact: Robert D. Lumsden, Research Leader, Biocontrol of Plant Diseases Laboratory, Plant Sciences Institute, Bldg. 011A, Room 275, BARC-West, 10300 Baltimore Avenue, Beltsville, MD 20705 USA.

1997 (January 29–31). Federal and International Scientific Permits: A Workshop for Natural History Museums and Collectors, San Diego, California. Sponsored by the San Diego Natural History Museum and the Association of Systematics Collections.

Confusion and controversy often surround the process of applying for and maintaining valid collecting permits. In many cases, the process is not well understood, new laws and regulations are not well publicized, or there is confusion about different agencies and responsibilities. This bilingual (English and Spanish) workshop will address these problems by bringing together scientists, agency representatives and collectors from several countries to examine the problems and provide clarification. Permit agency representatives will be available at a “permits bazaar” to answer individual questions and to facilitate on-site permit applications. Contact: Sally Shelton, Director, Collections Care and Conservation, San Diego Natural History Museum, P.O. Box 1390, San Diego, California 92112 Phone: 619-232-0248. <libsdnhm@class.org>. Note that the date of the workshop, which was originally scheduled for 25–27 September 1996, has been changed.

1997 (February 13–18). AAAS, Seattle, WA.

1997 (March 18–23), The 18th Fungal Genetics Meeting, Asilomar, CA. Meeting will include plenary sessions on Metabolism and Gene Regulation; Cell Biology and Pathogenesis; Sexual and Asexual Development; Evolution and Population Genetics; workshop sessions; and poster sessions. Proposals and suggestions for workshop topics and potential organizers are now invited and should be submitted before

31 May, 1997 to either Dr. N. Louise Glass, Biotechnology Laboratory, University of British Columbia, Vancouver, B.C. V6T 1W5 Canada; <glass@unixg.ubc.ca>. Fax: 604 822 6097 or to Dr. Michael J. Hynes, Department of Genetics, University of Melbourne, Parkville, Vic. 3052 Australia; <hynes_lab@muwayf.unimelb.edu.au>. Fax: 613 9344 5139.

1997 (August 3–7). **AIBS/ Mycological Society of America**, Montreal, Quebec. MSA program chair is Steve Miller.

1997 (August 14–17). NAMA Foray will be hosted by the Colorado Mycological Society at Copper Mountain Resort in Summit County, Colorado. NAMA is non-profit organization of professional and amateur mycologists. [need contact - check: <http://www.dnai.com/~mwood/myko/web/na_mycos.html>.]

1998 (February 12–17). **AAAS**, Philadelphia, PA.

1998 August 2–6). **AIBS/Ecological Society**, Baltimore, MD.

1998 (August 23–28). **6th International Mycological Congress**, Jerusalem. The Council of the British Mycological Society invites constructive suggestions on the format for IMC6. Those persons who attended IMC5 in Vancouver may consider that future Congresses should incorporate additional features, e.g., Plenary Sessions, or programs for accompanying persons. Comments received will be collated by the General Secretary and forwarded to Professor Margalith Galun, Organizer of IMC6. Comments should be sent to the Society's General Secretary, Dr. Stephen Moss, School of Biological Sciences, University of Portsmouth, King Henry 1 Street, Portsmouth, Hampshire, PO1 2DY.

1998 August. **International Plant Pathology Congress**, Scotland.

1999 (January 21–26). **AAAS**, Anaheim, CA.

1999 (August 1–7). The **International Botanical Congress** will be held in St. Louis, MO. The organizers want mycology to be included and would like to have some fully intergrated symposia including mycology. Although the meeting will not occur until 1999, we must offer suggestions now if they are to be considered. Mycology needs to nurture its botanical roots! Contact: Don Pfister or Meredith Blackwell with any ideas of topics that will be of interest to the botanical community as a whole, as well as mycology.

1999. **Amer. Phytopath. Soc./Canad. Phytopath. Soc.**, Montreal, Quebec.

1999. **International Bact. & Applied Microbiol. Congr.**, Sydney, Australia.

Mycological Classifieds

Read the Mycological Classifieds for announcements of courses, employment opportunities, positions wanted, and mycological goods and services offered or needed.

Courses

Fungi in laboratory dermatology by Lynne Sigler at the International Meeting of the Australian and New Zealand Societies for Microbiology, Christchurch, N.Z., Sept. 29, 1996. A one day workshop focusing on identification of dermatophytes and non-dermatophytic fungi from skin, hair and nails. Contact: Dinah Parr, Auckland Hospital, FX 011-64-9-307-4952.

Individual training is available by arrangement at the University of Alberta Microfungus Collection and Herbarium in one or more of the following areas: Identification of human pathogenic fungi; Identification of fungi involved in indoor air problems;

and Fungal isolation, cultivation and preservation. The University of Alberta Microfungus Collection houses over 8400 specimens, microscopic slides and illustrative material which may be examined. Fee \$200 U.S. per day includes individual training. Self-study programs are also available at a lower fee. Contact: Lynne Sigler, Curator & Professor, University of Alberta, Microfungus Collection and Herbarium, Devonian Botanic Garden, Edmonton, Alberta, Canada T6G 2E1. Fax: 1-403-987-4141; Phone: 1-403-987-4811. <Lynne.Sigler@ualberta.ca>.

Mycological Goods and Services

The University of Alberta Microfungus Collection and Herbarium (UAMH) is a Canadian repository for fungus cultures of importance in medicine, agriculture, forestry and pharmaceutical and industrial applications. Over 8400 strains are currently held and a Catalogue is available

(\$15.00 including postage). Services include: Culture depository (general and safe deposit); Culture distribution (catalogue available); and Significant collections of ecto-, orchid and ericoid mycorrhizal fungi, Onygenales and keratinophilic fungi, human pathogens, Hyphomycetes, soil fungi; Consultation; Identifications; Analyses of mold problems (contamination & hygiene, human pathogens, biodeterioration, indoor air quality); Contract research; Professional training, and Database (transfer to WWW pending). Price schedule available upon request. Contact: Lynne Sigler, Curator, University of Alberta Microfungus Collection and Herbarium, Devonian Botanic Garden, University of Alberta, Edmonton, Alberta, Canada T6G 2E1.

Mold Identification Services. We identify molds and other fungi for industry, agriculture and academia. E-mail <microbe@pioneer.net>. Phone: 503-929-5984. Home page: <www.pioneer.net/~microbe/>

abbeylab.html> or write Cascade Research Associates & Abbey Lane Laboratory, P.O. Box 1665, Philomath, OR 97370 USA. [Steven Carpenter]

Compute Software. CORTBASE. A Nomenclatural Database of Corticioid Fungi by Erast Parmasto. Version 1, May 1996. ISBN 9985-9081-0-4. 6.5 MB disk space, zipped 855 KB on a 3.5" or 5.25" HD floppy disk. Free-ware; available for handling and mailing cost from the author, Institute of Zoology and Botany, 181 Riia St., EE 2400 Tartu, Estonia; Fax: +372-7-383013. <erast@park.tartu.ee>. Requirements: DOS 3.2, 520 KB RAM. The database of 7350 species names includes about 3920 basionyms, 1740 accepted species, 1285 facultative synonyms, and 880 names of uncertain application.

Positions Available

Postdoctoral position to study regulation of sexual development by homeodomain proteins in the model basidiomycete fungus, *Schizophyllum commune*. This project is to examine the nature of combinatorial protein-protein interactions coded by allelic pairs of genes whose combinations specifically activate or fail to activate development. Experience in all standard techniques of recombinant

DNA analysis, protein expression, protein-protein interactions and protein-DNA interactions, essential. This project is jointly administered by Dr. Charles P. Novotny, Dept. of Microbiology and Molecular genetics and Dr. Robert C. Ullrich, Dept. of Botany and Agricultural Biochemistry. This position is available commencing October 1, 1996 at a stipend of \$22,000 plus benefits. The Fellowship is renewable on an annual basis dependent upon progress. See *Proc. Natl. Acad. Sci. USA.* 89:7169-7173 and 7174-7178, *Molec. Gen. Genet.* 244:318-324, *Biochem. Biophys. Res. Commun.* 211:1071-1076, and *Curr. Gen.* 29:136-142 and 143-149 for additional background. To apply send curriculum vitae, statement of research interests and three letters of reference to: Dr. Robert C. Ullrich, Department of Botany, University of Vermont, Burlington, VT 05405-0086. Phone 802-656-0432. Fax 802-656-0440 or 0640. <rullrich@moose.uvm.edu>. The University of Vermont is an AAEO employer.

Position Wanted

Looking for an academic or research position in plant pathology/ mycology in the next April. I am a 59-year-old Japanese Plant pathologist (our retirement age, 60) in one of the National Research Institute, Tsukuba Sci. City.

I have worked on soilborne diseases and their pathogens, and am also interested in various soil fungi including Pythiaceus fungi. I obtained Ph.D. in Plant Pathology at Univ. of Calif., Berkeley in 1967. I am the author of the book titled "Pictorial Atlas of Soil and Seed Fungi," Lewis Pub., Boca Raton in 1994. I have had various study and survey experiences abroad including U.S.A., Guatemala, Paraguay, Switzerland, Indonesia, Taiwan, and recently returned from the Dominican Republic, studying the fungi associated with black pepper for 45 days. I am interested in working on biology of various soil fungi, and the biocontrol and fertilization effect on plants. I am very young for the age, healthy and active, and would like to work at least for 5 yrs more in Japan or any other country. Please give me a good information or contact me, Dr. Tsuneo Watanabe. Fax: 81-298-73-3211. <tsuneowa@ffpri.affrc.go.jp>.

Publications Wanted

I am looking for original reprints of papers published by Arthur and Gulielma Lister. [Harold Keller, Office of Research and Biotechnology, University of North Texas Health Science Center, Fort Worth, TX 76107-2699.]

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- _____ **Sustaining** \$ 250 (benefits of Regular membership plus listing in *Mycologia* and *Inoculum*)
- _____ **Life** \$ 1,000 (one-time payment; includes *Mycologia* and *Inoculum*)
- _____ **Associate** \$ 30 (includes only *Inoculum*)
- _____ **Emeritus** \$ 0 (benefits of Regular membership except *Mycologia*; \$30 with *Mycologia*)

AREAS OF INTEREST: [Mark most appropriate area(s)]

- _____ **Cell Biology – Physiology** (including cytological, ultrastructural, metabolic regulatory and developmental aspects of cells)
- _____ **Ecology – Pathology** (including phytopathology, medical mycology, symbiotic associations, saprobic relationships and community structure/dynamics)
- _____ **Genetics – Molecular Biology** (including transmission, population and molecular genetics and molecular mechanisms of gene expression)
- _____ **Systematics – Evolution** (including taxonomy, comparative morphology molecular systematics, phylogenetic inference, and population biology)

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