



# ECMM

European Confederation of Medical Mycology

# CEMM

Confédération Européenne de Mycologie Médicale

## The future of the ECMM

**2003** was a very important year for the ECMM. For the first time we held our congress jointly with the EORTC's Trends in Invasive Fungal Infections (TIFI) meeting. Several papers were published by national working parties on the epidemiology of mycoses: these represent the fruits of a lot of ECMM-sponsored research. And the ECMM has taken stock of its position and started to look ahead to the shape of its future activities. Our Confederation has clearly come of age, and is finding its place as a meeting point for European national societies of medical mycology.

First, let me say the meeting in Amsterdam was a great success by any criterion.



*Frank C. Odds, ECMM President*

The number of people attending exceeded that of the ISHAM Congress held in May, 2003. The feedback from the participants was uniformly positive, both about the quality of the scientific presentations and the social activities. The high number of industry-sponsored symposia was a reflection of the currently huge interest in novel antifungal agents. Jacques Meis and his colleagues in the Netherlands put together a truly superb meeting: one that will be remembered for many years.

There are very many scientific/medical congresses; some say too many! By combining the ECMM congress with the biennial TIFI meeting, the two organizations optimized the costs of attendance and benefited from attracting delegates from two different (though partly overlapping) constituencies. The Amsterdam experience shows that we can reduce two meetings to one with great success. Your Committee has therefore decided to continue the practice of holding congresses jointly with TIFI every two years. If we are to make the subsequent joint congresses as attractive as the one in Amsterdam we feel it is important to change the style of meetings held by the ECMM.

A small working party of your Committee members has been actively considering the future of the ECMM. We believe that the Confederation offers particularly strong opportunities for education in medical mycology — other organizations are already very busy with scientific and clinical research in the field. Our decision is therefore to hold biennial ECMM teaching meetings in the years between the joint ECMM/TIFI congresses. These meetings will be based around a focussed theme within the medical mycology field and will concentrate on presentation of training material, rather than research papers. We hope this will attract those new to the field, as well as non-specialists, medical and non-medical, who want to learn more

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ECMM/CEMM

**Mycology Newsletter**

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# ECMM Affiliated Societies

(Information provided by the member Societies)

## All-Russian National Academy of Mycology

President: Y.V. Sergeev  
Vicepresident, Head of Medical Section: S.A. Burova (ECMM delegate)  
Secretary: A.Y. Sergeev  
Treasurer: L.V. Matitsyn  
Membership 2003: 220  
National meeting: March 24-25, 2004, Moscow  
Yearbook: Advances in Medical Mycology  
Website: www.mycology.ru

## Associação Portuguesa de Micologia Médica (ASPOMM)

President: M. Rocha  
Vicepresident: R.M. Velho  
Secretary: M.L. Rosado (ECMM delegate)  
Treasurer: M. Gardete  
Membership 2003: 50

## Asociación Española de Micología (AEM) Sección de Micología Médica

President: J. Pontón San Emeterio  
Secretary: F.J. Cabañes Saenz  
Treasurer: F. Hernando  
President Medical Mycology Section: F.J. Cabañes Saenz  
ECMM delegate: J. Pemán García  
Membership 2003: 113  
National meeting: Every two years  
Journal: Revista Iberoamericana de Micología

## British Society for Medical Mycology (BSMM)

President: F.C. Odds (ECMM delegate)  
General Secretary: H.R. Ashbee  
Meetings Secretary: D.J. Sullivan  
Treasurer: G.S. Shankland  
Membership 2003: 276  
National meeting: April 18-20, 2004, Bradford  
Newsletter: BSMM Newsletter

## Bulgarian Mycological Society (BMS)

President: T. Kantardjiev (ECMM delegate)  
Vicepresident: G. Mateev  
Secretary: A. Kouzmanov  
Treasurer: T. Velinov  
Membership 2003: 41

## Committee for Medical Mycology of Czechoslovak Society for Microbiology (CSSM)

President: K. Mencl (ECMM delegate)  
Secretary: P. Hamal  
Treasurer: J. Gabriel  
Membership 2003: 14  
Newsletter: Bulletin of CSSM

## Danish Society for Mycopathologia

President: J. Stenderup  
Vicepresident: B. Andersen  
ECMM delegate: J. Stenderup  
Membership 2003: 25  
Newsletter: Report from the Danish Society for Mycopathologia

## Deutschsprachige Mykologische Gesellschaft e.V. (DMyK)

President: H. Hof  
Vicepresident: M. Ruhnke  
Secretary: H. Chr. Korting  
Treasurer: P. Mayser  
ECMM delegate: M. Schaller  
Membership 2003: 497  
National meeting: Sept. 9-11, 2004, Lübeck  
Journal: Mycoses  
Newsletter: Mykologie Forum (4 issues/year)

## Federazione Italiana di Micopatologia Umana e Animale (FIMUA)

President: R. Esposito  
Vicepresident: G. Morace  
Secretary: F. Barchiesi  
Treasurer: M.A. Viviani (ECMM delegate)  
Membership 2003: 160  
Newsletter: FIMUA news  
National meeting: October 7-9, 2004, Grado (Gorizia)

## Finnish Society for Medical Mycology

President: E.-L. Hintikka  
Vicepresident: J. Salonen  
Secretary: H. Ranta  
Treasurer: R. Voutilainen

ECMM delegate: J. Salonen  
Membership 2003: 84  
Newsletter: Sienet ja Terveys (Fungi and Health)

## Hellenic Society of Medical Mycology

President: G.L. Petrikos  
Vicepresident: G. Samonis  
Secretary: E. Frangouli  
Treasurer: A. Mitrousia  
ECMM delegate: E. Roilides  
Membership 2003: 34  
National meeting: January, 2004, Athens

## Hungarian Dermatological Society - Mycology Section

President: G. Simon (ECMM delegate)  
Secretary: G. Fekete  
Membership 2003: 37

## Israel Society for Medical Mycology

President: E. Segal  
Vicepresident: I. Polacek  
Secretary: I. Berdicevsky (ECMM delegate)  
Treasurer: D. Elad  
Membership 2003: 60  
National meeting: twice a year

## Mycology Group of Bosnia Hercegovina

President: L. Ozegovic (ECMM delegate)  
Secretary: M. Babic  
Membership 2003: 19  
National meeting: twice a year

## Netherland Society for Medical Mycology (NVMy)

President: J.F.G.M. Meis (ECMM delegate)  
Secretary: E.P.F. Yzerman  
Treasurer: M.H. Dammer  
Scientific Secretary: S. de Hoog  
Membership 2003: 175  
National meeting: April 6, 2004, Arnhem  
Newsletter: NVMy Newsletter

## Polish Dermatologic Society - Mycology Section

President: E. Baran  
Secretary: J. Szepletowski (ECMM delegate)  
Treasurer: R. Bialynicki-Birula  
Membership 2003: 98  
National meeting: June 2004, Wroclaw (joint with ECMM Congress)  
Journal: Mikologia Lekarska (Medical Mycology)

## Société Belge de Mycologie Humaine et Animale/Belgische Vereniging Voor Menselijke en Dierlijke Mycologie

President: D. Swinne  
Vicepresident: N. Lateur, E. Van Hecke  
Secretary: P.E. Lagneau, K. Lagrou  
Treasurer: F. Symoens  
ECMM delegate: N. Noland  
Membership 2003: 172

## Société Française de Mycologie Médicale

President: O. Morin  
Vicepresident: N. Contet-Audonou, A. Detry, P. Boiron  
Secretary: B. Dupont (ECMM delegate)  
Treasurer: P. Boiron  
Membership 2003: 400  
National meeting: June 3-4, 2003, Montpellier  
Journal: Journal de Mycologie Médicale

## Swedish Society for Clinical Mycology

President: J. Faergemann  
Vicepresident: T. Kaaman  
Secretary: L. Klingspor (ECMM delegate)  
Treasurer: S. Johansson  
Membership 2003: 133  
National meeting: March 12, 2004, Stockholm (joint meeting with the Nordic Society for Medical Mycology)

## Swiss Mycological Group

ECMM delegate: M. Monod

## Turkish Microbiological Society - Mycology Section

President: Ö. Ang  
Secretary: C.B. Johansson  
Treasurer: D. Yaylali  
ECMM delegate: E. Tümbay  
Membership 2003: 150  
National meeting: 2005, Konya  
Newsletter: Bulletin of the Turkish Microbiological Society

## The future of the ECMM

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about a particular topic in a better-integrated, didactic setting than occurs at research-based congresses.

Although we have set these plans into motion, in practice it will be 2008 before the first ECMM teaching meeting takes place. This year (2004) we held the last of our research-based ECMM congresses in Wroclaw, Poland. You will find details elsewhere in this Newsletter. The organizers are doing a superb job of putting together a great programme; I hope you will attend and enjoy everything Poland has to offer. Next year (2005) will see a joint TIFI/ECMM congress in Berlin. We wish its organizers, Markus Ruhnke and his colleagues, every success with this venture. In 2006 the ISHAM Congress will be held in Paris, so we shall not be holding an ECMM teaching meeting that year, then in 2007 we will be back for a joint congress. So we look forward to 2008 to see our new teaching venture take shape.

One of the major projects undertaken by the ECMM over the past four years has been to set up national groups undertaking prospective studies on the epidemiology of various mycoses in their countries. Because the ECMM has only very limited funds, the work was undertaken through the hard work, generosity of spirit and energy of several individuals. The epidemiology projects have now borne fruit, with publications from several of the groups appearing in peer-reviewed journals. Congratulations to everybody involved!

Because the ECMM is, in essence, an umbrella organization for national medical mycology societies, we are limited in the extent to which we can sponsor projects much beyond giving our name in support. We did this for the first meeting of the Russian Mycologists, held in 2003, which was a great success.

We are now sponsoring a workshop on *Pseudallescheria* infections at the Centraalbureau voor Schimmelcultures in the Netherlands, organized by G.S. De Hoog. We are always ready to consider proposals for workshops and epidemiological study groups.

Over the next few years you will see tangible evidence of the involvement of the ECMM in training activities, apart from the planned biennial training meetings. We are looking into production of an educational CD-ROM that can be circulated to all our member societies, and we are investigating other possibilities for provision of teaching materials.

The ECMM is moving from strength to strength. Please continue to give us your active support.

Frank C. Odds

Special report on...



# Trends in Medical Mycology

## Joint meeting of the 9<sup>th</sup> ECMM and 7<sup>th</sup> TIFI



The 1<sup>st</sup> Trends in Medical Mycology 2003 was a great success, with 950 scientific participants from over 50 countries in the world. This joint meeting has become the largest international meeting in the field of medical mycology worldwide. Most participants were impressed with the excellent presentations by the invited speakers. The authors of more than 300 submitted abstracts contributed to lively poster and free paper sessions. The social activities were well chosen and adapted to Amsterdam, especially the exclusive opening ceremony at the Van Gogh Museum.

The day before the conference, the Fungal Biodiversity Center, Utrecht (CBS) organised a well-attended hands-on workshop on new and emerging pathogens. The Sunday started with meetings of the ECMM board and the EORTC Invasive Fungal Infections Group. The plenary key-note lecture was delivered by Prof. James Anderson, Toronto on the adaptation of *Candida albicans* to antifungals, followed by Prof. Frank Odds, chairman of ECMM, who memorised Prof. Glyn Evans in a very impressive way. The Drouhet lecture was delivered by Prof. Ben de Pauw who combined science and emotion in an excellent presentation stressing the need for a continued search for evidence-based medical interventions. The audience was enthusiastic to participate in 3 well-attended clinical symposia with an interactive voting system. The organisers of these interactive clinical symposia had gathered very challenging clinical cases.

After the meeting, a questionnaire was sent out to all participants. 95% of the responders were satisfied with the scientific (educational) information of the congress, and 92% found the information useful for their daily practice. 98% responded that the meeting was well organized. 56% is planning to join the 10<sup>th</sup> ECMM Congress in Wroclaw, Poland, 2004 and 85% the 2<sup>nd</sup> TIFI-ECMM joint meeting in Berlin, 2005. 70% of the responders prefer a bi-annual Trends in Medical Mycology Meeting.

The 2<sup>nd</sup> joint meeting will be held in Berlin, 23-26 October 2005 in the new renovated Berlin Congress Centre located at the historical Alexanderplatz in the middle of the cultural centre of Berlin. For organising the Congress in Berlin 2005, the executive committee consists of Bart-Jan Kullberg, Georg Maschmeyer, Jacques Meis and Markus Ruhnke.

Please schedule your attendance to our future meetings in Wroclaw 2004, Poland and Berlin 2005, Germany.

Jacques Meis





One of the numerous sessions of the conference was dedicated to diagnosis of fungal infections and identification of fungi. It proved to be a stimulating scientific meeting, which reflected the activities and advances towards rapid and reliable diagnosis of fungal infections.

PCR as a diagnostic tool was one topic. A. Chaiprasert (Bangkok, Thailand) comparing different methods for diagnosis of cryptococcal meningitis in AIDS patients showed that the latex agglutination test still has the highest sensitivity followed by India ink preparation and culture. PCR based on 18S rRNA showed the lowest sensitivity with 79.7%.

Lena Klingspor (Stockholm, Sweden) compared detection of *Aspergillus* and *Candida* by PCR and Platelia *Candida* antigen, antibody test and *Aspergillus* antigen test, respectively for monitoring patients with acute leukemia and autologous stem cell transplantation.

In general, PCR, though a rapid and very sensitive method for certain diagnostic questions still has its limitations. Contamination with fungal DNA and cross reactions are well known problems. Thus it seems that PCR should not be used as a single method, but should be



# Advances in diagnosis and identification of fungi

combined with various tests to enhance the specificity of diagnosis.

Identification of fungi was another issue presented by several groups. E. Norberg (Stockholm, Sweden) presented the successful identification of *Candida* spp. within 6 hours using Pyrosequencing™, a bioluminometric technology applied to determine the sequence of target DNA in real-time.

The group of Tania C. Sorrell (Sydney, Australia) demonstrated that Nuclear Magnetic Resonance is able to identify different *Candida* species and two varieties of *C. neoformans*. The isolates were identified with an overall accuracy of 98%. As both methods seem to be expensive this may reduce their value for application in a diagnostic laboratory.

A microtiter-based assay for differentiating *C. dubliniensis* from *C. albicans* was presented by Gerhard Haase (Aachen, Germany). This test is based on the tolerance of *C. albicans* to NaCl. Using a modified High Resolution medium with 9.5% NaCl, reliable discrimination after a 24h incubation period could be shown. This method seems not only to be fast, but also cost-effective.

M.M. De Vos (Gent, Belgium) described the use of solid phase cytometry (SPC) for the rapid detection and enumeration of *Aspergillus* hyphae. SPC involves membranefiltration of a sample, fluorescent labelling of the retained hyphae and laser scanning of the membrane filter. Using specific immunofluorescent antibodies, *Aspergillus* can be differentiated from other clinically important fungi within 4-8 h.

Birgit Willinger (Vienna, Austria) investigated 112 samples of patients with fungus balls from the maxillary sinus using PCR followed by hybridization, sequencing and culture in order to identify the fungi, and to evaluate the variety of fungi in these samples. Sequence analysis was the most sensitive technique. *A. fumigatus* proved to be the most common agent in fungus balls. Other *Aspergillus* species and other genera were rarely found.

False positive reactions using the galactomannan sandwich

*The Drouhet lecture was delivered by Prof. Ben de Pauw on the opening day of the ECMM/TIFI meeting, September 29<sup>th</sup>, on "The art of clinical mycology: between realism and impressionism". In the photograph the ECMM President congratulates Prof. de Pauw.*



ELISA (Platelia *Aspergillus*, Bio-Rad, France) in neonates confine its value for the early diagnosis of invasive aspergillosis. M.A.S.H. Mennink-Kersten (Nijmegen, The Netherlands) reported a *Bifidobacterium* lipoteichoic acid (LTA) mimicking the epitopes of galactomannan and thus reacting with the monoclonal antibody EB-A2 also used for the sandwich ELISA. Since the neonatal gut is heavily colonised with this bacterium, its LTA might cause ELISA cross reactivity with serum after translocation due to immaturity of the intestinal mucosa. Besides the recently reported cross reactivity with Tazobactam this may be another possible reason for false positive

reactions. To my opinion this is a very important observation and should always be considered when using this test.

Yvonne Gräser (Berlin, Germany) in this session the only one dealing with dermatophytes, reported the application of microsatellite markers revealing clonal evolution in zoophilic and anthropophilic dermatophytes. The results of her study indicate that triggers of the emergence of clonal lineages in dermatophytes are probably dramatic changes in ecology mostly accompanied by reduction of conidiation.

Each of the scientific papers showed well founded studies and great effort to use new methods in

order to improve our knowledge of epidemiology, ecology of fungi and to accelerate reliable diagnosis of fungal diseases. The future will show which of these are appropriate for application as routinely used techniques. In diagnostic laboratories, time-efficient, easy to use, rapid, and cost effective methods proven to yield reliable results are supposed to be the most practical approaches for diagnosis of fungal infections. The presented techniques seem likely candidates. Still, they have to be adapted and improved to provide the best possibility for early diagnosis of fungal infections in the near future.

Birgit Willinger

## Trends in Medical Mycology



Opportunistic mycoses remain as one of the major areas of interest in immunocompromised patients for three major reasons. First, these infections are common and associated with low rates of clinical success and high rates of mortality. Second, primary or secondary resistance to antifungal agents used in prophylaxis/treatment of these infections is now well-known and complicates the issue. Third and finally, as a consequence of the great demand for more effective and less toxic drugs and the developments in pharmaceutical industry, novel antifungal agents have now appeared in antifungal arena or are under investigation. The latest management strategies for the most common opportunistic mycoses were covered in various symposia in the 9<sup>th</sup> Congress of the European Confederation of Medical Mycology and the 7<sup>th</sup> Trends in Invasive Fungal Infections (ECMM/TIFI) joint meeting.

The meeting hosted an important symposium sponsored by Gilead and entitled «Fungal infections in the stem cell transplant and acute leukemia patients: Evolving trends and treatment options». Per Ljungman (Huddinge, Sweden) and Hamdi Akan (Ankara, Turkey) chaired

# The use of liposomal amphotericin B, voriconazole, and caspofungin in the treatment of invasive fungal infections

the symposium and the speakers were David W. Warnock (Atlanta, USA), Maria Anna Viviani (Milan, Italy) and Catherine Cordonnier (Créteil, France). The program started by a welcome and introduction from Dr. Ljungman. He mainly focused on the importance of the fungal infections and the risk factors in stem cell transplant patients. He concluded that the complexity of the risk factors and new modalities are changing the trends in fungal infections. Dr. Warnock detailed the epidemiology of the fungal infections in stem cell transplant patients and stat-

ed that although invasive aspergillosis is the main problem in these patients, new emerging pathogens such as *Fusarium*, *Scedosporium* and *Mucorales* also appear to be increasing and new control and prevention strategies will be important. Dr. Viviani summarized the data concerning the drugs used in the treatment of fungal infections in stem cell transplant patients. She stated that although beneficial, these drugs harbor the problem of resistance especially for fluconazole, and in vitro susceptibility testing is still inadequate to assist the clinician. Dr. Cordonnier



Waiting the boat: Sybren de Hoog (CBS, Utrecht), left, and Leo van Griensven (Mushroom Experiment Station, Horst).

gave up-to-date data on the use of the antifungal drugs in stem cell transplant patients. She summarized the latest data on azoles, echinocandins and polyenes, and provided data on the use of high dose liposomal amphotericin B in the treatment of invasive aspergillosis in stem cell transplant patients. Dr. Akan forwarded the questions from the audience to the panel members and after a fruitful discussion he gave a brief summary of the symposium and closed the symposium thanking the audience and the faculty.

One of the new challenges in treatment of serious fungal infections, voriconazole (Pfizer Pharmaceuticals) was discussed in the Pfizer-sponsored symposium, «New challenges in the ever-changing world of serious fungal infections». The symposium was chaired by Ben de Pauw (Nijmegen, The Netherlands) and Thomas Patterson (San Antonio, USA) and the speakers were Frank C. Odds (Aberdeen, Scotland), Thomas Patterson and Markus Ruhnke (Berlin, Germany). Dr. Odds emphasized the rapid change in the types of fungi causing serious infections. While the incidence of infections due to *Candida albicans* has decreased due to effective antifungal prophylaxis and therapy, infections due to non-*albicans Candida*, particularly *C. glabrata* are encountered even more frequently than before. Similarly, the incidence of invasive aspergillosis and of infections due to *Fusarium*, *Scedosporium*, and fungi belonging to class zygomycetes has continued to rise in recent years. Dr. Patterson reviewed the novel treatment strategies in invasive aspergillosis. While the use of conventional amphotericin B for treatment of these infections is now limited due

to its substantial toxicity and limited efficacy, novel therapeutic alternatives have emerged. Among these are the lipid formulations of amphotericin B, candins (for salvage treatment), and voriconazole (primary treatment). Voriconazole appears as an advantageous option due to its fungicidal activity against *Aspergillus*, its availability in IV and oral formulations, and most importantly, its superior efficacy and safety as compared to amphotericin B. A multicenter trial that compared amphotericin B and voriconazole in treatment of invasive aspergillosis followed by other licensed therapy proved that voriconazole therapy was associated with better clinical outcome and improved survival when compared to amphotericin B. Moreover, voriconazole was overall less toxic except for the temporary visual disturbances observed in 44% of the patients receiving voriconazole. These results now suggest the use of voriconazole as an efficacious therapeutic modality in primary treatment of invasive aspergillosis. Dr. Ruhnke reviewed the use of voriconazole in recurrent and refractory *Candida* infections. Invasive *Candida* infections due to some non-*albicans Candida* species, particularly *C. krusei* and *C. glabrata* tend to be resistant or less susceptible to the commonly used fluconazole therapy. Although, the increase in MICs of fluconazole tends to be followed by an increase in those of voriconazole, voriconazole appears to be effective against a remarkable subset of fluconazole-resistant or -refractory strains and thus may be an efficacious alternative in treatment of these infections.

Another new challenge in treatment of serious fungal infections,

casposungin (Merck Sharp & Dohme) was discussed in the MSD sponsored symposium «Antifungal treatment without compromise». The symposium was chaired by Georg Maschmeyer (Berlin, Germany) and the speakers were Francesco Menichetti (Pisa, Italy), Carol Sable (Blue Bell, USA) and Rodrigo Martino (Barcelona, Spain). Dr. Menichetti emphasized the significance of invasive fungal infections in patients with hematological malignancies, organ transplant recipients, ICU patients and patients undergoing abdominal surgery and focused on infections due to *Candida* and *Aspergillus* as being the two most commonly encountered etiologic agents in these infections. Dr. Menichetti stated that as an antifungal agent with adequate activity and favorable tolerability, casposungin may be a good alternative in treatment of candidiasis and as salvage therapy of invasive aspergillosis. As well as its potential use as monotherapy, combination of casposungin with amphotericin B against *Aspergillus* and *Fusarium* and with voriconazole against *Aspergillus* also appeared promising, based on the synergistic interaction of the two corresponding drugs for several isolates. As discussed by Dr. Martino who further detailed the practical experience with casposungin as salvage therapy, casposungin appeared to yield a favorable response in 54.8% of patients with proven or probable invasive aspergillosis, 50% of patients with invasive candidiasis and 100% of patients with esophageal candidiasis. In that retrospective analysis, as well as its favorable efficacy, casposungin was in general well-tolerated and no discontinuation due to casposungin-related adverse events were noted.

In summary, as reviewed in these symposia during the ECMM-TIFI joint meeting, antifungal therapy is more dynamic than ever before and the novel drugs appear to be potentially efficacious and safe in treatment of serious invasive fungal infections.

Sevtap Arıkan  
Hamdi Akan





# Development of vaccination against fungal infections

This wide-ranging symposium gave a fascinating insight into the various active and passive immunisation strategies which are being pursued against four different fungal infections. It began with a talk about vaccine development against the respiratory fungal infection coccidioidomycosis (Gary T. Cole, Toledo, USA). The feasibility of developing a vaccine is supported by the clinical observation that natural infection confers life-long protection. A number of potentially protective antigens have been identified, including a cell wall associated proline-rich antigen and a spherule outer wall glycoprotein. However, identifying which components might be candidates for the components of a vaccine is made difficult by the complexity of the immunopathology of this infection.

Rod Hay (Belfast, UK) then reviewed human ringworm (dermatophytosis) as a target for vac-



cine development. To date, experience with ringworm vaccines has largely been confined to cats and cattle. The ability of different vaccine preparations to protect in vet-

erinary practice was shown to correlate with their ability to induce immunity as measured by *in vitro* assays and experimental infections.

The third talk (Arturo Casadevall, New York, USA) discussed the advantages and disadvantages of two cryptococcal vaccines – one composed of the capsular material (glucuronoxylomannan) and the other a peptide mimotope. Various laboratories have independently established the ability of specific anticapsular antibodies to protect in murine models of the infection, and in the human disease high titres of anticapsular antibodies correlate with a good prognosis.

The last talk (Ruth Matthews, Manchester, UK) differed from the others in focusing on the use of antibody therapy in the treatment of fungal infections rather than vaccine development for prevention of these infections. Mycogab® is a human recombinant antibody against the stress protein in hsp90, the development of which began with the observation that high titres of antibodies against fungal hsp90 correlated with a good prognosis in patients with deep-seated candidal infections. It has intrinsic antifungal activity and is synergistic with more conventional antifungal drugs such as amphotericin B. It is currently being assessed in a multinational, double-blind, placebo-controlled trial.

Ruth Matthews



The topic of exposure of man to fungal pathogens, allergens or toxic metabolites was treated in two symposia: «Impact of human behaviour on the emergence of fungal infections» and «Aeromycology, fungal toxins and their clinical relevance».

The problems of identification of the fungal pathogens, allergens or metabolites were tackled; criteria of diagnosis of the different diseases, route of transmission were discussed.

# Exposure of man to fungal pathogens, allergens or toxic metabolites

Françoise Symoens (Brussels, Belgium) made an overview of the taxonomy, ecology, pathologies

caused by *Pseudallescheria boydii*. This saprophytic fungus rarely encountered in home, but found in





Ben de Pauw (Nijmegen), left, and John H. Rex (AstraZeneca, UK).

rich polluted environments. The isolation of this fungus is improved on a medium containing cycloheximide. The prevalence of invasive pseudallescheriasis infections has markedly increased in the last decade due to the increasing number of immunocompromised patients and immunosuppressive therapies. Moreover it has been shown to be the second fungus colonising the respiratory tract of cystic fibrosis (CF) patients (after *Aspergillus fumigatus*), its isolation being a contraindication to lung transplantation; the fungus is indeed highly resistant to the most common antifungal drugs. Molecular typing results of colonisation strains from CF patients and biochemical similarities with putative virulence factors of *A. fumigatus* (alkaline protease and catalases) were presented.

Malcolm Richardson (Helsinki, Finland) made a presentation on sick buildings and fungi. In modern buildings, incorrect maintenance constitutes a cause of biological contamination by pathogenic and allergenic fungi. The effects on human health are often difficult to prove, indeed the problem of exposure to toxins or fungi is the evaluation of the dose. There is a need for development of exposure biomarkers such as stachylisin for *Stachybotrys chartarum* and also of sensitive non-culture methods for

detection of fungi based on quantitative real-time PCR. Health-based exposure standards for moulds and the allergens they produce do not exist, and in absence of guidelines, fungal growth in buildings must be considered as a hazard.

Eduardo Dei-Cas (Lille, France) lectured on the potential role of carriers in *Pneumocystis* transmission. *Pneumocystis* species are host specific and *Pneumocystis jiroveci* is the sole species identified in human as agent of *Pneumocystis* pneumonia, a severe opportunistic infection in AIDS and severely immunocompromised patients. *Pneumocystis* is the sole deep fungal infection transmitted from host to host by airborne route.

Healthy subjects can transiently host *Pneumocystis* and constitute a dynamic reservoir for transmission to other healthy or susceptible subjects or to infants who develop primary infection. PCR results from healthy subjects show that *Pneumocystis* can be eliminated from the lungs. Hospital care-workers are also able to transmit infections to other patients through hospital environment.

Robert A. Samson (Utrecht, The Netherlands) focused on the strategies of identification at the species level of indoor moulds from home or work environment. Until now identifications are mainly based on morphological criteria

but there is a need for new approaches, indeed polyphasic taxonomy allows to improve species delineation of close related fungi. Microplate ID system BIOLOG for filamentous fungi, and microarrays will be helpful for the future, but nowadays, they need further improvements. Correct identification of indoor moulds requires for the investigators course of mycology, books, reference culture, interlaboratory tests; all these services are provided by the CBS (Centraal Bureau voor Schimmelcultures).

E. Pieckova (Bratislava, Slovenia) presented the toxic effects of *Stachybotrys chartarum*, a cellulolytic indoor mould which may produce highly toxic mycotoxins of the trichothecene group. *In vitro* toxic activity of *S. chartarum* extracts was evaluated in a rat animal model after intratracheal instillation, hematological parameters and inflammatory response were measured. The data allowed to prove that acute pulmonary exposure to these toxic metabolites cause lung injury and hematological disorders.

H. Braun (Graz, Austria) made an overview about a much debated topic at the moment: AFS (allergic fungal sinusitis). AFS was considered as a subgroup of CRS (chronic rhinosinusitis), one of the most common chronic diseases in USA. Current criteria defining AFS are the presence of clusters of eosinophils in mucus and the detection of fungi by direct histological examination and/or culture. A change of the terminology of AFS in EFRS (eosinophilic fungal rhinosinusitis) has been proposed. Eosinophils release toxic proteins able to destroy fungal elements. The recent results from the prospective study of the Mayo Clinic showed that CRS patients as well as healthy subjects have positive fungal culture from nasal secretions when adequate methods are used: the airborne fungi being in transit in any nose. These data suggest that the criteria defining EFRS are invalid or that EFRS exists in all CRS patients.

Françoise Symoens

# The ECMM Young Investigators Travel Award

*Kathleen Rafferty from the Dunhill Dermatology Laboratory of Kings College London Guy's Hospital was awarded the 2003 ECMM Young Investigators Travel Award during the 9th ECMM Congress in Amsterdam. You will find a short outline of her activities here following*

**I**t is a great honour for me to receive the ECMM Young Investigators Travel Award, as judged on the content of my poster entitled "Diagnosis of *Penicillium marneffe*i Infection by Phase and Species Specific Monoclonal Antibodies" (Authors: K. Rafferty, S. Youngchim, R. J. Hay and A. J. Hamilton) which was presented at the 9<sup>th</sup> Congress of the Confederation of Medical Mycology, 2003.

I am a final year PhD student in the Dunhill Dermatology Laboratory at Kings College London and my studies have focused on the development of immuno-assays for

the rapid detection of infections caused by *Penicillium marneffe*i. *P. marneffe*i was first isolated in 1956 as the causative agent of reticulo-endothelial disease in Chinese bamboo rats and appears to be endemic throughout Southeast Asia. One of the most striking features of this fungus is its thermal dimorphism, a unique feature of this one species in the genus *Penicillium*. Indeed, this ability to switch between morphological states in response to temperature is crucial to the ability of the organism to cause disease in man.

*P. marneffe*i has emerged as an opportunistic pathogen in recent years. Until the late 1980's very few cases of infection in man were reported. In 1988, the first case of *P. marneffe*i infection in an HIV infected individual was reported. Throughout the 1990's there has been a dramatic increase in the number of *P. marneffe*i infections associated with HIV infection in the area of endemicity. Indeed,

## About the ECMM Young Investigators Travel Award

### To poster presenters and speakers of the 10th ECMM Congress in Wroclaw

#### ABOUT THE AWARD

The ECMM Young Investigators Travel Award facilitates young, nonestablished investigators in medical mycology to make educational or practical study visits to medical mycology oriented departments or institutions in other European countries. As a rule, the Awardee will be selected from among those presenting a poster in the annual ECMM Congress. An outstanding oral presentation may also be considered.

The presentations are judged by a Prize Committee on the basis of the scientific quality, including novelty, reliability and significance, of the Awardee's presentation. The sum of the Award is presently 1000 EUR, to support the travel and living costs of one week. The institute visited is freely selected by the Awardee.

**Eligibility:** The Award is meant for young (not older than 35 years) persons who are citizens of European countries or work in Europe. The Awardee should not hold an established (other than grant-funded) post in medical mycology. It is also wished that the Awardee is a member of a national society or at least aims to apply for membership. Eligible first or presenting authors are preferred, but an outstanding team may be selected if it can direct the Award to junior coauthors who are eligible.

Those individuals and teams wishing to be considered as candidates of the Award in the 10th Congress of the ECMM in Wroclaw, 2004, are kindly asked to fill this form and submit it to the Congress Secretariat at first convenience.

*P. marneffeii* infection is now an AIDS defining illness throughout the area of endemicity.

Symptoms associated with *P. marneffeii* infection are non-specific and hence diagnosis on this basis is difficult. Presumptive diagnosis on the basis of yeasts dividing by fission can be made from clinical specimens. However, definitive diagnosis of *P. marneffeii* infection is by direct culture of the organism from clinical specimens. Therefore, there is a requirement for rapid diagnostic tests with high degrees of specificity.

In order to develop such assays, I used the immunomodulator cyclophosphamide to produce murine monoclonal antibodies (MAbs) to yeast phase specific antigens from *P. marneffeii*. Characterisation of these MAbs determined that they were reactive against yeast phase antigens from *P. marneffeii* and demonstrated minimal cross-reactivity against antigens from other medically im-

portant fungi. MAb 4D1 was selected for further investigations and characterisation of the protein recognised by this MAb suggested that it was a potentially significant marker of *P. marneffeii* infection. Deglycosylation studies suggested that this MAb recognised the protein backbone of a glycoprotein which was expressed in all *P. marneffeii* isolates tested. This glycoprotein also appeared to be exclusively expressed in *P. marneffeii* yeast cells (with very little change in expression during thermally induced phase transition of the fungus).

*P. marneffeii* yeast cells have been identified in lung tissue recovered from infected mice by immunofluorescence microscopy incorporating MAb 4D1. Initial data suggests that this MAb maybe a useful serodiagnostic tool as it has demonstrated reactivity against serum antigens from patients with suspected *P. marneffeii* infection in immunoblot assays. Therefore, further method development is un-

derway to evaluate the usefulness of this reagent in other assay formats. It is envisaged that this reagent will be a significant aid to the development of rapid diagnostic assays of *P. marneffeii* infection.

The 9<sup>th</sup> Congress of the Confederation of Medical Mycology was a highly informative meeting. The conference programme was indeed impressive and incorporated multiple simultaneous sessions containing presentations from highly respected scientists in the field of medical mycology. It was a truly enjoyable experience and the scientific committee should be congratulated for the organisation of such a rewarding conference. I wish to thank the ECMM for giving me the opportunity to further my skills and knowledge in the field through the Young Investigators Travel Award.

*Kathleen Rafferty*

#### AUTHORS' STATEMENT

- Concerning our presentation, titled: .....

- By authors (please mark the presenting author): .....

Presented  As a poster /  Orally (Tick square as appropriate);

Yes, we wish that our presentation is considered as a candidate for the ECMM Young Investigators Travel Award. Our presentation meets the eligibility criteria as follows (tick all squares that are appropriate):

**1) The following team members are aged 35 years or less:**

- First author  
 Presenting author  
 Other coauthor(s) (*who?*)

**2) The following team members do not hold an established position:**

- First author  
 Presenting author  
 Other coauthor(s) (*who?*)

**3) The following team members are citizens of, or work in, a European country and are either members of a ECMM member society or willing to submit a membership application if selected.**

- First author  
 Presenting author  
 Other coauthor(s) (*who?*)

To be signed by the first or presenting author:

Date / 2004,

To be submitted as paper, fax or email to the Congress Secretariat (Congress Care, Muntelbolwerk 1, P.O. Box 440, 5201 AK's-Hertogenbosch, The Netherlands, fax: +31 73 690 1417, email: [info@congresscare.com](mailto:info@congresscare.com). To facilitate handling, we kindly recommend submission before June 1<sup>st</sup>, 2004. However, forms given at the Congress registration desk at latest June 17<sup>th</sup>, will be considered.



## Glyn V. Evans Memorial Lecture



Professor Glyn Evans passed away suddenly on August 4<sup>th</sup> 2003 after several bouts of pneumonia. His passing was a shock to all who knew him and a huge loss to his family, friends and colleagues. To commemorate Glyn's contribution to Mycology, the President of the European Confederation of Medical Mycology and long-time friend of Glyn's, Professor Frank Odds delivered the Glyn Evans Memorial Lecture on the opening day of the ECMM/TIFI meeting in Amsterdam.

Frank began by detailing the chronology of Glyn's career. Glyn's interest in medical mycology began as a Research Assistant at the University of Glasgow in 1965 working with Professor Jimmy Gentles. He later became an Assistant Lecturer there in 1968, before moving to Leeds to take up post as a Lecturer. Notable amongst the events in Leeds was the hiring of a Post Doc by Glyn in 1972 – a certain Frank Odds! Glyn became Senior Lecturer in 1979 and at this point he became more heavily involved with the committees of both the British Society for Medical Mycology (BSMM) and also the International Society for Human and Animal Mycology (ISHAM). Over the next 20 years, Glyn became Secretary and President of both Societies, as well as serving as a member of the ECMM committee. His involvement in international mycological activities also increased over this time, with Glyn traveling extensively and presenting at many national and international meetings as a guest speaker or presenting results from his research group. In 1993 Glyn became the Professor of Medical Mycology, a developmental chair from the University of Leeds awarded in recognition of the MSc in Medical Mycology, which he initiated and set up in the Department of Microbiology. Finally, after more than 30 years in Leeds, Glyn returned to Cardiff in 2001, to take up a chair at the University of Cardiff to set up a mycology laboratory, within the then PHLS Microbiology department.

Apart from Glyn's contribution to the BSMM, ISHAM and the ECMM, Frank reviewed the significant contributions that Glyn had made to medical mycology research. His interests and publications covered areas as diverse as tinea pedis, serological diagnosis of mycoses, dimorphism in *Candida albicans*, the epidemiology of mycoses, antifungal therapy and aspergillosis. Frank and Glyn shared a common interest in strain typing and Frank listed several publications by Glyn on strain typing of *Candida* species and dermatophytes. Frank described the main advances in strain typing that had occurred during Glyn's career, from serotyping *C. albicans* in the 1970's, through biotyping and morphotyping in the 80's, DNA fingerprinting and sequencing in the 90's, to the advent of multi-locus sequence typing (MLST) of *Candida* species in 2000. MLST offers many advantages over previous strain typing methods, including its potential for automation, objectively obtained data and portability, with many labs able to share data on a single internet site. Collaboration between Frank's group in Aberdeen and a group at the Institut Pasteur in Paris, has defined seven gene fragments that offer the best discrimination for *C. albicans*. He showed data from his lab, showing that MLST and subsequent analysis allowed highly related strains to be placed into related "clonal clusters".

Frank ended his lecture by speculating that if Glyn had been attending the ECMM, they would have been discussing MLST and Glyn would have been deciding how he could apply the technique in the lab in Leeds – continuing to develop the lab and pursue his interest in strain typing.

The lecture captured the many aspects of Glyn's personality that had made him so successful, well respected and popular. It left many of the audience feeling the loss of someone who was not only an excellent and gifted scientist and teacher, but who made medical mycology conferences more fun. Frank summed it up in his last slide "Thank you for so much, Glyn, and farewell from us all!"

Ruth Ashbee

## See you in Berlin

There is no doubt that all participants of the congress in Amsterdam have definitely profited from this event. Not only the hospitality of the bright city with its various architectural and cultural attractions was impressive but also the scientific presentations of this meeting were outstanding. This joint-meeting of EORTC and ECCM provided an interdisciplinary forum where experts from all the different sites of Europe replenished by a few scientists from overseas presented excellent overviews on various subjects from the whole field of mycology. Progresses in the knowledge of basics of the biology, genetics and ecology of fungi were reported as well as the clinical implications including immunology, diagnostic strategies and treatment regimens. The multiple facets of medical mycology were still further depicted by the stimulating poster sessions. The authors coming from different corners of Europe and other parts of the world have taken advantage to discuss their results with the community.

It will be a great pleasure but also a challenge for the organizers of the next joint-meeting of the EORTC, ECMM and DmykG (German speaking society of mycology), which will take place just in the centre of Berlin from Sunday 23 to Wednesday 26 of October 2005, to repeat this success. All mycologists are cordially invited to attend this congress which will also cover a large scale of aspects in the field of mycology. The city of Berlin carrying still some scars from the recent history is on the move and is a symbol of progress. This will be the "Leitmotif" for the forthcoming meeting.

Herbert Hof, DmykG President  
Markus Ruhnke, Vicepresident



# Wroclaw 2004: the 10th Congress of the ECMM



**The 10th ECMM Congress will be hosted by the Mycological Section of the Polish Dermatological Society in Wrocław, Poland, on June 17-20, 2004.**

The development of medical mycology in Poland resembles the progress of mycology in other countries. In the 1950s a prominent figure who represented Polish mycology was Prof. Jan Alkiewicz, a dermatologist and microbiologist. He published monograph entitled: *Skin Mycoses* in 1955 and organized the department of Medical Mycology at the Poznan Medical University in 1959. In the 1960s a group of dermatologists, mainly from Poznan, Warsaw and Szczecin decided to set up a regular mycological organization. The 1<sup>st</sup> International Mycology Conference took place in September 1963. The conference focused on the classification, epidemiology of dermatophytes and immunology of infected hosts. More than 180 scientists, including 40 foreign representatives, took part in the meeting. On the third day of the symposium the first meeting of the members of Mycological Section of the Polish Dermatological Society took place. During the meeting the first board was elected: Prof. Alkiewicz became its president and Poznan was chosen as the headquarters of the organization. During the next Mycological Conference in Warsaw in 1966 it was decided to invite veterinary surgeons and representatives of non physician specialists to the society. Prof. Alkiewicz next published the handbook: *Medical Mycology* in 1966. In the historical part of the book he appreciated the contribution of Polish authors to the creation of this discipline. For instance Jan Jonston from Szamotuly, who lived in 17th century, wrote about hair and nails destroyed by animal parasites. Most probably Jonston meant fungal infections. Another Polish scientist, Robert Remark from Poznan, discovered a plant parasite in *scutula favosa* in 1837.



In 1967 the main event was the 2<sup>nd</sup> International Symposium of Medical Mycology. It was held in October in Poznan. Among 131 participants at the meeting there were 15 from European countries and the USA. The majority of presentations were delivered by foreign authors. Prof. Alkiewicz, Prof. Sowinski and Dr. Stauber were nominated to become the members of editorial board of Berlin's medical journal: *Mykosen*. The cooperation between Polish and European mycologists was demonstrated in publications in journals. *Przegląd*



*Dermatologiczny* published foreign papers and *Sabouradia*, *Westnik Derm and Wenerol*, *Mykosen*, *Mycopathologia et Mycologia applicata*, *Arch f klin und exp Dermatol*, *Dermatologische Wochenschrift* published papers written by Polish authors. Prof. Prochacki and Prof. Sowinski were heads of section in 1970s and 1980s. Our organization has always been interested in maintaining contacts with ISHAM, the world's association of mycologists. During the 6th Symposium which took place in Wrocław in 1989 a new council was elected. Prof. Eugeniusz Baran became the president. In 1993 the idea of creating the European Confederation of Medical Mycology was developed. The first meeting took place on the Jan 15th, 1993 and dr. Marek Ziarkiewicz participated in it as the representative of Polish section. Many Polish members took part in the 1st Symposium of the ECMM in Paris in 1993. The Polish Section has published the quarterly journal *Medical Mycology (Mikologia Lekarska)* since 1994. The journal is in Polish and English and is registered in EMBASE.

At the moment, the Mycological Section of the Polish Dermatological Society consists of 100 active members, who are involved in scientific research apart from their medical practice. Its main area is development of modern methods in mycological diagnosis, epidemiology of fungi infections, description of clinical features of skin and organ mycoses, and evaluation of the efficacy of new drugs. Many handbooks in Polish were published in recent years: *Atlas of fungi diseases of respiratory system*, *Mycoses and their management*, *Basic medical mycology*.

Rafal Bialynicki-Birula

# Two Views of the 15th ISHAM Conference in San Antonio, 2003

The 15<sup>th</sup> ISHAM was held in San Antonio, Texas from May 25 to 29, 2003. It was rated by the participants as a very high-quality and successful scientific meeting. A very nice mixture of basic mycological science and clinical issues (together with some Texas-style social events and cuisine) prevailed during the five days of the meeting. Several cutting-edge discussions took place on pathogenesis, immune response, diagnosis and management of fungal infections. Some of the basic topics covered by excellent scientists from all over the world were: new insights in pathogenesis and innate immunity against fungal pathogens, various issues in the diagnosis of invasive mycoses, epidemiology of fungal infections, fungal genomics and fungal virulence factors. Among the more clinically interesting topics, the issue of susceptibility testing and the *in vitro/in vivo* correlation was discussed. Fungal infections in transplantation

and fungal infections of increasing significance were also discussed. New antifungal agents and new choices of antifungals could not but be a part of very active discussion as well as the topic of antifungal drug resistance. A round table with high profile speakers on different approaches to management with particular discussion of the roles of prophylaxis, empirical, pre-emptive or pathogen-driven therapy was very well-attended by the participants. The meeting was closed with discussions on fungal vaccines, dermatological fungal infections, a point-counterpoint discussion on immunotherapy and a discussion on teaching and training medical mycology and the role of reference laboratories. It was indeed a very successful event thanks to the local organizers, the speakers and all the participants.

*Emmanuel Roilides*

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## Topics in the area of host-pathogen interactions

The 15<sup>th</sup> Congress of the International Society for Human and Animal Mycology (ISHAM) was held in San Antonio, Texas in May 2003. The organising committee arranged great social events, including a banquet and a rodeo, and a programme of speakers from all over the world. For me, this was a great meeting to get updates on the research being carried out in the area of host-pathogen interactions.

Two talks focussed on fungal mannosylated molecules and host immune response: Daniel Poulain spoke about phospholipomannan and *Candida albicans*-host interplay and Stuart Levitz described interactions between *Cryptococcus neoformans* mannoproteins and dendritic cells. Amy Herring also discussed the role of dendritic cells during *C. neoformans* infection. Simon Newman discussed both dendritic cell and macrophage interactions with the fungus *Histoplasma*

*capsulatum*, describing how *H. capsulatum* survives the interaction with macrophages, but is digested and degraded by dendritic cells.

The role of the *C. neoformans* capsule in the interaction of the fungal cells with host phagocytic cells was the subject of Arturo Casadevall's presentation. Bruce Klein then talked about the role of morphogenesis in the ability of *Blastomyces dermatitidis* to evade immune responses in the host. Immune responses to infection by various fungi, including *C. albicans*, *C. neoformans*, *Pneumocystis carinii*, *Aspergillus fumigatus* and *Paracoccidioides brasiliensis*, were covered in talks presented by Tom Kozel, Judd Shellitto, Cory Hogabaum and Luz Elena Cano.

Microarray analysis was the method chosen to examine *C. albicans*-macrophage interactions in the presentations by Mike Lorenz and Malcolm Whiteway. Mike

Lorenz's talk concentrated on the interaction from the fungal point of view, while Malcolm Whiteway's group looked at transcriptional changes that occurred in both fungal and host cells during their interaction.

Some of the most interesting talks, from my point of view, were those examining the interactions of *C. albicans* cells with endothelial and epithelial cells, presented by Scott Filler and Paul Fidel. Scott Filler described interactions between endothelial cells and *C. albicans*. Fungal hyphae were shown to induce pseudopod formation, resulting in their being actively pulled into the endothelial cell, allowing crossing of this barrier. Some of the experiments leading to identification of an endothelial cell receptor allowing *C. albicans* binding to endothelial cells were also described. Paul Fidel followed this by describing oral and vaginal epithelial cell anti-*C. albicans* activity. Oral epithelial cells were shown to have stronger anti-*Candida* activity compared to vaginal epithelial cells. The properties of the interactions between *Candida* and epithelial cells were described, which leads to a



static, non-inflammatory anti-*Candida* response. It was suggested that this was an important anti-*Candida* defence mechanism and that in women with recurrent vulvovaginal candidiasis (RVVC) the epithelial cells have lower anti-*Candida* activity. In his second talk, Paul Fidel described the fascinating live human model of vaginal candidiasis used in his research. In the model, women with no history of RVVC, and those with an infrequent history of the condition, were infected with *C. albicans*. Women with no history of

RVVC were found to have a low rate of infection, but those with some history of the condition had increased rates of symptomatic infection. Results from these experiments suggested that VVC is associated with signals that occur following *C. albicans*-vaginal epithelial cell interactions. It was also suggested that there is only a fine line between asymptomatic and symptomatic infection. The final conclusions from Paul Fidel's talks were that the oral mucosa had a number of host defences, hence disease is

rare, and that the vaginal mucosa has little defence, leading to disease occurring more frequently.

In addition to the conference sessions concentrating on host-pathogen interactions, there were many others that focussed on other aspects of medically and veterinary important fungi. Many of these were also complemented by the large number of informative posters also presented at the conference.

Donna MacCallum

## Topics in fungal genomics, epidemiology of fungal infections, evolution and population genetics

The "15<sup>th</sup> Congress of the International Society for Human and Animal Mycology", held in San Antonio last May, covered many of the most important topics in mycology, with concurrent sessions based on fungal taxonomy, basic, clinical and applied mycology, evolution and population genetics, emerging fungal infections as well as host-pathogen interactions. Many experts in the fields provided an exhaustive picture of the state of the art of the topic mentioned before. Since my work is mainly focused on the epidemiology and evolutionary biology of *Candida albicans*, I primarily attended sessions and talks oriented to fungal genomics, epidemiology of fungal infections, evolution and population genetics.

In the genomic era, in which the sequencing of many genomes of important microbial pathogens is close to completion, Pete Magee, University of Minnesota, gave an interesting overview on the insights from the genome sequencing of *C. albicans*. The genome has been sequenced to a depth of 10.9 fold and been scanned for polymorphisms, a search that revealed an average frequency of 1 change in every 237 bases. However, the polymorphisms

were not evenly distributed across the genome, with some chromosomes showing a very low ratio (chromosomes 3 and 7, 1.78 and 1.73, respectively) and others, such as chromosome 5, which includes the mating type-like locus, characterized by a very high rate of polymorphism (9.48).

Sequence based approaches for routine and unambiguous characterization of microbial isolates (such as multi-locus sequence typing, MLST) have been exploited for several bacterial species and for *C. albicans*. However, since no complete sequencing of the genome of other *Candida* species has been so far available, it is very difficult and time consuming to set up a sequence-based typing system for these species. In this respect, very close to my own research, was the work presented by Dodgson *et al.*, University of Manchester, on MLST applied to *Candida glabrata*, the second most common *Candida* species responsible for systemic infection. The identification of the appropriate set of six loci followed a pilot study performed on 10 unrelated strains with 11 *C. glabrata* gene fragments. The most variable loci were *FKS*, *LEU2*, *NMT1*,

*TRP1*, *UGP1*, and *URA3*. 30 different sequence types were identified in a collection of 110 isolates coming from both different anatomical and geographical regions. Strain relatedness analysis showed that distinct clades of *C. glabrata* prevail in different region of the world.

An important contribution to the ongoing projects in the field was given by the poster session also. Lott *et al.*, CDC Atlanta, presented an interesting poster based on the attempt to set up a MLST scheme for *Candida parapsilosis*. The failure of the approach was due to an unexpected finding: the sequencing of more than 3 kilobases of coding regions from 5 genes in 10 unrelated strains showed no single nucleotide polymorphism in any of the sequenced regions, possibly indicating that this species has a modern origin. This implies an evolutionary more recent association with the human host. I was given the opportunity to present my results on *C. albicans* MLST and I have received important feedback, which I can incorporate in my future work.

Arianna Tavanti

# Workshops launching the ECMM Working Group on Pseudallescheriasis

The ECMM Working Group on Pseudallescheriasis will start its activities this Spring. We would like to invite anyone who is interested to participate in the workshops and to become member of our team.

Aim is to focus European attention on the much overlooked but highly virulent systemic and disseminated infections by *Pseudallescheria boydii* (= *Scedosporium apiospermum*) and its relative *Scedosporium prolificans*. Due to the therapy-refractory nature of these fungi, morbidity and mortality after infection is high. *P. boydii* is also a frequent colonizer of the lungs of patients with cystic fibrosis. The low incidence of the organism in outside air suggests the presence of mechanisms of efficient colonization and invasion of the inhalative tract. A relatively high degree of virulence is surmised. Therefore the infectious diseases united under their umbrella-term 'Pseudallescheriasis' provide a potent model for the development of new strategies for control of emerging opportunists.

Revealing the natural occurrence of the fungi will lead to understanding of the possible sources of contamination and infection routes. The consortium will obtain insight into the genetic variability of these fungi. There is a high degree of genetic diversity within the species, which diminishes the predictive value of standard antifungal susceptibility data. Improved diagnostics, at the generic level and down to the (sub)specific level, can be developed and disseminated to the European clinician. This is expected to greatly stimulate awareness of the disease.

The synergistic approach of the pan-European network will lead to a central collection and reference centre with a public data bank containing information on strains and their genetic make-up, clinical cases, and antifungal susceptibilities. This expertise centre will be housed at IHEM (Brussels, Belgium) and CBS (Utrecht, Netherlands), with nodes in all countries covered by ECMM.

We will start with workshop at the Centraalbureau voor Schimmelcultures (CBS), Utrecht, The Netherlands on 16 and 17 April, 2004. The workshop will be open to anyone who wishes to contribute to the study of *Pseudallescheria* and *Scedosporium*. Ample opportunity will be provided to present current

work related to this theme in your own institute, and cooperative links will be established. Research questions will be formulated and practical needs will be discussed. The international research teams will exchange protocols, to benefit from each others experience. The possibility of EU-funding for the network will be considered.

The number of participants is limited to 50. For application, surf to [www.cbs.knaw.nl](http://www.cbs.knaw.nl) to "ECMM Workshop Pseudallescheria" and fill the form before 15 March 2004.

In addition to this Workshop, a meeting will be organized on 17 June, 2004 as a pre-congress activity at the ECMM Congress at Wroclaw. Those who have missed the Workshop at CBS will be updated there.

**Presentations** - At the Workshop, all participants are requested to give a presentation about their current work, possibilities and future plans, preferably using Powerpoint for PC. There are two categories: full research papers of max 30 min, and introductions of current routines and surveillance of max 15 min. Please inform us on April 12 (see deadlines) in which category you wish to be scheduled. You are requested to bring your presentation on a CD; if you bring your material in another form, please contact us in advance.

## Programme Outline

### Friday 16 April

14.00 -14.30 Sybren de Hoog: Welcome and introduction

14.30-17.00 Presentations by participants.

17.00-19.00 Reception and snacks at the CBS; poster viewing; meet the staff.

19.00-22.00 Dinner at Hotel De Biltische Hoek.

### Saturday 17 April

09.00-12.00 Presentations by participants.

12.30-14.00 Lunch.

14.00-17.00 Discussions and planning; main lines of an EU project to be written.

17.00-22.00 Amsterdam tour and dinner. 23.00-back at the hotel.

**Deadlines** - 15 March - Registration deadline. With subscriptions received after that date we cannot guarantee full facilities and accommodation.

12 April - Electronic submission of presentation by e-mail. We will use your material to make the final programme, and hand-outs for participants during the workshop. Each participant will receive a CD with all presentations at the end of the Workshop.

**Hotel Accommodation** - All participants

will be accommodated in the hotel "De Biltische Hoek", address De Holle Bilt 1 De Bilt, at about 3 km from the CBS. Reservation will be done automatically for two nights by the organization; please do not book any hotel by yourself. You will be charged at the front desk of the hotel when checking out. Accommodation will be based on single rooms of unit quality; if you wish otherwise, please let us know before March 15. At arrival in Utrecht, it is possible to travel directly to CBS (see below) with your luggage. If you prefer to go to the hotel first, it is recommended to take a taxi from Utrecht Central Station (at your own expense).

**Costs** - All activities during the Workshop are free of charge. This includes all transportation between Friday 14.00 and Saturday 23.00, expenses such coffee, tea, lunches and dinners, and a visit to Amsterdam with fares back to the hotel. However, the Workshop does not support travel to and from The Netherlands, nor hotel accommodation.

**Weather and Dress** - Spring weather in The Netherlands is notoriously unpredictable. Average temperatures mid April are 12-18°C. Please bring raincoat, umbrella and pullover.

**Venue and Transport** - Utrecht is reached easily from Schiphol airport by taking the train in the directions Amersfoort or Almere, change after about 8 minutes at Duivendrecht (platforms to Utrecht are at the second floor). Trains run every 15-30 minutes. The total time required to reach Utrecht station is about 35 minutes. From the Utrecht station bus line 12 is running to the Uithof every 5 minutes. It takes about a quarter to reach the campus, get off at stop 'Bestuursgebouw'. From there the CBS is still about 10 minutes walk. For details, and transport by car, see our website [www.cbs.knaw.nl](http://www.cbs.knaw.nl).

**Letter of Invitation** - Applications for a letter of invitation in order to help participants to obtain financial support or visa should be received not later than 1 March. The letter will be sent by mail only.

**Contact** - If you have any questions concerning the programme, please contact Sybren de Hoog, [de.hoog@cbs.knaw.nl](mailto:de.hoog@cbs.knaw.nl), +31-30-2122663. For any administrative question or inquiries concerning your accommodation, please contact Tineke van den Berg, [van.den.berg@cbs.knaw.nl](mailto:van.den.berg@cbs.knaw.nl), +31-30-2122645.

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