



# Medical Mycological Society of the Americas



Calling all Mycologists!



Please consider submitting a case or even a favored photo for our Newsletter. Give me the essentials, I will be happy to edit it. Our South American colleagues have given us some great cases recently...HELP!

Submit to: [hall.leslie@mayo.edu](mailto:hall.leslie@mayo.edu)

In the meantime you can visit the following website for a pediatric case of 'Acute pulmonary Aspergillosis in infant with myelodysplasia receiving chemotherapy' go to the [Case Histories](#) section.

At:

<http://www.aspergillus.org.uk/secure/casehistories/case057.html>

### Inside this issue:

|   |     |
|---|-----|
| Taxonomy and Genetics where to you stand? | 2   |
| Contacts                                  | 11  |
| <b>ORDA A. PLUNKETT RE-MEMBERED</b>       | 8   |
| What's happening                          | 5-6 |

Don't forget the annual Banquet to be held in Boston Massachusetts (GO RED SOX; GO PATRIOTS; GO CELTICS) during the annual ASM meeting

108<sup>th</sup> General Meeting: Boston, MA, June 1 - 5, 2008

Call for Nominations for the Rhoda Benham award, Billy H Cooper award, Milton Huppert award will be here before you know it!

# Taxonomy and Molecular Genetics, where to you stand?

We are at an exciting time in the evolution of our understanding of fungal biology as it relates to taxonomy and nomenclature. As the concepts that were originally used to define fungi are modernized to reflect molecular-based information and population biology, the names originally given to the fungi remain constant. It seems that we are now confronted with modernized criteria; but the names of fungi defined by one set of standards continue to be used despite the fact that they have been redefined by a different set of criteria. The scientific name is our shorthand to recognize a set of unique characters that we believe define a particular fungus.

*Coccidioides immitis* was originally based upon a type of fungal structure in human tissue. When the arthroconidial anamorph growing in culture was subsequently associated with the spherule-endospore anamorph observed in tissue, and the concept of *C. immitis* was expanded to incorporate both of these morphologic features (see Tintelnot, K. *et al.* Medical Mycology 45:385-393, 2007 for pertinent references). Following molecular-based analysis of *C. immitis*, the species was separated into two distinct genetic populations that have different geographic distributions (Fisher, MC *et al.* Mycologia 94:73-84, 2002) For these two genetic populations or phylogenetic species, *C. immitis* was redefined with the second genetic population becoming known as *C. posadasii*. The latter was formally defined (diagnosis for the taxon) based upon only molecular criteria. There

were no morphologic components such as those originally used to define *Coccidioides* and *C. immitis*. The two species of *Coccidioides* are morphologically identical, but distinguishable from each other based upon molecular sequence data and their statistical analysis. The criteria for defining the two species have evolved from morphology to genetics without the names *Coccidioides* and *C. immitis* changing.

What are *C. immitis* and *C. posadasii*? Are they taxa to be recognized by traditional morphologic criteria, DNA sequence data, or a combination of both even though the species *C. posadasii*'s specific diagnosis does not contain a unique morphologic component? Is it better for patient care to simply refer to the *C. immitis* complex as a reportable name that reflects morphology, and other differences in genetic populations? Even the ACCUPROBE DNA test does not distinguish the two genetic populations into two separate entities. McGinnis *et al.* (Journal of Clinical Microbiology 44: 4250-4251, 2006) recommended that *C. immitis* should be reported as *C. immitis* complex to accommodate the combined morphologic and genetic criteria for defining species of *Coccidioides*.

A recent issue of Mycologia (Vol. 98, No. 6, November/December, 2006) is devoted to the results from the National Science Foundation sponsored "deep fungi" project which contributed to a reappraisal of the fungal kingdom. As indicated by Blackwell *et al.* (Mycologia 98:829-837, 2006), "A new found wealth of sequence data acquired through community-wide initiatives has advanced the process of acquiring a stable phylogenetic classification of many fungal taxa". One finds that these authors and those of other articles within the issue are proposing six fungal phyla and that a relatively large number of taxa, from orders to genera, are redefined through DNA sequencing and analytical studies. However, the names of these taxa were maintained despite the fact that they were originally defined on the basis of morphologic, biochemical, physiologic and similar criteria. Depending on the specific molecular criteria, fungi of medical

importance such as *Histoplasma capsulatum*, *Aspergillus fumigatus* and *C. immitis* may be

grouped into new and/or possibly multiple families. The relationships of many human pathogens, as for example *H. capsulatum* and *Blastomyces dermatitidis*, have been redefined but the existing nomenclature remains unchanged. Samson and co-workers (Medical Mycology 44(supp1):133-148, 2006) suggested the use of phenotypic and molecular criteria to define *Aspergillus* species. They noted that "Validated careful phenotypic classification (taxonomy) together with phylogenetic treatment of DNA sequence data is a prerequisite for reliable rapid identification methods and database formation".

So what impact, if any, do these rapidly changing phylogenetic concepts have in the world of medical mycology? We would suggest that from the perspective of the diagnosis and treatment of fungal infections, the redefining of various pathogenic fungal taxa has had and will have virtually no impact in the immediate future. The approach used by physicians in the treatment of almost all fungal diseases has been and will continue to be unrelated to whether the etiologic agents are defined by morphology, physiology or phylogeny. Most of us have faced perennial questions from physicians and administrators as to the need to identify the species and in some cases, even the genera of isolates recovered from clinical specimens. How often have you

## Special points of interest:

- Michael McGinnis and Ira Salkin have opened the forum for discussion of a timely issue
- Please e-mail your comments

To: Leslie Hall, editor at [hall.leslie@mayo.edu](mailto:hall.leslie@mayo.edu)

For publication in the next issue

## Continued Controversy from Page 2

had to justify the additional resources required to identify the genus and/or species of a dermatophyte in light of the fact that the vast majority of dermatologists will base their treatment protocols on the clinical presentations of dermatophytoses? Given the costs for equipment, reusable reagents and the training of personnel, will not the use of molecular tools in the routine diagnostic laboratory be subjected to the same or even greater scrutiny if only employed to obtain more rapid and/or more specific identifications of suspected fungal etiologic agents?

Alternatively, the various molecular typing methods that have been described in the literature have opened new epidemiologic parameters in medical mycology. For example, we are now able to determine if multiple isolates recovered during the course of a fungal infection represent the same or genetically different types of the etiologic agent. Similarly, the laboratory can provide information to physicians as to whether the isolates recovered from multiple sites of the same patient are indicative of the dissemination

of the pathogen or are the result of infections caused by genetically related but distinct etiologic agents. This sort of information can be of great assistance in evaluating the course of fungal infections and adjusting the therapeutic protocols used in their treatment.

In addition, we believe that from an academic standpoint we have gained a better understanding of the relationship of fungal groups and their evolution through their phylogenetic definition and identification. In the long term this enhanced basic knowledge of the fungi may provide applied dividends in medical mycology. However, we would also contend that this has led to nomenclatural confusion by using totally different criteria to characterize and identify the same genera and species. Considering our previous example, *C. posadasii* is a phylogenetic defined species within a morphological characterized genus. Will this lead to a situation described by Abraham Lincoln concerning the United States in its civil war, that is, "A house divided against itself cannot stand?"

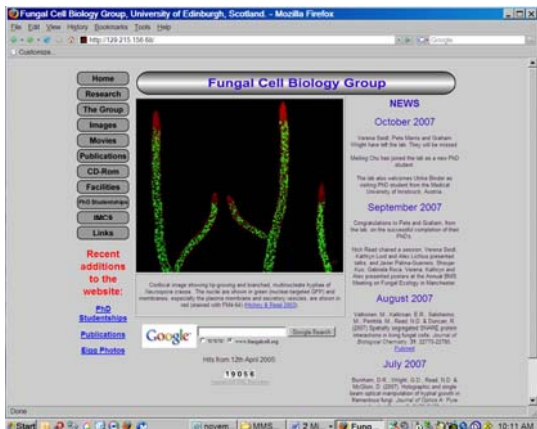
We raise these issues to elicit comments and recommendations from MMSA members on what appears to us to be dual criteria for defining genera and species of medical important fungi. Please send your thoughts to

the Newsletter editor for publication in a subsequent issue.

Ira F. Salkin, Ph.D.

Michael R. McGinnis, Ph.D.

Please send your comments to:  
**Leslie Hall**  
**Hall.leslie@mayo.edu**  
 And read them in the next issue.



*A very cool web site...*

Visit the **fungalcell.org** web site and check out the movie section.

**This stuff is great!**

**In case you are not familiar with them,**

The Fungal Cell Biology Group at the University of Edinburgh is investigating the regulation of hyphal growth and regulation, especially in relation to: hyphal fusion; vesicle trafficking; and calcium signaling.

## *Great article on Stachybotrys by MMSA member*

Sandy Arduin MT(ASCP) & a colleague Bruce Palma MT(ASCP) - of the Mycobacteriology/Mycology Unit at Michigan department of Community Health Bureau of Laboratories

Check out the \Lab Link Newsletter of the Michigan Department of community health bureau of laboratories summer newsletter 2007.

Sandy does a great job!

[http://www.michigan.gov/mdch/0,1607,7-132-2945\\_5103\\_26806-78039--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2945_5103_26806-78039--,00.html)

### *Correspondence about a virtual congress-Internet connections at their best!*

**From:** Errol Reiss (CDC/CCID/NCZVED)

**Sent:** Monday, October 29,

**To:** Gioconda San-Blas

**Subject:** RE: thanks

Hi! Dr. San Blas—First allow me to congratulate you on your initiative in organizing the virtual congress concept in the hemisphere. May I suggest that you coordinate your effort with the Medical Mycology society of the Americas? That way, you can poll its members to estimate the interest in a particular subject for a virtual congress. The MMSA has sought ways to strengthen its ties within the hemisphere. In recent years the MMSA has improved its website and has an electronic newsletter . The website and newsletter are exciting developments and could help to serve as an additional forum for your virtual congress proceedings and correspondence. I will be thinking of topics that I believe would appeal broadly to medical mycologists and be in touch with you in the future about your most important virtual congress concept. Very best regards, Errol

Dear Errol,

Thank you very much, again, for your opinion on our 6th Virtual Mycological Congress. It will be a pleasure to join efforts with the Medical Mycology Society of the Americas. Although the interactive period of the congress will on the 31st of October, it will remain on line indefinitely, so that if the MMSA wishes to pass the information through its electronic list of associates, colleagues interested in the topic of antifungals will be able to read the papers and interact on a personal basis with the authors.

By the way, I don't think I am a member of the MMSA; what should I do to become one?

We will keep in contact for future virtual congresses. Suggestions for topics will be most welcome.

Best wishes

Gioconda

Visit the 6th Virtual Mycological Congress

At:

<http://sanblas-mycology.org/vicongress/>



[www.fcps.k12.va.us](http://www.fcps.k12.va.us)

# What's Happening?

## Calendar of events

**January 16-19, 2008** 3rd Advances Against Aspergillosis,  
Miami, Florida <http://www.aaa2008.org/>

**March 5-7, 2008** Focus on Fungal Infections 18,  
San Antonio, TX

**March 24-28, 2008** 9th ASM Conference on Candida and Candidiasis, New York

**May 30, 2008:** Tentative Mycology workshop Pre ASM contact Jim Harris

**May 31-June 1, 2008** ASM Mycology Workshop for Beginners: Roberts, Goodman, Procop, Koneman and Hall, Boston, Ma (with demonstrations!)

**August 7-10, 2008**, International Congress on Paracoccidioides,  
Medellín, Colombia <http://www.pcm2008.org/>

**May 25-29, 2009** ISHAM Congress, Tokyo, Japan

Medical Mycology in the 21st Century: Scientific Base and Anticipated Chal-



lenges

<http://www.congre.co.jp/isham2009/>

### FREE ACCESS!

Clinical Practice Guidelines  
for the Management of Sporotrichosis: 2007 Update by the  
Infectious Diseases Society of  
America

Carol A. Kauffman, Beatriz  
Bustamante, Stanley W.  
Chapman, and Peter G.  
Pappas

Free Access

[http://  
www.journals.uchicago.edu/  
CID/journal/issues/  
v45n10/52238/52238.web.pdf](http://www.journals.uchicago.edu/CID/journal/issues/v45n10/52238/52238.web.pdf)

ISHAM NEWS- 639-\$50 a year if you want on line; on line and print \$65.  
Emeritus \$40. If you want to get member alerts for ISHAM news, you  
need to join!

Dear Ira F. Salkin, Ph.D., F (, Two PhD thesis on less known fungi have  
appeared recently.

On mycetoma: "Genetic variability, antigenic and antifungal susceptibil-  
ity of *Madurella mycetomatis*", by Wendy van de Sande. Electronic cop-  
ies are available from the author ([w.vandesande@erasmusmc.nl](mailto:w.vandesande@erasmusmc.nl)).

On black yeasts & allies: "Developing Species Recognition and Diagnos-  
tics of Rare Opportunistic Fungi", by Jingsi Zeng. A few free hard copies  
are still available ([de.hoog@cbs.knaw.nl](mailto:de.hoog@cbs.knaw.nl)).

A new Studies in Mycology is freely available on the web: [http://  
www.cbs.knaw.nl/simonline](http://www.cbs.knaw.nl/simonline). It is a special issue on Cladosporium-like  
fungi and also contains articles on taxonomy of melanized agents of dis-  
ease. Hard copies can be ordered from the same address.

*Focus on Fungal Infections*

**SAVE the  
DATE!**

**MARCH 5-7, 2008**  
**Focus on Fungal Infections 18**  
San Antonio, Texas

Chairs: Elias J. Anaissie, MD and  
Michael G. Rinaldi, PhD

Always a great meeting  
Hope to see you there!

**Focus on Fungal Infections 18**

March 6 - 8, 2008  
San Antonio, Texas  
Grand Hyatt San Antonio

**Chairs:**

*Elias J. Anaissie, MD*  
University of Arkansas for Medical Sciences  
Little Rock, Arkansas

*Michael G. Rinaldi, PhD*  
University of Texas Health  
Science Center at San Antonio  
San Antonio, Texas

**Discounted Registration Deadline**  
**January 7, 2008**

**Abstract submission Deadline**  
**Thursday, January 24, 2008**

**Pre- Registration Deadline**  
**February 28, 2008**

<http://www.mycologia.org/content/vol98/issue6/>

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## **Possible title, topics and speakers for ASM\* -MMSA Joint Symposium:**

**Title: “Melanized Fungi: the dark side of medical mycology.”**

**Conveners: Thomas Walsh and Arturo Casadevall**

**Clinical Microbiological Diagnosis and Molecular Taxonomy:**  
Roxanna Vitale, Argentina

**Cellular and Molecular biology of *Wangiella* [*Exophiala*] *dermatitidis*:** Paul Szaniszló

**Mechanisms of the Protective Role of Melanin:** Helene Eisenman

**Biochemical Pathways of *Aspergillus* spp.:** June Kwon-Chung

**Importance of Infections Caused by Melanized Fungi in Patients:** Sanjay Revankar

**\*Div F & C, if possible**



[www.stephencooks.com/pasta/index.html](http://www.stephencooks.com/pasta/index.html)

## ORDA A. PLUNKETT REMEMBERED

(Dr. P., PAPPY)



In the East there were names such as Rhoda Benham and Norman Conant, but in the West, there was one name in teaching medical mycology in the 1920's through the 1950's. That was Dr. Orda A. Plunkett.

Dr Plunkett was born in northern Kentucky near the Illinois border, living there with his parents and younger brother Code. He received his MA in 1922 and Ph.D. in 1924 from Southern Illinois University. While a graduate student, he worked with the US Dept. of Agriculture in upper New York one summer spreading the word on how to predict an imminent infestation of *Phytophthora infestans* in the potato fields. The only individual to take heed was a New York dentist-farmer, who sprayed against the fungus when the fungus arrived as predicted, and his were the only fields to remain uninfected.

Upon graduation he immediately began teaching at Normal University, Normal, Illinois until moving to California with his wife, Marie, in 1925 to teach at the Southern Branch, University of California, precursor to UCLA, and moved to the Westwood campus of UCLA in 1929 to teach botany and mycology, both medical and general.

His primary interest was in teaching and the nurturing of his students, especially his graduate students, who became part of his and Marie's extended family. He was extremely kind and agonized over students with problems. One particular student that both Dr. Roy Wishard and I (HJS) well remember is written up by Dr. Wishard as follows:

"One semester he had a student in Medical Mycology from then communist Czechoslovakia who had been a dentist there for many years before escaping to the West. He was not allowed to

practice dentistry here since he did not have an American degree, and was too old to be accepted into dental school, so he was hoping to be a "lab tech". I was his T.A. and Dr. Jean Shadomy was tutoring him. He was under such extreme pressure that he failed the first two sets of exams, although both Jean and I knew he had mastered the material. On the second lab practical he was so nervous that he was trying to move around the room in the wrong direction! Dr. Plunkett was VERY worried about him, and I suggested that he tell him he could take the final practical (on common contaminant fungi) with the morning section as a practice and then take the practical with his class for grading, since the exams were totally different (they weren't, but he didn't know this). He took the "practice" exam and got 100% correct, and cried when he was told that was his grade FOR REAL! And then Dr. Plunkett asked him if he was more fluent in German than English (he was) so he told him he could write his answers on the final exam in German and I (RHW) would read and score it! He got a very high grade on that as well, and Dr. P. gave him a "C" in the class, which was good enough to get on with his career. I would have gone ahead and given him the "A", but then I was a grad student and not a full professor."

One can only imagine the dinner that all Czechs in the Los Angeles area made for the two of us (RHW, HJS) upon finding out the results, and that the fellow could get on with his life.

Because Dr. Plunkett was more interested in making sure that his students publish their research than his own, it wasn't until the "powers that be" realized that it was he for whom visitors were coming to visit the Botany Department, and that he had an in-

Graciously written by:

H. Jean Shadomy, Ph.D.

Emeritus Prof. of Microbiology

V Virginia Commonwealth University

And

Roy H. Wishard, Ph.D.

Emeritus Prof. of Biology

El Camino College, California

ternational reputation, that he was promoted to full Professor.

Dr. Plunkett was a great teacher, with the unusual trait of unpretentiousness and of an unassuming demeanor. He had an incredible ability to extend his excitement in the subject to all ages and educational level. For instance, on field trips, when children would ask why we were so excited about finding a bit of animal excrement (needed for his study of the succession of fungi over time on animal excrement) he was able to talk to them, and explain completely, so that they, too, were excited. Of course such studies were very important to plant pathologists and environmental botanists. He was also an avid searcher for the reservoir in nature of *Coccidioides immitis*, and we had a succession of small animals, including a tarantula, which were inoculated with the fungus to study their fate. Many of his graduate students worked on studies of *C. immitis*, including Dr. Frank Swatek, who continued these studies long after leaving UCLA for his own career at Long Beach State College.

Two things come to mind regarding field trips. First and foremost, Dr. P. hated driving, and in fact was not a good driver, although he never had an accident. It fell to the students, often me (HJS), to do most of the driving. Second was his frugality. He was very frugal about materials in the laboratory, and this was true as well on any field trips. Overnight trips often saw us in third-rate hotels playing poker with toothpicks

through the night. We were well advised to come prepared!

The Medical Mycology laboratories were run by his T.A.s, who were given considerable latitude on how to project the needed information. It was such a great learning experience for the T.A.s that it is no wonder that many, and perhaps a majority of his graduate students became teachers. The book used in the classroom was *The Fungous Diseases of Man*, (University of California Press, 1965) by J. Walter Wilson, M.D., (Clinical Professor of Medicine (Dermatology) in the Center for Health Sciences at UCLA a well known dermatologist and interested medical mycologist, and Orda A. Plunkett, Ph.D., Professor Emeritus of Botany (Mycology) and Research Professor of Mycology in the Center for Health Sciences at UCLA. Photographs were all taken by Dr. Lilly Davis, drawings, were made by Dr. Wishard. It was printed in Switzerland by an art printers company to ensure color accuracy, and was paid for by a grant from a pharmaceutical company. Like others from the “early days” of medical mycology, the book is to be found on many bookshelves as history of the subject. An earlier book *Introduction to Medical Mycology*, O. A. Plunkett (University of California Press, 1958) was used until that time.

After thinking back on all these things, it seems no wonder that he was affectionately called “Pappy” by his graduate students, though never directly!

Dr. Plunkett died on December 16, 1975. It is notable that honorary pallbearers at the sad occasion were all previous graduate students who had gone on to work in the field. Some of Dr. Plunkett's well known students, to name only a very few, were Dr.s Frank Swatek, Carlyn Halde, Henry Walsh, and Geoffrey Orr.

Much more could be written about this gentle man as the above does not nearly describe him, but surely this will give you a hint as to why his graduate students truly loved him and the imprint he made on our souls.

Does anyone have a photo of Dr. Plunkett they would be willing to share? I will scan it and return it to you!

Leslie Hall



<http://www.fungaljungal.org/image/4.jpg>



If you have a keen interest in fungi  
or fungal diseases of human and animals,

YOU are cordially invited to join **Medical  
Mycological Society of the  
Americas**

*The benefits of membership include:*

Network with other medical mycologists.

Attend our annual business meeting and banquet.

Receive our MMSA Newsletter.

Join in the new MMSA Discussion Board .

Be listed in and have access to Membership Directory

Qualify for the:

The Cooper Award in clinical mycology

The Rhoda Benham Award in general medical mycology

The Milton Huppert Student Travel Awards

Check our web site for other awards...

**Individuals:** Click on MEMBERSHIP, APPLICATION on the side bar of the MMSA  
Homepage: [www.mycologicalsociety.org](http://www.mycologicalsociety.org)

**Corporations:** For details on becoming a corporate sponsor, email Deanna Sutton at  
[sutton@uthscsa.edu](mailto:sutton@uthscsa.edu)



The next issue promises to be fun and informative.

As always, we are looking for clinical cases...

Biography on Charlotte Campbell

**Chet Cooper** is going to bring us up to "snuff" on Proteomics...

**Tom Walsh** has promised an article on fungal peptides...

**Norman Goodman** and **Art DiSalvo** are working on the historical perspective of medical mycology.

Please don't hesitate to contact any of us with suggestions, and comments, good or bad!

Due January 26th!



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