The First Book of Mycology: *Theatrum Fungorum* by Franciscus van Sterbeeck (1675)

*by Nicholas Money*

Sterbeeck’s *Theatrum Fungorum*, published in 1675, is a beautifully-illustrated work on mushrooms, whose interest is heightened by the whiff of deceit that it conveys to us from the Renaissance. To appreciate the novelty and significance of this book, it’s worth reflecting on the fact that Sterbeeck lived at a time when some believed that mushrooms were birthed by comets. There had been earlier works that included illustrations on fungi, and brief monographs on phallic mushrooms and truffles were published in the sixteenth century, but Sterbeeck’s was the first book that concentrated upon mycology and sought to demystify mushrooms. It is written in Flemish, which is unusual given the prevalence of Latin in scientific publications in the seventeenth century. This made the book more accessible to Sterbeeck’s countrymen, among whom the author wished to popularize mushroom picking and consumption. Sterbeeck explained how to discriminate between the poisonous and the delectable, discussed the medical uses of different fungi, and ventured his opinion that potatoes and the root nodules of legumes are relatives of truffles. But it is the source of the illustrations that is the most intriguing part of this volume.

Beautiful copper plate illustrations of microfungi had appeared a decade earlier in Robert Hooke’s 1665 masterpiece, *Micrographia*, but *Theatrum Fungorum* was the first publication that showcased fine engravings of mushrooms rather than the rougher illustrations printed from wood-blocks. The engravings in Sterbeeck’s work are exquisite and the subjects are immediately identified, from the meadow mushrooms, embellished with a flute-playing shepherd and his flock (Figure 1), through morels, boletes, and tree-killing brackets. Invertebrates and a few reptiles associated with the fungi are scattered among the plates, which is a surprising touch for a book on mushrooms. Even in modern guides we tend to present fungi as peculiar things that live in isolation from the rest of nature. (This may be a bit unfair to authors of mushroom books, after all, bird guides show don’t show pictures of parasites clinging to feathers.) Now to the bad news: contrary to the book’s supposed novelty, few, if any, of the illustrations are original.

Franciscus van Sterbeeck (1631-1693) was a Flemish priest and member of the nobility who spent most of his life in Antwerp. He was ordained in 1655, but chronic illness curtailed his priestly duties and afforded an opportunity to pursue his interest in botany. In 1672 he was visited by Adrian David, a pharmacist and botanist, who showed him a collection of 87 sheets of paintings of fungi known as the *Le Code de l’Éscluse* or *Clusius Codex*. Jules-Charles l’Éscluse (1526-1609), Latinized as Carolus Clusius, had collected fungi in Central Europe in the 1570s and ’80s. During his collecting trips, Clusius was accompanied by his patron’s chaplain and a watercolorist who painted the fungi in their natural settings (the name of the artist is unknown). Late in life, Clusius
became a professor at the University of Leiden and prepared his magnum opus titled, *Rariorum Plantarum Historia* that was printed in 1601. The illustrations for this work were supposed to have come from the *Codex*, but the publisher lost the sheets and woodcuts were substituted.

More than 70 years passed and the *Codex* was handed to Sterbeeck. At that time it seems to have been owned by a botany professor at Leiden, but its seventeenth century movements are unclear. Struck, no doubt, by the beauty of the *Codex*, Sterbeeck made liberal use of the paintings, transcribing them into the copper plate engravings for his *Theatrum Fungorum*. More than half of the illustrations in the book are derived from the *Codex*. Additional engravings came from another work by Clusius, and still more from works by Mathias de l’Obel and Jean Bauhin. The reproduction of illustrations by authors of botanical works was commonplace in the seventeenth century, but Sterbeeck went further than most and, worse, claimed that the majority of his figures were based on personal observations. One exception was his engraving of *Mucor*; realizing that many of his readers might recognize this distinctive illustration from Hooke’s *Micrographia* he acknowledged its source. Sterbeeck’s methods might have escaped detection, however, because the *Codex* disappeared again for the next 200 years. (Dan Brown eat your heart out.)

In the late nineteenth century, the *Codex* was found in the library of the University of Leiden, so it probably hadn’t gone far after it was borrowed by Sterbeeck. Its historical significance was championed by Gyula Istvánffi (1860-1930), a Hungarian author, who published high quality reproductions of the watercolors in an elephant-sized book titled, *Études et Commentaires sur le Code de l’Écluse*, in 1900. Sterbeeck’s use of the *Codex* is obvious from the Istvánffi illustrations shown here in Figure 2. The original of the *Clusius Codex* remains at the University of Leiden, which is one of many reasons for a trip to The Netherlands.

**Acknowledgment:** The author thanks Anna Heran and Betsy Kruthoffer of the Lloyd Library in Cincinnati for their help in exploring the library’s incomparable and inexhaustible collection of mycological works.

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Figure 1. One of the plates from Franciscus van Sterbeeck, *Theatrum Fungorum*. Note the helpful inclusion of a scale on the right margin of the plate. Image courtesy of the Lloyd Library, Cincinnati, Ohio.

Figure 2. Examples of Sterbeeck’s use of the *Clusius Codex* in his *Theatrum Fungorum*. a and c are *Codex* watercolors from Gyula Istvánffi, *Études et Commentaires sur le Code de l’Écluse*; b and d are from Franciscus van Sterbeeck, *Theatrum Fungorum*. Images courtesy of the Lloyd Library, Cincinnati, Ohio.
It is hard to believe that this is my last President’s Corner article. Time truly does fly – I want to thank all of you for the opportunity to serve as MSA President this past year.

I just got back from our Annual Meeting and Foray in Baton Rouge, and I’m still thinking about all the great papers that I heard, interesting conversations that I had, and cool fungi that I saw on the foray. So most of this piece will be focused on the meeting. The officer and committee reports plus minutes of council meetings that will be published in *Inoculum* 58(6) will provide you with details of the Society’s activities over the past year.

First and foremost, I want to thank everyone involved with putting the meeting together. **Meredith Blackwell** and her crew of students and volunteers on the local organizing team performed tasks above and beyond the call of duty. **Gerry Adams** and members of the Program Committee put together a terrific program – finding symposia, balancing content and reducing conflicts among concurrent sessions. **Dave and Pat Lewis, David Fuller** and **Meredith Blackwell** organized a terrific foray; the sites were good, the weather not too hot, the fungi plentiful and interesting, the Ouida Plantation incredible, and the camaraderie among participants excellent. **Betsy Arnold, Don Hemmes, Dave Geiser, Kathie Hodge, John Taylor, Karen Snetselaar, Mike McCann and Sabine Huhndorf** need to be recognized for their stellar performance and organization of the Auction. **Don Hemmes**’ photo gallery of past presidents and **Don Pfister’s** historical CD were great creations that helped celebrate our 75th Anniversary. As always, our awards committees did an outstanding job identifying highly deserving members to be recognized; these committees work very hard deciding among large number of terrific applicants so let me quickly remind everyone of the breadth of the awards that we present. Steven Harris of terrific applicants so let me quickly remind everyone of the breadth of the awards that we present. **Alexopoulos, W. H. Weston Award for Teaching Excellence, Distinguished Mycologist (Georgiana May, Chair), Research Awards (Iris Chavat), and Student Awards: Fellowships and Presentations (Lori Carris, Chair).** Thanks also go to **Dirk Redecker** and the Karling Annual Lecture Committee for selecting such a great speaker for this year’s meeting – **Patrick Keeling**. I also want to recognize the Deep Hypha Grant and Bausch and Lomb, Inc. for supporting three symposia; “Bar Coding in Fungi,” “What can transcriptional profiling tell us about fungal biology?” and “Fungal Evolutionary Genomics” respectively. This funding was instrumental in enabling us to present the number and diversity of symposia that were offered during the meeting. Last, but certainly not least, my thanks go to our intrepid and indefatigable Secretary, **Cathie Aime**, who was involved with all aspects of the meeting as well as keeping me, and the rest of council, on track.

This is a very exciting time to be a mycologist and the breadth of papers at the meeting did a great job capturing the amazing work being undertaken by our members to understand fungal biology. I briefly give a range of highlights from the meeting in the next paragraph. This is in no way a complete listing of the great presentations and topics. Rather it is meant to give a flavor of the meeting for those who could not make it and to serve as encouragement to all of you to attend next year’s meeting at Penn State.

Symposia ranged from discussions of nomenclatural issues to fungal evolutionary genomics. The new NSF-supported Biological Research Coordination grant, FESIN, was unveiled during the Bar Coding in Fungi symposium. This is a very exciting initiative that will bring together ecologists and systematists to develop new tools that will enable fungi to be rigorously included in ecological, biogeographical and biodiversity studies. We’ll be hearing much more on this initiative in upcoming issues of the *Inoculum* and there will be a FESIN session at next year’s meeting. As an outcome of discussions during and after the Fungal Conservation Research symposium, a proposal will be made to MSA membership to create a MSA Committee on the Conservation of Fungi. I am happy to report that no major “fights” broke out during the nomenclature session and that all parties are still working together to come up with solutions to a number of important issues. If you were not at Patrick Keeling’s Karling Lecture on *Microsporidium*, talk with someone who was there to learn a bit about these totally fascinating fungi or fungi-like organisms (the jury is still out on their precise placement in the tree of life) – e.g., don’t believe what you had read about them.

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lacking mitochondria – Microsporidium have mitochondria, but the mitochondria are much reduced and take in ATP rather than generate it! There were a couple of papers on the Laccaria bicolor genome, the first ectomycorrhizal fungus sequenced – its genome is the largest of any fungus yet sequenced and the genome is 25% unique. Paxillus involutus is the next ectomycorrhizal fungus to be sequenced; comparing it to the L. bicolor genome should prove very interesting in understanding this ubiquitous symbiosis. Rather than have a symposium organized on a particular topic, the final session on Thursday afternoon focused on the future of mycological research by featuring talks by postdoctoral fellows – it was an exciting session with presentations ranging from soil ecology, to using microarrays for detecting fungal pathogens and understanding gene expression, to the latest in phylogenetic relationships among major clades of fungi. In between these symposia were many terrific papers and poster sessions. If you can’t tell, I had a great time at the sessions and learned a lot!

In closing, I want to thank everyone who participates in the MSA. It is a great society due to the efforts of many, many people. I need to make a special thank you to our outstanding Secretary, Cathie Aime, and outgoing Treasurer, Karen Snetselaar, for the invaluable service that they provided to me and the MSA this past year. I also want to recognize the important contributions made by President Elect (now President) Don Hemmes, V.P. (now President Elect) Roy Halling, Mycologia Managing Editor Jeff Stone, Mycologia Editor –In-Chief Don Natvig, and our new Webmaster and Inoculum editors, Kathie Hodge and Jinx Campbell, respectively, as well as everyone serving on Council and on MSA committees.

It has been a great honor and privilege to give back to the society that has meant so much to me throughout my career. Thank you all.

MSA Secretary’s Email Express

MSA Council has completed three email polls since my last report, approving the following nominations, all brought by the Honorary Awards Committee, Chaired by Carol Shearer:

- MSA Full Council poll 2007-05: Nomination of Jan Stenlid for MSA Honorary Member.

New Members: It is my pleasure to extend a warm welcome to the following new (or returning) members. New memberships will be formally approved by the Society at the Annual Business Meeting in Baton Rouge in August 2007.

- Australia: Nigel Fechner
- Brazil: Gilberto Coelho
- Canada: Jianping Xu
- Japan: Norihiro Shimomura
- South Africa: Emma Theodora Steenkamp
- Sweden: Michael Krikorev
- Thailand: Jitra Kokaew

Emeritus candidates: I have received one application for emeritus status from Arthur Welden of Tulane University in New Orleans. Emeritus status is conferred upon retired or retiring members who have at least 15 years good standing with the Society.

REMINDER: MSA Directory Update: Is your information up-to-date in the MSA directory? The Society is relying more and more on email to bring you the latest MSA news, awards announcements and other timely information, and our newsletter. To ensure that you receive Society blast emails and the Inoculum as soon as it comes out, and so that your colleagues can keep in touch, please check the accuracy of your email address and contact information in the online directory. This can be accessed via our web site at www.msafungi.org. If you need assistance with updating your membership information, or help with your membership log-in ID and password, please contact our Association Manager at Allen Press, the always-helpful Kay Rose at krose@allenpress.com.

Cathie Aime
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2007 Distinguished Mycologist Award Winner: David McLaughlin

Awarded annually to an individual who has established an outstanding mycological career, the Distinguished Mycologist is one of the highest awards bestowed by the MSA. Given the high level of scholarship and accomplishment of all applicants, the award must mark a truly distinguished career of one individual. The Distinctions Committee evaluates candidates on the basis of quality, originality, and quantity of their published research, and on the basis of service to the MSA or to the field of mycology in general.

The accomplishments of this year’s recipient, David J. McLaughlin (University of Minnesota), exemplifies all those qualities and at the highest levels.

Published Research: David has supervised 19 graduate students and sponsored three post-docs and gives them much of the credit for his accomplishments, saying, “One of the most rewarding aspects has been working with the graduate students and post-docs.” However, this statement cannot be the whole story as David’s mark on mycology was made even before assuming his professorship at the University of Minnesota in 1969. Working with Melvin Fuller in his Ph.D. at the University of California, Berkeley, he was already playing a major role in shaping mycological studies of the future; he brought living fungi into the lab for developmental studies. Surely, that work with basidiomycete development must have been one of the earliest studies in the now popular field of Evo-Devo. One sees that thread throughout a career that combines keen observation of fungal development with probing question of evolutionary process and pattern. As a result, he has provided mycology with the seminal work on nuclear division patterns and their utility for phylogenetic reconstruction and indeed, the text-book examples of basidiospore development.

David’s published work now spans four decades and includes over 60 peer reviewed papers, numerous book chapters and editorship of books such as the master work edited with Esther McLaughlin, The Mycota, volumes VI A and VII B. Actually, his list of contributions is likely much longer, as one of his former students pointed out that he routinely removed his name from joint work, allowing the student to shine first. David’s published work is notable in its impact, longevity, and quality, and it is also remarkable in its breadth. We have noted the developmental studies which continue in the Assembling Fungal Tree of Life (AFTOL) research. We add to that David’s recent publications covering the gamut of ecology, floristics and the coevolutionary interactions of fungi with plants and insects. We have a truly remarkable career. As he modestly states, “I have often worked with “unimportant” species, such as the auricularioid (or should we say pucciniaceous) moss parasites and Pterulaceae, but they have become important as we begin to understand them.” We must certainly say that they became important as David showed us their incredible value in understanding the evolution of fungi.

Service to MSA and the field of mycology: David has served the MSA and the field of mycology well and tirelessly. He was elected Vice-President, MSA Fellow, President-elect and then President of MSA in quick succession from 2002-2005. Many see his editorship of Mycologia as an even greater contribution. He said, “Seeing Mycologia progress from a “little brown book” to a modern journal with a functional associate editor system was another rewarding aspect.” Again, his letters of support attest to the value of his service as David’s “outstanding reputation as an extremely fair yet demanding Editor … contributed significantly to the emergence of Mycologia as an international outlet for mycological publications.” The associate editor system installed under David’s direction took the journal a significant step forward.

Service outside of the limelight may fail to draw the attention it deserves. Here, we have the opportunity to highlight the long and stalwart commitment David has made to collections of living fungi and to maintenance of the fungal herbarium at the Bell Museum at the University of Minnesota. As many mycologists work to define, describe and understand fungal diversity, a diversity rivaled only by the insects and far outweighing that of more charismatic megafauna, the tremendous value of collections David has established at UM have become increasingly clear. Add to that David’s continuing dedication to teaching organismal diversity at all levels, and communicating the value of that diversity to the public, and we see service to mycology in the best sense of the word.

The Distinguished Mycologist may rightfully be considered the highest award bestowed by the MSA and in the continuing tradition of exceptional Distinguished Mycologist recipients, we congratulate David J. McLaughlin.
The Alexopoulos Prize is to be awarded annually to an outstanding mycologist early in their career. The committee primarily focuses on the quality, originality, and quantity of their published work and as only a single award is to be made from among several worthy applicants, the decision is never easy.

This year, the committee is pleased to award the Alexopoulos Prize to Teresa Pawlowska, especially noting her innovative and broadly recognized work. Teresa has published in journals central to mycological progress, such as Mycological Research, and in journals with the high impact of Nature. The Nature paper titled, “Organization of genetic variation in individuals of arbuscular mycorrhizal fungi” with co-author John W. Taylor, presents the groundbreaking demonstration that arbuscular mycorrhizal fungi are primarily homokaryotic but that each nucleus is polymorphic at rDNA loci. Her excellent work does not stop there with seven first authored papers in widely read journals and three invited book chapters. In such a tough funding environment, it is good to know that the best work still shines through; Teresa won an NSF on genome organization in AM fungi.

With all of her publishing accomplishments, Teresa has not shied away from organizing and promoting several important symposia; on Bacterial Symbionts of Fungi at the MSA in Québec City, and the ever popular, Population Genetics Session, at the Fungal Genetics Conference in Asilomar, CA. Moreover, she served as Advisory Board Member for the International Culture Collection of Arbuscular Mycorrhizal Fungi (INVAM).

Teresa Pawlowska’s academic career has progressed with energy, creativity and intelligence through her Ph.D. at University of Minnesota (1993 - 1998) with Iris Charvat, to a postdoctoral research position with John Taylor (1999-2004) and to her current position at Cornell University. Her work, as well as her enthusiasm, is best expressed in her own words:

“Arbuscular mycorrhizal fungi are full of surprises. Studying them is like a rollercoaster ride that whisks you from the obvious and mundane to the startling and unexpected. For example, our latest observations of spore development suggest that the spores are populated by an influx of multiple nuclei from the surrounding mycelium rather than by mitotic divisions of a primordial nucleus. This mode of spore formation is difficult to reconcile with the predictions of the evolutionary theory about the significance of uninucleate propagules for reduction of intraindividual conflicts.”

The Distinctions committee is pleased to award Teresa Pawlowska the Alexopoulos Prize and while her career will likely be full of scientific surprises, it has the sure trajectory of great success in the future.

Weston Award for Excellence in Teaching: Bruns and Currah

One of the many strengths of the Mycological Society is recognition of excellent teaching, whether that excellence is expressed in teaching undergraduates, training graduate students and postdoctoral researchers, or teaching in the larger community. With that breadth in mind, the Distinctions Committee is pleased to make two awards this year, to Thomas E. Bruns (U. California, Berkeley) and to Randolf S. Currah (U. Alberta).

Thomas Bruns — Mycology needs creative minds and innovative thinking and this is where Thomas Bruns makes an outstanding contribution. He encourages imagination, rigorous thinking, and then critical testing of ideas through field work. For good reason, he is highly influential in training mycological researchers ready to make contributions in the broad fields of ecology and systematics.

Tom’s own words attest to the broad background obtained in a B.S. at U. Illinois, M.S. at U. Minnesota, and a Ph.D. at U. Michigan, and speak best for the respect and humor with which he and his students interact: “I am deeply honored to receive the Weston Teaching award. It means a lot to me, because I love to teach and have invested much of my time in it, especially in recent years. I thank all the students I have had the pleasure to teach over the last 18 years; they have made this award possible. It has been an honor and a
privilege to work with the graduate students at Berkeley, and they have certainly taught me more than I ever taught them! For the undergraduates, I thank them for all their questions that have pushed me to think about things in different ways and to learn more than I previously knew. Finally I thank my role models of teaching professors: Doug Schemske, Mary Willson, Ed Cushing and Herb Wagner, who had the talent to make plant systematics lectures come alive. At Berkeley, Fields Cobb who showed me how much fun field trips can be, and John Taylor, who has been a wonderful colleague and with whom I have had the pleasure of co-teaching Biology of the Fungi.”

Since arriving at U. C. Berkeley, his lab quickly became the place to be as he successfully guided 11 graduate students to the completion of degrees, advised 12 postdoctoral researchers and hosted visiting scientists too numerous to list. His teaching contributions in the undergraduate classroom include Biology of Fungi, Molecular Ecology, and Forest Pathology. More than the academic career of excellence, which Tom has achieved, it is the recommendations of students that make the Weston Award special. Tom is dedicated to the idea that students see living organisms, both in the lab and in the field, and imbues his classes with a sense of adventure and learning. Students at every level have returned that affection. How many students say things like, “The most fun day in class was the review for the final.” “It’s fun to be part of the underground movement!” As Tom Horton summarized adeptly in his nomination, “Tom’s teaching in the classroom and field are noteworthy. But he is to be commended equally for his training of scientists at all levels.”

Randolf S. Currah — Randolf Currah’s qualifications for the Weston Award were immediately apparent. As a professor at the University of Alberta in Canada, he has been the recipient of four teaching awards and professorships and currently holds the Vargo Distinguished Teaching Chair. He has supervised 21 graduate student theses and 16 undergraduate projects, all the time producing over 100 peer reviewed publications in his career. Randy received an M.S. and Ph.D. from U. Alberta and since assuming the position of professor there in 1986, he has turned it into a mycological epicenter of research and teaching. As impressive as those awards and accomplishments are, the weight of the file came from an enthusiastic outpouring of support from undergraduate and graduate students, as well as from colleagues at all levels of the University of Alberta.

The many letters of support in the package spoke directly to Randy’s level of commitment, organization and talent in teaching mycology. “I am continually amazed how Dr. Currah is able to transform a group of students...into budding young mycologists capable of correctly identifying fungi they have never seen before.” “It is evident with his introductory biology classes; his “fungal sex” lecture is reaching legendary status.” How many of us dare to leave the PowerPoint in the office? The ability to “chalk and talk” is aptly described by a student as, “His sweeping, quick, yet astonishingly accurate drawings on the blackboard almost seem animated...” How about learning the names of all your students, as attested to by several students? “He had the uncanny ability to learn the names of all his students, even in the larger lecture classes.” Randy’s teaching brings out the best in his students, both graduate and undergraduate, and they return that enthusiasm, “Perhaps the most rewarding part of having Dr. Currah as a professor and supervisor is the fact that he truly cares for all of his students.”

Randy Currah holds the overall objective to instill in these people a fascination for the fungi and to encourage and foster their curiosity about what fungi are found in different habitats and what they might be doing there. Further, he presents Mycology as a discipline inspired by the efforts of a “wide range of personalities”. Certainly this approach must encourage students to think they are capable of making a contribution as well. In summarizing that philosophy he says, “My teaching philosophy involves inculcating students, at both the undergraduate and graduate level, with the notion that Mycology first invites informed exploration, and then rewards the trained investigator with endless fascination and pleasure.” As one student so clearly stated, “I feel qualified to state quite simply that Randy Currah is a gifted teacher of mycology.”
Honorary members are distinguished senior scientists with a long record of significant contributions to the science of fungal biology and who reside in and work in countries other than the U.S. and Canada.

**Jan Stenlid** is a Professor in the Department of Forest Mycology and Pathology at the Swedish Agricultural University in Uppsala. He is a world authority on the population biology of forest fungi, tree pathogens and endophytes. He probably is most closely identified with the basidiomycete, *Heterobasidion annosum*. His recent work with this important pathogen including the transmission of double-stranded RNA virus, population structure and gene flow among phylogenetic species, the role of hybrids in pathogenicity, *Agrobacterium*-mediated transformation, and genetic mapping of two intersterility loci makes him the international expert on this fungus and one of the leading mycologists in the field of evolutionary genetics. Currently he is the lead investigator on the *Heterobasidion* sequencing project underway at DOE.

Professor Stenlid’s research program is enormously productive and over 120 of his publications are listed in the ISI Web of Science and include contributions to *Nature*, *TREE*, *Molecular Ecology*, and many journals with a more mycological focus, including *Mycologia*. Not only is his productivity amazingly large, but also it is sound, inspirational and spans all fields from the applied to the theoretical.

As one of three professors in his department, Professor Stenlid has had a tremendous influence on shaping the direction of research and the training of a whole generation of Swedish mycologists. Twenty-one students have studied under him for a PhD, and 17 postdocs and visiting researchers have worked in his lab. His current research group includes 12 researchers, and he continues to attract the best and brightest in the field.

Professor Stenlid has served as an editor or member of the Editorial Board of *Mycologia* as well as the *European Journal of Forest Pathology* and *Agronomie*. He was a member of the scientific committee for IMC7 in Oslo, and has organized international conferences on forest pathology and fungal-microbe antagonisms. He is a sought-after speaker with 42 international visitations capped by his excellent symposium on forest mycology at IMC8 in Cairns.

Professor Stenlid is clearly deserving of the MSA’s highest honor for a foreign mycologist, Honorary Member, and adding his name to the list of illustrious Honorary Members will enhance the reputation of this award.

**MSA Honorary Fellows: Blackwell, Murrin, Snetselaar, and Spatafora**

MSA Fellows are members who are outstanding mycologists on the basis of one or more criteria: a solid record of mycological research, and/or successful teaching and development of teaching materials for mycology, and/or significant service to the Society. This is meant to recognize a core group of mid-career mycological achievers and outstanding MSA volunteers.

**Meredith Blackwell** — The Fellow’s Award is relatively new and although Meredith Blackwell has received other recognitions from the Society in the past, such as the Distinguished Mycologist Award, it seems fitting that her name appear among the Fellows of the Society in recognition of the depth and breadth of her contributions to Mycology, the MSA and to the sterling example she has set for younger mycologists in both science and service.

Meredith has contributed to our knowledge of many groups of fungi, but her work is especially known for unraveling the interactions between fungi and insects. The contributions in this area range from the evolution of Laboulbeniales to the many new species of yeasts in the gut of insects.

She has co-edited two volumes on fungal-insect interactions, and co-authored the most comprehensive text on fungi, *Introductory Mycology*. She was a leader in establishing the

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first Research Coordination Network on Fungi, Deep Hypha, which predated the Assembling the Fungal Tree of Life project and led to the modern synthesis of the Fungi in the Deep Hypha issue of *Mycologia*. Meredith is currently Boyd Professor at Louisiana State University.

Meredith has served on many different MSA committees for more than 30 years. She was President of the Society in 1992-1993. She has been a strong supporter of the Endowment Fund development that has aided many students in attending meetings. She has hosted Deep Hypha and MSA at LSU. She has been and continues to serve on international mycological committees, among them the IMA and IABMS. Her many contributions to Mycology deserve recognition with the Fellows Award.

**Faye Murrin** is an Associate Professor in the Department of Biology at Memorial University in St. Johns, Newfoundland. She is an active teacher and teaches a range of courses including Introductory Biology, Cell Biology and Mycology. She has trained three M.S. students and directed undergraduate research for 7 undergraduate honors students. It is especially notable that she has been active in outreach service to introduce science to young women and that effort resulted in her being honored with a lifetime membership in Women in Science and Engineering for her work with the WISE Summer Student Program.

Faye’s research deals with two different areas of mycology. The first centers on the organization and function of the cytoskeleton of insect pathogenic fungi, using the zygomycete, *Entomophaga aulicae*, as a model system. The second deals with the quantitative study of ectomycorrhizal basidiomycete communities associated with mature and disturbed Balsam Fir forests within the Terra Nova National Park and the assessment of disturbance on these fungal communities and on forest structure.

Her service to the society has been varied, consistently of the highest quality, and always done in a congenial manner. She was elected Councilor for Cell Biology & Physiology (1994/95 - 1996/7), chaired the Travel Awards Committee for IMC6 in 1998, served on the Program Committee (1997-2000) and chaired that committee (1999-2000), and was Secretary of the MSA from 2003-2006. Currently she is overseeing all the Society award activities to make sure that all award selections are decided and prepared in time for the Annual Meeting (no small feat).

**Karen Snetselaar**, Professor of Biology and Director for Biology Graduate Programs at St. Joseph’s University in Philadelphia, has been an active member of the Society since she was a graduate student. She won the award for Outstanding Student Oral Presentation in 1992, and has since served the society as a member of the Research Awards Committee, the Teaching Committee, and the Endowment Committee. She has also served as an Associate Editor of *Mycologia* and been elected to the offices of both Councilor and Treasurer.

Karen has developed a very strong research program in the highly competitive field of *Ustilago maydis* biology while carrying a heavy teaching load at her home institution. She has authored or co-authored numerous articles in this field in outstanding journals, and has been a Co-Pi on NSF research and equipment grants.

In addition to teaching a large number of courses (Light and Electron Microscopy, Plant Systematics, Organismic Biology, Plants and Civilization, Field Biology of Algae and Fungi and Mycology), Karen has been a very successful mentor and has involved numerous undergraduates in her research projects. Many of these individuals have presented the results of their projects at annual meetings of the National Conference on Undergraduate Research. As a result of her efforts, both in the classroom and as a mentor, Karen has received two teaching awards at St. Joseph’s.

**Joey Spatafora** is Professor and Associate Chair of Botany and Plant Pathology at Oregon State University. He is an international leader in mycology, particularly in the realm of molecular systematics and evolution. He has an ongoing project studying fungi in the Clavicipitaceae, inferring...
evolutionary pattern shifts from association with plants, insects, and other fungi. During his recent sabbatical in Thailand, he and his co-workers began work on a worldwide monograph of *Cordyceps*. He has also assumed leadership roles in two highly visible and influential projects, “Deep Hypha” and “Assembling the Fungal Tree of Life (AFTOL)”. In these projects, Joey played instrumental roles in bringing the mycological community together to plan, propose and execute a detailed phylogeny for the Kingdom Fungi. He set an impressive example with these projects in that they reflect a spirit of generosity and inclusiveness. Publications resulting from these projects have contributed immensely to our understanding of the phylogeny of Kingdom Fungi.

Joey is a highly regarded teacher as evidenced by his mycology course web materials, and he a co-author on the new edition of the famed “Alexopoulos” textbook. In addition, he is one of the few mycologists who also teaches a general evolution course that includes fungal examples. His more informal Moldy Thursday discussion group brings together a diverse group of researchers and students interested in fungi, and his special topics courses cover a range of fungal topics as well as phylogenetic analysis methods.

Joey has served the Society in a number of capacities, including stints as Councilor and most notably as local organizer for the 2001 meeting Corvallis. He and his students and postdocs are regular presenters at every MSA meeting. His outstanding early career research was recognized by the MSA, which awarded him the Alexopoulos Prize in 2002.

### Martin-Baker Award Winner: Gabor Kovacs

This award honors two respected teachers of mycology, both of whom had long and distinguished careers in mycology, and both of whom have faithfully served the Mycological Society of America in several capacities: George W. Martin (b. 1886- d. 1971) and Gladys E. Baker.

Gabor M. Kovacs is a postdoctoral/research associate in the Department of Plant Anatomy, Eotvos Lorand University, Budapest, Hungary. This award will allow Dr. Kovacs and his colleagues to examine the trophic strategy of the truffle *Mattirolomyces terfezioides* and to work on a taxonomical revision of closely related North American taxa. The taxonomic study of North American *Terfezia* and *Mattirolomyces* species will be done using anatomical and molecular methods.
Forest Fungal Ecology Research Award Winner: Jordan Mayor

This award supports ecological studies of fungal interactions using innovative approaches to examining fungal systems or interactions of individuals, or groups of fungi, with hosts or substrates in old growth forests or other unique or endangered ecosystems.

Jordan R. Mayor — Ph.D. candidate, Botany Department, University of Florida. Ph.D. advisor, Dr. Edward Schuur. Jordan is studying climate-related controls over belowground carbon allocation to ectomycorrhizal fungi to help predict the fate of soil carbon pools in boreal spruce forest. He will use isotope measurements to investigate the exchange of carbon and nutrients between mycorrhizae and their plant hosts in natural ecosystems.

Rogerson Student Research Award Winner: Benjamin Wolfe

The purpose of this award shall be to support student travel to herbaria and/or field sites to conduct research. Grants are available to undergraduate or graduate students who are members of the Mycological Society of America.

Benjamin E. Wolfe — Ph.D. candidate, Department of Organismic and Evolutionary Biology, Harvard University. Ph.D. advisor, Dr. Anne Pringle. Benjamin is studying the evolution of symbiosis in the genus Amanita by examining its transition to the mycorrhizal habit and patterns of host specialization. He plans to use the award to support extensive collection trips from Maine to Minnesota and from Florida to Texas.

Smith Research Award Winner: Gregory Bonito

The primary purpose of the Alexander H. and Helen V. Smith Research Award is to encourage the study of specimens of macrofungi, fleshy Basidiomycetes and Ascomycetes, collected by Alexander H. Smith and his associates, and which are currently deposited at the University of Michigan Herbarium.

Gregory Bonito: Ph.D. candidate, Department of Biology, Duke University. Ph.D. advisor, Dr. Rytas Vilgalys. Gregory will examine collections of Tuber at the University of Michigan Fungal Herbarium. He plans to study the morphological and molecular characteristics of many taxa of Tuber from the Midwest geographic region, which are underrepresented in his present collection.
Graduate Fellowships: Two MSA Graduate Fellowships of $2,000 each, the Memorial NAMA Fellowship of $2,000 and the Backus Award of $1,000 are awarded annually to promising graduate students in mycology. Applicants are evaluated on the basis of their scholastic merit, research ability and promise shown as a mycologist.

MSA Graduate Fellowship Awards
Andrea Porras-Alfaro is a PhD student at the University of New Mexico, working under the supervision of Don Natvig. Andrea’s interest in mycology began as an undergraduate in Costa Rica, where she worked on the activity of Hypocrea against plant pathogenic fungi. She then earned a M.S. degree from the University of Puerto Rico, working on mycorrhizal fungi associated with the Vanilla orchid, prior to starting a PhD program at the University of New Mexico in 2004. Andrea’s research focus is on the effect of nitrogen deposition on fungal communities in a semi-arid grassland. She is using a sequence-based approach to survey the diversity and distribution patterns of endophytic and soil fungal communities. Andrea has already received a number of awards in recognition of her academic achievements and excellence in research, including a best student poster award at the 2005 MSA meetings. Andrea’s letters of support were certainly compelling. In the words of one referee, “Andrea can be described only in strings of superlatives...she will be one of the best ecological researchers of her generation.”

Cara Gibson is a PhD student at the University of Arizona, working under the supervision of Martha Hunter in the Department of Entomology. Cara is not a typical applicant for these awards, as pointed out by one of her nominators. The bulk of Cara’s training is in entomology rather than in mycology. She was introduced to the fungal associates of insects while working on a master’s degree. The focus of that work was the yeast symbionts of green lacewings, and the results of her research shed new light on the nature of this symbiosis. Cara has continued to work in the challenging discipline of invertebrate symbiosis for her PhD, only now she has moved to a tripartite symbiosis involving the fungal associates of cockroaches and the parasitoid wasps that attack them. She is using culture- and molecular-based approaches to characterize the fungal and bacterial symbiont communities of an encyrtid (parasitic) wasp and its cockroach host, and to test the hypothesis that yeast symbionts are critical for the parasitic wasp. Her referees called her an extremely poised, well-organized and thoughtful speaker, a gifted teacher, and an insightful, passionate and careful researcher.

Memorial NAMA Fellowship Award
Todd Osmundson is the 2007 recipient of the NAMA Memorial Award. Todd is a PhD student at Columbia University, working under the supervision of Roy Halling. Todd’s research addresses the question, do obligately symbiotic ectomycorrhizal fungi exhibit dispersal limitation. His approach uses molecular, morphological, and distribution data to address these questions using species of the boletes Tylopius and Pulveroboletus. A practical application of Todd’s research is to allow more accurate assessment of whether current conservation practices, for example, those aimed at the protection of forest plots, are likely to be effective for the long-term maintenance of ectomycorrhizal fungal populations. Like our other fellowship recipients, Todd has a long list of awards and distinctions including a 2004 Clark T. Rogerson student research award from MSA. Todd is “highly motivated...perseverant and dedicated to making the fungi key players as conservation icons” wrote one nominator.

Myron P. Backus Graduate Fellowship Award
Teresita McLenon-Porter is a PhD candidate at the University of Toronto, working under the supervision of Jean-Marc Moncalvo. Teresita’s research is on the “unchassi-
fied” fungal sequences that have resulted in studies using PCR-based methods to survey environmental samples. Teresita’s focus is the novel Group I ascomycete clade that has been found in soil samples by eleven different research groups from North America, Europe and Australia. Teresita’s research has unambiguously placed this novel group between the Saccharomycotina and Taphrinomycotina, and has set the stage for exciting new discoveries about the biology and life histories of these cryptic organisms. Teresita possesses outstanding oral communication, teaching and organizational skills, and has shown tremendous research capability, according to her nominators. She has received an impressive list of awards in recognition of her academic and research excellence, including several awards from MSA.

2007 MSA International Travel Award Winners

These awards are made in support of travel to the First European Mycological Association Meeting being held in St. Petersburg, Russia 17-20 September, 2007. The ad hoc committee this year was chaired by Secretary Cathy Aime. MSA Council approved a motion to award $1800 to three applicants.

Sara Mayer Branco, (University of Chicago, Greg Mueller, Advisor): Is there a serpentine ectomycorrhizal community?

Adam W. Rollins (University of Arkansas in Fayetteville, Steve Stephenson, Advisor): The ecology of myxomycetes associated with North American grasslands

Elizabeth Barron (Rutgers University, Richard Schroeder, Advisor): An applied model for macro-fungi conservation: Fungal management in U.S. national parks

2007 MSA Student Presentation Award Winners

Oral Presentations

Marie L. Davey, with co-authors Akihiko Tsuneda and Randolph Currah. Department of Biological Sciences, University of Alberta, Edmonton. “Morphology and development of Papulaspora sepedonioides Preuss.”

Gretchen Pruett, with co-authors Johann Bruhn and Jeanne Mihail. Division of Plant Sciences, University of Missouri, Columbia. “Native fungal community composition on roots of truffle infected oak seedlings.”

Poster Presentations

Maria Lee, with co-authors Thomas Volk, Chester Cooper and Julie Chandler. Departments of Biology and Microbiology, University of Wisconsin La Crosse, and Department of Biological Sciences, Youngstown State University, Youngstown OH. “Proteomics profiling of dimorphism in Penicillium marneffei, an opportunistic fungal pathogen of humans.”

Tami McDonald, with co-authors Daniele Armaleo and François Lutzoni. Department of Biology, Duke University, Durham, NC. “Epigenetics of the lichen symbiosis.”

**The inaugural O.K. Miller Jr Award:** Sara Branco  
School: University of Chicago  
Supervisor: Greg Mueller  
Presentation: Is there a serpentine ectomycorrhizal community?

**C.J. Alexopoulos Award:** Cecile Gueidan  
School: Duke University  
Supervisor: Francois Lutzoni  
Presentation: Molecular phylogeny of rock-inhabiting fungi (Ascomycota) and evolution of the rock-inhabiting

**E. Butler Award:** Andrea Porras-Alfaro  
School: University of New Mexico  
Supervisor: Donald Natvig  
Presentation: Effect of nitrogen fertilization on fungal communities in semi-arid grassland

**K. Wells Award:** Craig Dunek  
School: University of Wisconsin La Crosse  
Supervisor: Tom Volk  
Presentation: The Incidence Antifungal Drugs from Fungi

**W.C. Denison Award:** Hannah Reynolds  
School: Duke University  
Supervisor: Rytas Vilgalys  
Presentation: Competitive ability of *Scorias spongiosa*

**A Barksdale-J.R. Raper Award:** Huzefa Raja  
School: University of Illinois at Urbana Champaign  
Supervisor: Carol Shearer  
Presentation: The Latitudinal and Habitat Distribution of Freshwater Ascomycetes

**E.S. Luttrell Award:** K. Lindsay Higgins  
School: University of Utah  
Supervisor: Phyllis D. Coley & Thomas Kursar  
Presentation: Patterns of fungal endophyte abundance and diversity in tropical grasses

**H. Bigelow Award:** Maria-Alice Neves  
School: City University of New York  
Supervisor: Roy Halling  
Presentation: *Phylloporus* revisited: a new story from the gilled bolete

**J.M. Trappe Award:** Paul Trusty  
School: Montana State University  
Supervisor: Cathy Cripps  
Presentation: Ectomycorrhizal fungi of whitebark pine seedlings on burned and adjacent unburned forests in regard to restoration strategies

**M. Barr-Bigelow Award:** Sandra Woolfolk  
School: Mississippi State University  
Supervisor: Richard Baird  
Presentation: Fungi associated with imported red fire ants *Solenopsis invicta* Buren and mounds in Mississippi

**F.A. Uecker Award:** Suzanne Joneson  
School: Duke University  
Supervisor: Francois Lutzoni  
Presentation: Discovering differentially regulated genes in the lichen symbiosis.
Rock Creek Park BioBlitz

Rock Creek Park (RCP), located in Washington, District of Columbia, was the site of a 24-hour BioBlitz held from noon May 18th to noon May 19th, 2007. The National Geographic Society (NGS) and the National Park Service (NPS) jointly sponsored this first BioBlitz in a series of ten at NPs located in urban areas. The next BioBlitz is scheduled for 2008 at the Santa Monica Mountains National Recreation Center in California. The primary goal is to increase public awareness of the biodiversity that exists in urban settings.

Rock Creek Park was established in 1890 as one of the first National Parks after Yellowstone, Sequoia, General Grant and Yosemite. It spans 1,755 acres in the center of Washington, D.C. and 1,000 acres scattered throughout the northwest district. Scientists and naturalists joined the general public in an attempt to find and catalog as many species as possible within the parks boundaries. More than 800 participants were involved. Some were busy turning over logs and rocks to find reptiles and amphibians, others had their eyes and ears open to catch sight of a bird or to hear its song, traps were set throughout the park to catch insects and mist nets for birds by day and night, still others sampled aquatic biota from the creek that gives the park its name. Ground sites were scanned for fungi, lichens, liverworts and mosses, the latter home to tardigrades. Soil was sampled to find bacteria previously unknown to science. Scientists explored the tree canopy to search for tiny protists known as myxomycetes, also collecting any fungi or other cryptogams. So far, approximately 700 species have been tallied, with more to come as scientists work in their laboratories to culture field-collected samples.

This article will highlight the tree canopy biodiversity team and the organisms they study. All members of the team are associated with the University of Central Missouri and included Principal Investigator and myxomycologist Dr. Harold W. Keller; botanist and biostatistician Dr. Joseph Ely; photographer Robert Breshears; former UCM student Kenneth Snell; current students Courtney Kilgore, Sydney Everhart, and Angela Scarborough. More recently, Snell and Keller (2003) pioneered research documenting the vertical distribution of corticolous myxomycetes in the tree canopy of the Great Smoky Mountains National Park (GSMNP). Currently, Dr. Keller and his students work at Ha Ha Tonka State Park in Missouri, the Daniel Boone National Forest in Kentucky, and the GSMNP in Tennessee and North Carolina. Students are given opportunities to participate in activities such as the BioBlitz at RCP, the first lichen Bio-Quest in GSMNP (Keller 2005a), and outreach educational activities with middle school life science students in Warrensburg, Missouri (Keller 2005b).

Myxomycetes, tiny protists that exhibit animal and fungal characteristics, are found on ground sites as well as in the tree canopy. *Diachea arboricola*, a new species described by Dr. Keller and undergraduate student Melissa Skrabal, was first found July 4, 2000 in the canopy of a white oak tree in GSMNP (Keller et al. 2004). This year at RCP the team searched ground sites for myxomycetes but conditions were extremely dry and thus only three species were collected. The team was more successful with bark samples collected from living trees because myxomycetes can be cultured in the laboratory from various resting stages on the bark. Thirteen trees representing six species were climbed during the BioBlitz and include: *Carya glabra*, *Fraxinus americana*, *Liriodendron tulipifera*, *Prunus serotina*, *Quercus alba*, and *Quercus velutina*. To date 18 Myxomycete species have been found in culture from *F. americana*, *L. tulipifera*, and *Q. alba*.

Climbers used the double rope climbing technique when sampling bark from the trees. This allows the climber to stop at specified intervals in order to collect samples. Climbers can also advance higher in the canopy by untying the climb-
ing rope, throwing it over a higher limb, and then retying (Keller 2004). Kenny Snell reached a height of 27 m in an *L. tulipifera* while the other climbers generally sampled up to 18 m in the canopy.

Photographers snapped pictures from ground level and also from the tree canopy by utilizing an aerial work platform, or “cherry picker.” A television crew from NGS shot footage of our tree climbers taking bark samples in the tree canopy that will air on Public Broadcasting Service the first week of August as Episode 236 as part of the “Wild Chronicles” series. National Geographic Television also filmed the UCM Tree Canopy Biodiversity Team in the GSMNP in July as part of a featured program in the “Wild Chronicles” series to air later this year on the Public Broadcasting System.

Safety was our number one concern therefore observers were excluded from the work zone. Climbers interacted with the public when not in the trees. Before her first ascent into the tree canopy, climber Angela Scarborough took the time to teach children about the knots used in climbing. Courtney Kilgore and Sydney Everhart demonstrated the technique used to send a slick-line into the canopy via the “Big Shot”, a 1.8 m tall slingshot. Observers were allowed to watch the climbers saddle up and tie their knots, but were asked to keep a safe distance while actual climbing took place. A front page picture of Sydney Everhart climbing a white oak was featured in the Metro Section of the Washington Post released on May 19th, 2007.

In the field, it is not always easy to identify tree species due to the variation in bark and leaves as well as the tendency for some species to hybridize such as in the oaks (Brown & Kirkman 1990). There was one incident during the BioBlitz when our team was stumped by two trees that had flaky bark like a shagbark hickory and leaves more like the red oaks. In order to properly identify trees, a visual algorithm that is part of an electronic field guide developed by researchers at the Smithsonian Institution, the University of Maryland, and Columbia University was used to compare the bark and leaves of the tree in question with others that are similar in the database. Along with the electronic field guide, the tree vouchers were analyzed by other scientists in the park. In the end, the two trees were identified as *Q. alba*.

This experience was valuable for the purpose of research and public interaction and awareness. I’ll never forget the look of surprise and delight on the faces of the children who were astounded to see a biologist in the trees! It was our chance to show young people how fun science can be and perhaps some of them were inspired to pursue their own careers in science.

Our research is financially supported by the National Science Foundation, Division of Environmental Biology, Biodiversity Surveys and Inventories, Awards DEB-0079058 and 0343447, Discover Life in America 2001-26 and 2002-17, and National Geographic Committee for Research and Exploration 7272-02.

**Literature Cited**


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Ascension Island (7° S, 14° W) is a small (total area of only 98 km²), isolated island in the South Atlantic, located approximately 1,600 km from the coast of Africa. The island is a dependency of the British overseas territory of Saint Helena, which is situated 1,287 km to the southeast. Ascension Island is the tip of a 3,200 m high, 60 km wide shield volcano, and the oldest exposed rocks date to only about 1 million years ago. When the island was discovered in 1501, it was almost entirely barren, with a sparse flora consisting of only about 20 species of vascular plants. Charles Darwin, homeward bound on the H.M.S. Beagle, visited Ascension Island in July of 1836. He was not very impressed with the place, noting that it was entirely destitute of trees. However, even before Darwin’s visit, large-scale introductions of many different types of plants were already underway. Over the course of the next 150 years, several hundred species from various parts of the world were introduced to Ascension Island, and the general aspect of much of the island changed. What is best described as a cloud forest now exists on the very highest peak (Green Mountain at 859 m), and modest forests of planted trees occur at a few localities. Introduced mesquite and prickly pear cactus have spread throughout many lowland areas. Indeed, Ascension Island represents a good example of “terraforming,” as the term might be used in a terrestrial context.

Because relatively few scientific surveys have been carried out on Ascension Island, many elements of the biota remain understudied or even unknown. In early March of 2007, Steve Stephenson (University of Arkansas) had an opportunity to visit the island. He was accompanied by Tom Smith (Southern Arkansas University) and David Lawrence (J. Sargeant Reynolds Community College, Virginia). The primary purpose of their visit was to obtain a body of data on the eumycetozoans (Stephenson) and terrestrial algae (Smith) present on the island, as well as to study the dendroecology of trees (Lawrence) that have been planted at various localities. All of the major types of habitats present on Ascension Island were examined, and several of these yielded field collections of myxomycetes. The most productive habitats were rocky hillsides with scattered individuals of prickly pear cacti (where fruitings of *Badhamia gracilis* were found on the lower surface of old and decaying cactus pads that had fallen to the ground) and a planted forest of Norfolk Island pines. In addition, samples of various types of dead plant material were collected for laboratory isolation of all three groups of eumycetozoans (dictyostelids and protostelids along with myxomycetes). The laboratory component of the project is not yet complete, but moist chamber cultures prepared for myxomycetes have been relatively productive.

—Steve Stephenson
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On August 29th 2005 Hurricane Katrina made landfall on the northern Gulf Coast of the United States. It was the costliest and one of the most deadliest hurricanes in the history of the United States. Katrina was the eleventh tropical storm, fifth hurricane, third major hurricane, and second Category 5 hurricane of the 2005 Atlantic season. It was the sixth-strongest Atlantic hurricane ever recorded and the third-strongest hurricane on record that made landfall in the United States.

Katrina formed over the Bahamas on August 23rd, 2005 and crossed southern Florida as a moderate Category 1 hurricane, causing some deaths and flooding there, before strengthening rapidly in the Gulf of Mexico and becoming one of the strongest hurricanes on record while at sea (Category 5). The storm weakened before making its second and third landfalls as a Category 4 storm on the morning of August 29th in southeast Louisiana and at the Louisiana/Mississippi state line, respectively.

At least 1,836 people lost their lives in Hurricane Katrina and in the subsequent floods, making it the deadliest U.S. hurricane since Hurricane Okeechobee in 1928. Katrina is estimated to have been responsible for $81.2 billion in damage, making it the most costliest natural disaster in U.S. history.

The most severe loss of life and property damage occurred in New Orleans, Louisiana where the levee system catastrophically failed in 53 different places, in many cases hours after the storm had moved inland. With nearly every levee in metro New Orleans breached as Hurricane Katrina passed east of the city, 80% of the city and many areas of neighboring parishes were flooded.

Katrina caused severe destruction across the entire Mississippi coast and into Alabama, as far as 100 miles from the storm’s center. The storm surge devastated the Mississippi Gulf Coast cities of Waveland, Bay St. Louis, Pass Christian, Long Beach, Gulfport, Biloxi, Ocean Springs, and Pascagoula.

Here at the Department of Coastal Sciences at the Gulf Coast Research Laboratory campus of The University of Southern Mississippi we were right in the path of Katrina. The campus was hit by a 26’ storm surge that devastated all the buildings near the water and several at higher elevations. Of those buildings not destroyed, all but one was flooded. In all we sustained approximately $50 million in damages to buildings, contents, collections, research and intellectual property as a result of storm surge and winds. With respect to specific facilities, the marine education center and aquarium, the computer and IVN lab were all totally destroyed; the striped bass

Continued on following page
facilities, aquatic toxicology lab, marine aquaculture operations and native salt-marsh plant greenhouse and herbarium collection took hits ranging from serious damage to total loss. The library sustained about 4’ of muddy storm surge and as a result we lost many of our books and journals.

Since the storm the Campus has made astounding progress towards recovery, much of it with help from volunteers and emergency grants. Restoration of the Fisheries, Research and Caylor buildings and the Gunter Library, all flooded by the 26-plus-foot storm surge, is in the final stages. Faculty, researchers and staff have set back up their offices and laboratories that are housed in those buildings. Modular units on the GCRL and Cedar Point campuses are providing temporary replacement for classrooms lost at GCRL and at the J.L. Scott Marine Education Center and Aquarium.

As part of our Hurricane recovery efforts, Dr Marion Kyde generously donated her complete series of Mycologia and Mycotaxon from Volume 1 to the current date to Gunter Library here at GCRL. I would like to take this opportunity to thank Dr Kyde for this wonderful donation. My students and I are totally indebted and very grateful to Dr Kyde for her generosity. Not only does this make mycology more accessible to my mycology students, it makes mycology more prominent to the rest of the campus. Dr Kyde, we THANK YOU!

Appreciation and acknowledgements are also due to Dr William Hawkins, Executive Director of GCRL, for paying the shipping costs associated with the donation of these journals.

For more information and photos on the effects of Hurricane Katrina on GCRL and our recovery process, please visit:
www.usm.edu/gcrl/katrina/ and
www.usm.edu/gcrl/katrina/photos.php

—Jinx Campbell
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Fifth Congresso Brasileiro de Micologia

The 5th Congresso Brasileiro de Micologia will be held from 12th -16th November, 2007 in Recife, Pernambuco, in northeastern Brazil. The event is being organized by the Departamento de Micologia of the Universidade Federal de Pernambuco (UFPE), with support from the Sociedade Brasileira de Micologia (SBMy) and other Brazilian institutions. This will be a great opportunity to meet Brazilian mycologists from all regions and to attend workshops and conferences that will cover different aspects of Brazilian mycology (e.g., medical, environmental, taxonomy and phylogeny). Dr. Leonor Costa Maia (UFPE) is the president of the organizing committee and Dr. Maria Auxiliadora de Queiroz Calvacanti (UFPE) is the president of honor. Among the participants from outside Brazil are Dr. Nelson Lima (Micoteca, Universidade do Minho, Portugal), Dr. David Hawksworth (Universidad Complutense de Madrid, Spain), Dr. Barbara Thiers (NYBG, USA), Dr. Leif Ryvarden (Oslo University, Norway), Dr. Roy Halling (NYBG, USA) and Dr. Arthur Schü, ler (Genetics Institute, Ludwig-Maximilians Universität München, Germany). For more information, visit www.5micol.com.

—Maria Alice Neves
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MYCOLOGICAL NEWS

Studying the Myxobiota of the Amazon Forests

Have you had the chance of visiting the Amazonian lowland tropical forest yet? If not, you might start considering looking for funds to do research in this part of the world. The mycobiota of these forests is highly unexplored, especially when it comes to the role of fungi in these ecosystems. During a field trip over the Los Amigos Biological Station (a nice field facility administrated by ACCA, Asociación para la Conservación de la Cuenca Amazónica in southeastern Peru) a survey for myxomycetes and dictyostelids was carried out by Carlos Rojas from the University of Arkansas. This initiative, financed by Amazon Conservation Association (www.amazonconservation.org), is part of the NSF-funded PBI project on Eumycetozoans based at the University of Arkansas in Fayetteville (slimemold.uark.edu). It has also had invaluable help from Dr. Steven L. Stevenson, Adam Rollins (University of Arkansas), Dr. John Landolt (Shepherd University, WV) and Dr. Magdalena Pavlich (Universidad Peruana Cayetano Heredia, Lima, Peru). The purpose of this effort is to evaluate differences in species composition among different forest treatments within one type of tropical life zone.

As part of the implementation of this project Daniella Biffi, a Peruvian student from the Universidad Ricardo Palma in Lima, was involved in the first trip to the study area in March 2007. Daniella has also served as the primary contact for the long process that is required for the issuing of collection and export permits as well as an organizer for the second field trip to be carried out during the coming fall. Fortunately, the logistics of this project have been efficiently organized by the ACCA staff in Puerto Maldonado.

The trip to Los Amigos is quite an adventure. After landing in Lima, one has to take another airplane to the capital of the Madre de Dios Department, Puerto Maldonado. This town basically serves as a connection point to get to the biological station. However, between these two places there is a long taxi ride on an unpaved road, a 6-7 hour boat ride up the Madre de Dios River and the landmark of Los Amigos, and a hike up 250 steps that separate the dock and the station. In spite of being tiring, the journey is more than enjoyable. One can see a beautiful spectrum of ecosystems that range from the ice and snow covered highest parts of the Andean range to the lowland seasonal flooded forests in the Amazon basin and a number of different animals and plants that are endemic to this zone.

What makes this area interesting from a myxo-mycolological perspective is that there are limited studies of the group in this part of the world and very little ecological information about the species from these lowland tropical forests. Among the most interesting ecosystems, the seasonal flooded forests and the palm swamps dominated by *Mauritia flexuosa*, represent a wonderful opportunity to study the dynamics of eumycetozoans in near-anoxic conditions.

So far, the primary forest has accounted for the majority of the species found in the field, followed by the secondary forest, the flooded forests (including the palm

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swamps) and the human-disturbed areas. We are excited to see if the same pattern will be found during a “dry” (non-rainy) season field trip in the near future, as well as if the pattern is also observed with the substrate samples that we are still studying in the laboratory. The same can be said about two of the members of the genus Ceratiomyxa (protostelids with ecological equivalency to myxomycetes, which show an almost exclusive Neotropical distribution). The two species were commonly found during the rainy season and showed high affinity for moist substrates. Interestingly, in Costa Rica, where all species occur too, they seem to show a phenological pattern associated with macro environmental conditions.

These studies are basic in nature, but important from a functional perspective. With them, we can continue understanding the dynamics and role of microorganisms in natural ecosystems. The arrangements, including the permits, are ready and the field book is already packed. At this time we are only waiting for the next field trip to take place, so we can continue studying the myxobiota of the Amazon forests.

—Carlos Rojas
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The ‘button mushroom’, Agaricus bisporus, has been accepted for whole-genome sequencing in FY 2008 by the US DOE Joint Genome Institute. This species is the only member of the Agaricaceae thus far accepted for sequencing, and joins a select group of other homobasidiomycete sequencing targets. Agaricus and related genera most often are adapted to exploit leaf litter and related humic components of soils as substrates, unlike ectomycorrhizal and wood- and dung-inhabiting basidiomycetes that have been sequenced. Our proposal has been coordinated at different times by Kerry Burton, Richard Kerrigan, and Michael Challen, and includes PIs from several different countries. Further information is available at www.warwick.ac.uk/go/agaricusgenome and at www.jgi.doe.gov/sequencing/why/CSP2008/abisporus.html.

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—Mike Challen
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Agaricus bisporus Accepted for Whole-Genome Sequencing

Some of the beautiful eumycetozoans found during the first trip to Los Amigos Biological Station in March 2007.
A New Web Page About Tropical Fungi

Hongos Del Parque “El Haya”: Armando López and Juventino García, mycologists and researchers at the Instituto de Genética Forestal (Forestry Genetics Institute) at the Universidad Veracruzana in Xalapa, Veracruz, México, invite you to visit their blog about fungi from the “Parque Ecologico El Haya;” an ecological park with a high mycological diversity. On this site you will find hyphomycetes, ascomycetes, agarics, gastromycetes, rust fungi, myxomycetes, etc. with macro and micro descriptions and many photos. Many species are recorded for first time from Mexico. You can visit us at: hongosdelhaya.blogspot.com/. Comments are welcome.

—Armando López
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Common Mushrooms of the Talamanca Mountains, Costa Rica


This field guide is exceptional in its layout and beautifully illustrated. It was not designed by the authors to be a comprehensive picture guide to the fungi of Costa Rica, but rather an introduction to the diversity of macrofungi found in the tropical montane wet forests of Costa Rica. The images of the fruiting bodies are attractively presented and the inclusion of differential interference contrast bright field microscope images of basidiospores and cystidia make a unique and very helpful addition to the identification manual. Specifically the authors envisioned that this guide would be used by mycologists, conservation biologists, land managers, educators, naturalists, nature tour guides and others interested in the scientific study of macrofungal diversity in the wet montane forests of Costa Rica. The information presented in this identification guide provides an important scientific resource for anyone interested in Neotropical mushrooms and boletes and, as the authors point out, is complementary to two popular macrofungal field guides for Costa Rica published by INBio [Mata (1999) and Mata, Halling & Mueller (2003) — Macromonos de Costa Rica, Vol 1 & 2 (www.inbio.ac.cr/editorial)].

The main contents of the book include an Introduction, Recommendations for collecting mushrooms for scientific study, Key to included families, keys to genera and species for each of the families treated (Amanitaceae, Boletaceae, Cantharellaceae, Cortinariaceae, Entolomataceae, Hygroporaceae, Lepiotaclaceae, Russulaceae, Strophariaceae, and Tricholomataceae), Literature cited, a section on Specimen vouchers, Glossary and Index to scientific names found in this treatment. The authors also provide an interesting preamble with the heading “The Mushrooms in this

Continued on following page
and often fragmented corridors in the high cloud forests due to habitat destruction and restricted gene flow. In a subsection titled “Documenting the Diversity of Costa Rican Macrofungi” the authors provide a brief historical review of published work on the diversity of Costa Rican macrofungi. They summarize the evidence that indicates there is a high degree of endemism (28-100%) for ectotrophic montane macrofungi associated with Quercus in Costa Rica. They also state that the probability of finding new taxon in these ecosystems remains high, since over a decade of intense collecting by these two scientists and their many professional colleagues, reveal that they were unable to register a decline in the rate at which novel taxa were being found each year. Because they have documented just over 400 species but they believe that at least a 1,000 species of Agaricales will eventually be discovered in the Costa Rican Quercus forests, their hypothesis about discovering large numbers of new taxa seems reasonable. In a discussion of “Goals of this Book and the Targeted Audience” the authors reiterate that they have focused their presentation on the conspicuous and commonly encountered genera and species that are found in the wet montane oak forests in the Talamanca Mountains. Their intentions were to make the book a useful tool in helping people identify these common macrofungi. As a final section in the introduction, the authors provide two lists of mushroom and bolete names, one for what they call the putative tropical montane Quercus-dominated forest endemics which consists of 36 taxa, and the second list covers 67 species that are thought to form ectomycorrhizae with species of neotropical Quercus.

The section on “Recommendation for Collecting Mushrooms for Scientific Study” provides the serious reader with the tools to learn how to contribute to the biodiversity research on macrofungi in Costa Rica. These guidelines are so well written and informative they could be used anywhere by a dedicated naturalist determined to document species in their area. The authors cover in detail how to prepare specimens for scientific study (how to make spore deposits under various conditions, how to photograph specimens to provide maximum information, how to take notes on freshly collected samples). The checklist for taking notes on features of mushrooms and boletes is an excellent guide for the person dedicated to making valuable voucher specimens. The authors also provide excellent advice on preserving tissue samples for later DNA extraction and then how to dry and preserve the main collection under tropical conditions. Due to the typically high humidity in tropical ecosystems, this advice on using a little care in specimen handling is necessary for making collections that provide maximum usefulness to the research scientist for later identification. Some final remarks about producing quality collections for scientific study under “General Reminders” are also valuable pieces of advice for would-be parataxonomists interested in studying macrofungi.

The keys to families, genera and species are clearly written and use macro and microscopic features that allow use of the microscope to make accurate identifications. However, the real value in this field guide is the way in which the species are presented. Each species, with author(s) and complete bibliographic citation, is described and illustrated in detail on a single page or on two facing pages including the macro- and microscopic description, substrate, host distribution and a commentary section that is used to help the reader compare similar looking species. At least one high quality color image for each species is displayed with the description, typically in a 7 x 5 cm format, however, a few images are much larger (11.5 x 9 or 11.5 x 15 cm). Some species are illustrated with more than one color image, usually to show color variation of the fruiting bodies or some fine detail on the stipe or pileus that is not easily discernible from the portrait image. The images that accompany each species description are sharp, clear, and with accurate colors. When a microscopic feature is important for precise identification of a species, the authors include sharply focused, detailed DIC images of basidiospores and cystidia. In several cases scanning electron microscopic images of basidiospores are also presented along with the DIC images, to provide the reader with a clear understanding of the ornamentation type on the basidiospores. Thirty-three of the boletes and mushrooms in this guide were recently described from Central America or northern South America, by one or both of the authors, sometimes with other collaborators, and these color images are the first of these species in print (although color images of most if not all can also be found at www.nybg.org/bsci/res/hall/index.html as well).

The addition of a Glossary will be helpful for most users. When one needs to refresh their memory about what a basidioma is or what atomate means, the glossary provides clear concise definitions. The Index to Scientific Names seems to be thorough with species indexed to every page they appear on, in addition to the page where they are described. A final touch of convenience is the printed image of a 15 cm ruler on the back cover of the book, nothing to lose, it is always with you and your identification manual. If you have not had the pleasure of meeting Drs. Halling and Mueller, there are two brief biographies and portrait style images of these hard working mycologists in the field at the end of the book.

If you are going to study macrofungi of neotropical forests that have Quercus species, or if you are making a trip to Costa Rica and will be hiking in the montane forests of that country, then this manual will be invaluable to you. If you are trying to learn how to study macrofungi, this guide will be invaluable to you. If you have an interest in neotropical mushrooms, boletes and chantarelles, this book will be invaluable to you. In fact, as the authors suggest in their introductory remarks about who might find this book useful, I wholeheartedly agree that “mycologists, conservation biologists, land managers, educators, naturalists, nature tour guides and others” certainly will find this field guide invaluable. This 23 x 15 cm, ring bound, hard-plasticized (water proof) covered identification manual is one of the best examples of how to construct a field guide on my shelf at the present time.

— Timothy J. Baroni
State University of New York College at Cortland
baronlt@cortland.edu
Checklist of Fungi in Panama — Preliminary Version


This first issue of a new journal presents a preliminary checklist of the 1,810 species of fungi including lichenized fungi reported from Panama. The checklist is primarily in English although the abstract is translated into Spanish. A synopsis of collecting activities in Panama summarizes the history of early expeditions of which there were relatively few, almost all by non-Panamanians. The checklist of fungi is arranged by major group. Each entry consists of the scientific name of each species, information about its ecology including host and distribution within Panama, and references for that entry. An index adds to the usefulness of this work including a list of the 51 species and varieties described as new from Panama. The colored plates show the beauty and diversity of these fungi from the Myxomycota through the Ascomycota and Basidiomycota. Given the diversity of vascular plants in the country, specifically 9,500 species, Dr. Piepenbring predicts that there may be as many as 50,000 species of fungi in Panama. This well-documented checklist represents a good baseline on which Panamanian mycologists can build in developing knowledge of fungi in their country. Acknowledged as a first account, the author suggests that very little is known about the fungi of Panama. This active mycologist and her students will surely seek to work toward rectifying that situation.

— Amy Y. Rossman
Systematic Mycology & Microbiology
USDA-ARS
Amy. Rossman@ars.usda.gov

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MYCOLOGIST’S BOOKSHELF

Recently Received Books


Previously Listed Books


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TAKE A BREAK

A Large, Multicellular, Albonigra-Bicolor, Almost Fully Fungal Puzzle

Juliet Pendray is a member of the Vancouver Mycological Society (www.vanmyco.com). She writes fungal crossword puzzles, primarily for the amusement of herself and also as a tool for her own education. She hopes the Inoculum readership will enjoy the following multi-myco-topic crossword. If you have feedback on this or past crosswords, please email Juliet at aloe@netrover.com.

ACROSS
2. Action of fungal enzymes on a surface
9. This structure comes in Arum or Paris varieties
14. idia, a piece of thallus used for asexual reproduction, typical of lichens
16. NAMA’s Mycophool Foray 2008 locale
17. Shape of Auricularia
18. Smaller or fewer
21. (3 words) When the Roman villagers failed to propitiate Robigus, rust fungi destroyed the feed grain and flax crops that year, thus many citizens were forced to wear ____ every day
24. Some state parks list a bag ______ for different mushroom species
25. Pure or sterile, as in a culture
26. (prefix: Latin) Rough, i.e. a cap surface
27. Geotrichum candidum causes ______ rot in oranges and peaches
28. e.g. Interwoven aggregation of mycelia
31. Having a stem
33. Imitate
35. (Latin) to fall or drop
38. (2 words) “I lost my chance with her: I was so nervous I said ‘Tricholoma nudum’ instead of ‘Clitocybe nuda’ … and she turned away. I know, ______.” (see #40 across)
40. (2 words) One groaner, e.g. #38 across
41. Flagella allow some spores to be independently _____
44. Boletus zelleri usually stains this color when bruised
45. Halophile hangout
46. (prefix) Rust spore
47. Internal compartments or “fingers” in a mitochondrion
49. e.g. Cream of chanterelle and Cream of huitlacoche
50. Knowledge or understanding
51. Popular way to cook large slices of T. magnivelare
53. Nematoctonus and Arthrobotrys do this to prey using sticky knobs or nets
56. Accessory, usually for men, rarely worn on a foray
59. Siberian Amanita eaters
61. According to ancient mythologies, and traditional Bedouin or Moroccan truffle hunters, this causes some mushrooms to fruit
63. Often found amongst paraphyses
65. Penetrating haustorium
66. General length of a Collybia radicata stipe
68. Forest nurse
69. What Napoleon (whose conquest of Malta led to declining use of the “Maltese Mushroom”) was ‘ere he saw Elba
71. (2 words) Fruiting time for many fungi
74. April 25 fungal-themed festival
78. A Sphagnum-loving Arrhenia species, sometimes considered an Omphalina or Clitocybe
82. Medicinal birch conk
83. Licorice flavored Clitocybe species
84. A hair-like organelle
85. Consumed, as at a meal
86. Phaeolipiota aurea color
89. (abbr.: Latin) Egg
91. General size of Mycenas
94. Amanita vaginata
96. Cremesinus, hysginus, cruenta or lateritius
98. Ethnolichenological substance
99. (abbr.) Common malt agar media
101. Cremesinus, hysginus, cruenta or lateritius
102. Squirrels are audibly ______ when you dig at their truffle holes
103. Mammaloid
104. These create specific habitat for certain ascomycetes, including morels
105. (2 words) Tawny pileus
106. This will help you to avoid getting lost on a foray
107. Star shaped cluster of sharp crystals in a thallus
109. Siberian Amanita eaters
110. (2 words) Tawny pileus
111. This will help you to avoid getting lost on a foray
112. Star shaped cluster of sharp crystals in a thallus

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TAKE A BREAK

DOWN

1. Lamellae
2. Animal body area, home to trichomycetes
3. *Saccharomyces cerevisiae* is used to make this kind of beer
4. Hydrophobic lichen group
5. (suffix) Denotes a subphylum in mycological classification
6. (abbr.) Publishers of Mycophile
7. Cellular slime mould pseudoplasmodium structure
8. A long time, e.g. a length of time fungi have been around
9. African fermented finger millet beer
10. Common term for shelving polypore fungi
11. Fruiting body
12. “Pea truffle” genus
13. Dry dispersal “fungal seed”
14. Common term for a ustilaginomycete
15. Woodwasp clade mutually symbiotic with *Amylostereum* fungi
16. Enjoyed by thermophilic fungi
17. After fungi destroyed the coffee crop in the 1870’s, Ceylon converted to this plant
18. Acarid
19. First word of *Rhytisma*’s common name
20. They say Reishi _______ chi imbalance
21. Hyaline
22. (abbr.) Yeast and mold, as opposed to bacteria, grow best on foods with low _______, the measure of relative availability of water present in a substance
23. Original truffle hunters
24. (2 words) One female flower part made from one or more carpel(s)
25. Common name for *Wallenia sebi*, a brown, single celled, aerobic fungus found growing on dried and salted fish.
26. (2 words) A wood decay fungus that attacks trunk bases or log ends
27. (Chinese) _______ ngo, *Auricularia polytricha*
28. (abbr.) PNW newsletter on botany and mycology published by Adolf Ceska
29. e.g. an elongated portion of a foliose lichen thallus
30. Spider Monkey _______ Fungus is used by the fungiphilic Venezuelan Hoti people
31. This grain-disease-causing fungi group is composed of *Tilletia* and *Neovassia* genera
32. Shape of some mushroom caps
33. A rust fungi’s germ tube reacts thigmotropically when it reaches a _______ on a plant surface
34. General stage at which a fruiting body releases its spores
35. First plant, singular
36. Ratio of the circumference to the diameter of e.g. a mushroom cap
37. A wood decay fungus that attacks trunk bases or log ends
38. Nickname of the 5300-year-old fungus toting “Iceman”
39. (Latin) Snow
40. (Abbr.) This baby-killing syndrome was thought to be caused by the interaction between mattress fumes and household fungi
41. (abbr.) American department charged with catching sellers of mushrooms deemed illegal
42. When fungus was found growing on its windows and corroding its metal & plastic parts, the world was concerned
43. (Samoan) Phosphorescent fungi on wood
44. (Samoan) Phosphorescent fungi on wood
45. Full, as in after a meal of mushrooms
46. Buller’s _______
47. A *Morchella* species
48. A conk genus containing several species which are used medicinally
49. The gill equivalent in *Cantharellus* is shaped like a fold or _______
50. A *Morchella* species
51. Common term for bird’s nest peridioles
52. Making neurological history, Phineas _______ acquired and survived a fungal infection of the brain after an explosion sent a spike through his skull in 1848
53. *T. magnivelare* is fond of this soil horizon

Except for personal use, this puzzle may not be reproduced without permission — Juliet Pendray (aloe@netrover.com).
TAKE A BREAK

Fantastic Photo Fiesta

This month’s photos were submitted by Mo-Mei Chen, University of California, Berkeley, mmchen@nature.berkeley.edu.

Cookery Corner

This month’s recipes were submitted by Mo-Mei Chen, University of California, Berkeley.

mmchen@nature.berkeley.edu

Shrimp, Peas, and Oyster Mushrooms

Ingredients:
- 2 teaspoons finely chopped ginger
- ¼ cup finely chopped green onion
- 2 egg whites
- ½ cup rice vinegar
- 2-3 tablespoons oyster sauce
- 1 pound shrimp
- 8 ounces green peas
- 8 ounces Pleurotus ostreatus, oyster mushrooms

Stir-fry shrimp and ginger in a hot oiled wok for a minute or two. Quickly add egg white, oyster mushrooms, green onions, rice vinegar and corn starch. Stir-fry for another 2-3 minutes until shrimp turn white. Add green peas and oyster sauce, and stir-fry until the peas are cooked.

Shredded Chicken with Cauliflower mushroom

Ingredients:
- 8 oz chicken breast
- ½ lb cauliflower mushroom
- ½ lb ripe tomatoes
- ½ oz snow peas
- 2 oz egg whites
- 1 tablespoon cooking oil

Marinade:
- 2 teaspoons water
- 1 teaspoon cornstarch
- ½ teaspoon salt
- ½ teaspoon pepper

Sauce:
- 1 cup water
- 1 teaspoon salt
- ½ teaspoon cooking wine
- ½ teaspoon sesame oil

Shred chicken breast into thin strips and mix thoroughly with marinade and marinate for 30 minutes. Blanch in boiling water until cooked. Wash cauliflower mushroom flabellae-shape fruiting body and tear into small pieces. Wash and remove skin and chop into small cubes. Heat wok, then add the oil. Add cauliflower mushroom and tomatoes then gently stir-fry. Add sauce and bring to the boil. Beat the egg whites and stir in. Immediately add snow peas, mix and continue to stir-fry. Add pre-cooked chicken and mix thoroughly.
Six Postdoctoral Positions — Fungal Evolution

We seek six Ph.D. level scientists to participate in a multi-investigator project to resolve the origins of major fungal lineages using genomic and morphological data (for a description of the “Assembling the Fungal Tree of Life” project see www.aftol.org).

Four positions are available in the area of fungal phylogenomics. We seek candidates with experience in molecular evolutionary genetics, including DNA sequencing methods, comparative genomics and phylogenetic analysis of fungal genome data. One position, with focus on basal fungal lineages, is located in the Botany Department, University of British Columbia, Vancouver, Canada (contact M. Berbee, berbee@interchange.ubc.ca). Two positions are in the Biology Department, Duke University, Durham, NC (contact R. Vilgalys, focus on basal lineages fungi@duke.edu, or F. Lutzoni, focus on lichenized ascomycetes flutzoni@duke.edu). One position, focusing on basal Basidiomycota (rusts and smuts) is located at Louisiana State University AgCenter (contact Cathie Aime, maine@agcenter.lsu.edu).

The other two positions in fungal comparative biology/structural evolution are located at the Department of Plant Biology, University of Minnesota, St. Paul (contact D. McLaughlin, davem@umn.edu) and the Department of Biological Sciences, Louisiana State University (contact M. Blackwell, mblackwell@lsu.edu).

These postdocs will work closely with other labs to expand the AFTOL structural database (http://aftol.umn.edu), and should have interests in comparative biology/structural evolution and phylogenetic analysis. Previous experience working with a diversity of fungal organisms is desirable for all positions. All positions offer competitive postdoc salaries with health benefits, and an appointment period of 2 years plus the possibility of renewal. If interested, please send a cover letter, vita and names of references to any or all of the contact persons listed above. Applications will be considered until October 1, 2007.

—Rytas Vilgalys
Biology Dept., Box 90338
Duke University
Durham, NC 27708

Biologist Position in Mycology Program of ATCC

Education Requirements — B.S. degree in biology, mycology or microbiology is required and M.S. is preferred.

Experience and Skills Requirements — A minimum of one year laboratory experience of microbiology is required. Work experience with DNA, RNA, and protein is preferred. Knowledge of and experience in fungal/yeast research are highly desired. Be able to competently conduct and manage multiple laboratory-based projects in a dynamic, teamwork environment. Also required is the competency in using contemporary computer programs and software.

Faculty Positions in Plant-Related Microbiology

The Institute of Plant and Microbial Biology, Academia Sinica, Taipei, is enthusiastically inviting applications for faculty positions in the research areas of microbiology with preference for plant-microbe interactions and plant-related microbiology. These positions are at the levels of Assistant Research Fellow, Associate Research Fellow and Full Research Fellow (equivalent to Assistant Professor, Associate Professor and Full Professor in universities). Excellent facilities and starter grants will be provided for these positions. For details of the Institute and Academia Sinica, please visit the website at http://ipmb.sinica.edu.tw/. Applicants are expected to have a Ph.D. degree plus postdoctoral training. Chinese language skills are NOT required and international scientists are encouraged to apply. The application folder should include curriculum vitae, a statement of research accomplishments, and future research plans. The application folder and at least three letters of recommendation should be sent to Dr. Na-Sheng Lin, Chair of Search Committee, Institute of Plant and Microbial Biology, Academia Sinica, Academia Rd, Nankang, Taipei, Taiwan 11529. e-mail: nslin2@sinica.edu.tw. FAX: (+886)2-2782-1605. The review of applications will start on Sept. 20, 2007 until the positions are filled.

Compendium of Soil Fungi Resurrected

IHW-Verlag, D-85378 Eching near Munich, Germany, is publishing a second edition of the Compendium of Soil Fungi, revised taxonomically by W. Gams (expected Sept./Oct. of this year). The whole work was regenerated and corrected after OCR-scanning of the original text. Details of the 1st edition based on misidentifications have been eliminated as far as possible. A double-column print in A4 format permitted production of the whole work in one volume of ca 700 pages. Some 300 additional, mainly taxonomic, references have been added. Important changes involve the subdivision of Phialophora, Verticillium and Paecilomyces, and the transfer of most Clonostachys and Mortierella subgen. Micromucor to Umbelopsis. Teleomorph taxa of Fusarium and Cylindrocarpon have been brought back to the anamorph genera. The illustrations remain unchanged. Price 149 Euro. Orders dr.schmid@ihwverlag.de or fax: x49 89 3192257

—Walter Gams
w.gams@cbs.knaw.nl

MYCOLOGICAL CLASSIFIEDS
Assistant/Associate Professor — Fungal Genetics/Genomics

**Qualifications Required** — Ph.D in plant pathology, genetics, mycology or related field. Training in the genetics of fungi with expertise in one or more of genomics, molecular biology or biochemistry. Excellent oral or written communication skills. Consideration at the Assistant Professor level requires at least three years of experience beyond the Ph.D and a substantial record of publications and/or grants.

**Qualifications Preferred** — Post-doctoral experience in fungal genetics or genomics research. Teaching experience at the college level. Interest and ability to supervise the KSU Gene Expression Facility. Demonstrated track record in publishing and obtaining extramural funding. Experience in leading or working as part of an interdisciplinary research team.

**Applications** — Please submit: 1) One page statements describing professional goals, research interests and teaching interest/philosophy; 2) A detailed curriculum vitae; 3) Reprints of up to five relevant publications and 4) Three letters of reference to:

Dr. Barbara Valent  
Department of Plant Pathology  
4024 Throckmorton Plant Sciences Center  
Kansas State University  
Manhattan, KS 66506-5502  
Telephone: 785-532-2336

**ELECTRONIC APPLICATIONS WILL NOT BE REVIEWED**

**Application Deadline** — October 5, 2007 and continues until position if filled. Ppo 87

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Assistant Professor — Population Genetics

**Location** — Department of Plant Pathology, Throckmorton Plant Sciences Building, Kansas State University, Manhattan, KS 66506-5502

**Appointment** — Full time, Tenure Track, 90% Research, 10% Teaching, 12 Month.

**Available** — January 1, 2008

**Responsibilities** — Develop a strong independent fungal genetics/genomics research program emphasizing plant pathogens in agricultural and/or natural ecosystems.

Potential areas of research include but are not necessarily limited to: structural or functional genomics, host/pathogens interactions, developmental genetics, or secondary metabolism. Teach at least one graduate-level course in fungal genetics or genomics, train graduate students, secure extramural funding and publish research results in a timely manner. Work in a multi-cultural setting and create an environment that fosters diversity and collegiality.

**Qualifications Required** — Ph.D in plant pathology, genetics, mycology or related field. Training in the genetics of fungi with expertise in one or more of genomics, molecular biology or biochemistry. Excellent oral or written communication skills. Consideration at the Associate Professor level requires at least three years of experience beyond the Ph.D and a substantial record of publications and/or grants.

**Qualifications Preferred** — Post-doctoral experience in fungal genetics or genomics research. Teaching experience at the college level. Interest and ability to supervise the KSU Gene Expression Facility. Demonstrated track record in publishing and obtaining extramural funding. Experience in leading or working as part of an interdisciplinary research team.

**Applications** — Please submit: 1) One page statements describing professional goals, research interests and teaching interest/philosophy; 2) A detailed curriculum vitae; 3) Reprints of up to five relevant publications and 4) Three letters of reference to:

Dr. Bikram S. Gill  
Department of Plant Pathology  
4024 Throckmorton Plant Sciences Center  
Kansas State University  
Manhattan, KS 66506-5502  
Telephone: 785-532-1391

Please refer to ‘Population Genetics’ position in all correspondence.

**ELECTRONIC APPLICATIONS WILL NOT BE REVIEWED**

**Application Deadline** — October 5, 2007 and continues until position if filled. Ppo 88

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MYCOLOGY ON-LINE

Below is an alphabetical list of websites featured in *Inoculum* during the past 12 months. Those wishing to add sites to this directory or to edit addresses should email <jinx.campbell@usm.edu>. Unless otherwise notified, listings will be automatically deleted after one year (at the editors discretion).

A New Web Page About Tropical Fungi, Hongos Del Parque "El Haya" (58-5)
hongosdelhaya.blogspot.com/
Ascomycota of Sweden
www.umu.se/myconet/asco/indexASCO.html
Australasian Mycological Society Website (53-4)
Authors of Fungal Names (54-2)
www.indexfungorum.org/AuthorsOfFungalNames.htm
Bibliography of Systematic Mycology
www.speciesfungorum.org/BSM/bsm.htm
British Mycological Society (54-1)
www.britmycolsoc.org.uk/
Cold Spring Harbor Laboratory; Meetings & Courses Programs (58-2)
meetings.cshl.edu
Collection of 800 Pictures of Macro- and Micro-fungi
www.mycolog.com
Cordyceps Website
www.mushtech.org
Cornell Mushroom Blog (58-1)
hosts.cce.cornell.edu/mushroom_blog/
Cortbase (58-2)
andromeda.botany.gu.se/cortbase.html
Corticoid Nomenclatural Database (56-2)
www.phyloinformatics.org/
Coverage in Ukraine of Higher Fungal Ranks (56-2)
www.cybertruffle.org.uk/lists/index.htm
Cyberliber Mycological Publications (57-4)
www.cybertruffle.org.uk/cyberliber/index.htm
Cyberliber (58-3)
www.cybertruffle.org.uk/cyberliber/
Cybertruffle's Fungal Valhalla (56-2)
www.cybertruffle.org.uk/valhalla/index.htm
Dictionary of The Fungi Classification
www.indexfungorum.org/names/fundic.asp
Distribution Maps of Caribbean Fungi (56-2)
www.biodiversity.ac.psweb.com/carimaps/index.htm
Distribution Maps of Georgian Fungi (56-2)
www.cybertruffle.org.uk/gruzmaps/index.htm
Distribution Maps of Ukrainian Fungi (56-2)
www.cybertruffle.org.uk/ukramaps/index.htm
Electronic Library for Mycology (56-2)
www.cybertruffle.org.uk/cyberliber/index.htm
Entomopathogenic Fungal Culture Collection (EFCC)
www.mushtech.org
Fun Facts About Fungi (55-1)
www.herbarium.usu.edu/fungi/funfacts/factindex.htm
Funga Veracruzana (53-6)
www.uv.mx/institutos/forest/hongos/fungavera/index.html
Fungal Environmental Sampling and Informatics Network (58-2)
www.bio.utk.edu/feas/
HighWire Press (58-3)
mycologia.org
Index of Fungi
www.indexfungorum.org/names/names.asp
INDEX (Index Nominum Genericorum) Database (52-5)
ravenel.si.edu/botany/ing/
Interactive Key, Descriptions & Illustrations for Hypomyces (52-6)
nt.ars-grin.gov/sbmlweb/fungi/keydata.cfm
Interactive Key to Hypocreales of Southeastern United States (57-2)
nt.ars-grin.gov/sbmlweb/fungi/keydata.cfm
ISHAM: the International Society for Human and Animal Mycology
www.isham.org
JSTOR (58-3)
jstor.org
Libri Fungorum Mycological Publications (58-3)
194.203.77.76/LibriFungorum/
Mold Testing and Identification Services (58-2)
www.pioneer.net/~microbe/abbeylab.html
Mountain Justice Summer (58-3)
www.MountainJusticeSummer.org
Mycologia On-Line (53-3)
www.mycologia.org
Mycological Progress (52-3)
www.mycological-progress.com
The Myconet Classification of the Ascomycota
www.fieldmuseum.org/myconet
Mycosearch web directory/search engine (51-5)
www.mycosearch.com
Mushroom World [new Korean/English site in 2001] (51-6)
www.mushworld.com
NAMA Poison Case Registry (51-4)
www.sph.umich.edu/~kwcee/mpcr
Northeast Mycological Federation (NEMF) foray database (58-2)
www.nemifdata.org
Pleurotus spp.
www.oystermushrooms.net
Rare, Endangered or Under-recorded Fungi in Ukraine (56-2)
www.cybertruffle.org.uk/redlists/index.htm
Registy of Mushrooms in Art
members.cox.net/mushroomsinart/
Searchable database of culture collection of wood decay fungi (56-6)
www.fpl.fs.fed.us/rwu4501/index.html
Small Things Considered.
A microbe blog on microbes in general, but carries occasional pieces specifically on fungi.
schaechter.asmblog.org/schaechter/
Species of Glomeromycota Website (55-3)
www.amf-phylogeny.com
Systematics of the Saprolegniaceae (53-4)
www.ilumina-dlib.org
Tree canopy biodiversity project University of Central Missouri (58-4)
faculty.cmsu.edu/myxo/
Tripartite Similarity Calculator (55-1)
www.amanitabear.com/similarity
The TRTC Fungarium (58-1)
bbc.botany.utoronto.ca/ROM/TRTCfungarium/home.php
U.S. National Fungus Collections (BPI)
Complete Mushroom Specimen Database (57-1)
www.ars.usda.gov/ba/psi/sbml
Website for the mycological journal Mycena (56-2)
www.mycena.org/index.htm
Wild Mushrooms From Tokyo
www.ne.jp/asahi/mushroom/tokyo/
CALENDAR OF EVENTS

NOTE TO MEMBERS:
Those wishing to list upcoming mycological courses, workshops, conventions, symposia, and forays in the Calendar of Events should include complete postal/electronic addresses and submit to Inoculum editor Jinx Campbell at jinx.campbell@usm.edu.

September 15–19, 2007
Microbial Pathogenesis and Host Response Meeting
Cold Spring Harbor Laboratory
Cold Spring Harbor, NY
meetings.cshl.edu

September 19–20, 2007
Workshop on Infectious Disease Ontology
Cold Spring Harbor Laboratory
Cold Spring Harbor, NY
meetings.cshl.edu

September 21, 2007
Meeting on Infectious Disease: A Challenge for Biomedical Informatics
Cold Spring Harbor Laboratory
Cold Spring Harbor, NY
meetings.cshl.edu

October 21–26, 2007
XIV International Botrytis Symposium
Cape Town, South Africa
academic.sun.ac.za/botrytis2007

November 12–16, 2007
5th Congresso Brasileiro de Micologia
Recife, Pernambuco, Brasil
www.5micol.com

December 3–6, 2007
Asian Mycology Congress (AMC) Xth International Marine and Freshwater Mycology Symposium (IMFMS)
Penang, Malaysia
ippp.um.edu.my/amc2007

July 25–30, 2009
BSA/MSA meeting
Snowbird, Utah
NOTE CHANGE OF DATE

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