

International Aerobiology NEWSLETTER

DECEMBER 2007

ISSUE N° 65

ISBN 0357 451

BI-ANNUAL PUBLICATION OF THE INTERNATIONAL ASSOCIATION FOR AEROBIOLOGY

editorial note

Maybe the most important decision was that the EC has voted as decided during the GA in Neuchâtel and the that

the **ICA 2010** will take place in

Buenos Aires, Argentina

organized by María Gabriela Murray. We wish Gabriela good luck for the preparation works!

The last ICA promised to show us the way «towards a comprehensive vision», the coming one adopts this vision in full swing, demanding «expanding aerobiology» what means that multidisciplinary applications take increasingly priority. Most of the forthcoming events announced in this newsletter seem to testify that development of our science is heading indeed forcefully in such directions.

Important note:

Christine says only 33 members paid their membership for 2007 so far. This is not enough to sustain our society. We will have to make this a real focus in the coming year because we will not be able to sustain Aerobiologia either if the members don't pay. If you have not yet paid your membership fee (and thus have access to the online version of Aerobiologia), please use the form on page 13 to pay your dues.

Journals:

To subscribe GRANA, IAA members can contact the customer services directly via tf.enquiries@tfinforma.com and subscribe by mentioning that they are IAA members (with full name of the Association) and subscribing GRANA.

AEROBIOLOGIA: electronic subscription is automatically included with membership to IAA.

a selection of aerobiology conferences and meetings 2008:

- January 21-23: final final meeting of the POLLEN project and Core Group meeting of COST 203 Helsinki, Finland
- March 29-30: European Pollen Symposium Bad Lippspringe, Germany
- June: PAAA meeting Amherst MA, USA
- August 12-16: European Symposium on Aerobiology Turku, Finland
- November 21-23: European Symposium Ambrosia Aix-les-Bains, Savoie, France

Multidisciplinarity: forecasting pollen concentrations on European scale

COST ES0603

Assessment of production, release, distribution and health impact of allergenic pollen in Europe (EUPOL)

is a new COST Action started in 2007 (see details for the COST Action networking mechanisms in <http://www.cost.esf.org>). The main objective of EUPOL is to set up a multi-disciplinary forum for critical review of existing information on allergenic pollen in Europe and its representation in assessment and forecasting systems.

The Action concentrates on:

- identification of the critical gaps in the current knowledge
- better co-ordination of on-going research
- development of a comprehensive strategy and specific action plan for improving the scientific knowledge and converting the findings into integrated assessment systems
- strengthening the dialogue with end users.

The Action is shaped around three work packages:

WP1 Pollen production and release, which concentrates on:

- review and harmonisation of the existing direct and indirect information on distributions of key pollen species from local to European scales
- review and evaluation of the existing and developing models of pollen emissions over Europe, their strengths and weaknesses
- utilisation the phenological descriptions of pollen production and release, as well as their dependence on short- and long-term external forcing
- analysis of the strengths and limitations of satellite observations and possibility of their near-real-time assimilation for improving the pollen analysis and forecasting

WP2 Pollen distribution in the atmosphere considers:

- means of observational and modelling evaluation of pollen distribution in the atmosphere
- existing models of pollen dispersion at various spatial and temporal scales
- physical and chemical characteristics of pollen grains aiming at a coherent description of their atmospheric dispersion, transformation and removal
- existing evidence of pollen inter-action with atmospheric pollutants aiming at quantitative description of such processes

WP3 Impact assessment, user links and applications concentrates on:

- the main characteristics of pollen distribution in Europe – historical records, spring pollen seasons, current trends – and their impact on society;
- the dialogue with end users, identification of their requirements, needs and quality criteria for pollen information systems;
- target users groups and their specific needs

In order to facilitate the exchange with other communities and activities, all three work packages pay particular attention to the cross-cutting issues, such as:

- to involve the key actors into the assessment work, strengthen the horizontal and vertical interactions between the research and application organizations and activities
- to encourage and promote the mutually-beneficial flexible data exchange across the regions, organizations and disciplines
- to evaluate the links between the different research areas (biology, meteorology, applied mathematics and medical science) and find out the complementarities of the available information, possibilities for evaluation of the existing or developing methodologies and areas where the synergy between the disciplines would bring the maximum added value.

More information can be obtained by contacting the Chair of the Action:

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CONFERENCE REPORTS

Aerobiology PAAA2007

Aerobiology 2007, the Annual Symposium of the Pan-American Association of Aerobiology (PAAA) took place at the Penn State University, University Park, Pennsylvania, USA, from June 8 to June 11, 2007. The Conference was followed by the Spore Camp on June 12 and 13, 2007, held at the Fusarium Research Center in the Department of Plant Pathology. The Conference Chair for Aerobiology 2007 was Annalisa Ariatti (Penn State University). The Scientific Committee was composed by Scott Isard (Penn State University), William Bahnfleth (Penn State University), Larry Syzdek (New York State Museum), and Annalisa Ariatti (Penn State University). The Organizing Committee members were Annalisa Ariatti (Penn State University), Regula Gehrig (MeteoSwiss), James Freihaut, (Penn State University), and Scott Isard (Penn State University).

The Symposium was preceded by two Pre-Conference Workshops, which were offered Friday June 8. The first workshop (Nuts and Bolts of Indoor Allergen Assaying) focused on a demonstration of immuno-assay enzyme linked analysis (ELISA) techniques with hands-on laboratory activities. The second workshop (Modeling of Indoor Airflows and Aerosol Transport Using CONTAMW) included an overview of the impacts of building construction, HVAC (Heating, Ventilation, and Air-Conditioning) systems, weather conditions, and aerosol

Universities (departments of Agronomy, Architectural Engineering, Bioclimatology, Biology, Botany, Geography, Environmental and Health Sciences, Medical Sciences, Microbiology, Plant Biology, Plant Pathology, Zoology) and private laboratories.

The welcoming reception was held Friday night at the Nittany Lion Inn, where all participants got reacquainted with old friends and met new colleagues. The official opening of the scientific sessions took place on Saturday morning with a welcoming address from the Dean of Research in the College of Agricultural Sciences at the Pennsylvania State University and opening remarks from the Conference Chair and the Presidents of the PAAA and IAA. Nine sessions, ranging from general aerobiology to aerobiology and health, aerobiology and agriculture, indoor aerobiology composed the scientific program. Five invited speakers delivered plenary lectures which provoked interesting and productive discussions.

A Ragweed Discussion Group took place Sunday afternoon and was led by Regula Gehrig and Scott Isard. The conceptual aerobiology process model was used to focus the discussion on the components of ragweed life history that are needed to build a forecasting system for this weed species. The long-term goal of this discussion group is to develop and operate an Internet-based ragweed pollen forecasting system for Europe and North America.

The Conference ended with the Unknown workshop on Monday afternoon. For many PAAA attendees this workshop was one of the most valuable components of the conference. This year, as usual, the participants brought several digital photos of their unknown spores that they encountered during their research work. Of particular interest were the spores coming from a research study conducted in Hawaii by Mike Muilenberg and Christine Rogers.

The Spore Camp followed the Conference and was held at the Fusarium Research Center in the Department of Plant Pathology on June 12 and 13. The Center contains the world's largest collection of cultures of Fusarium, one of the most important genera of toxigenic and pathogenic fungi. The Spore Camp teachers were David Geiser (Penn State University), Christine Rogers (University of Massachusetts), and Mike Muilenberg (University of Massachusetts). The participants went on two field trips, the first at the Alan Sieger State Forest and the second at the Arboretum of the Pennsylvania State University. Many fungi were collected in State Forest, where the participants had also a nice informal lunch. A Burkard trap was operated at the facilities adjacent to the Arboretum to collect airborne pollen and spores. Laboratory activities, including spores identification, took place in the afternoon. Everybody participated with great passion to the Spore Camp and several people were so taken by their laboratory tasks that forgot to have a break for the afternoon snacks.



characteristics on air flow and contaminant transport in buildings. The participants had also the opportunity of using the National Institute of Standards and Technology's CONTAMW software and to model indoor air flow and contaminant transport.

About 50 participants were present with an outstanding representation from countries outside the domain of the Pan-American Association of Aerobiology, such as Croatia, France, Hungary, India, Italy, Kuwait, Poland, Spain, and Switzerland. The Institutions represented were mostly

Sunday night at the Conference Banquet two student fellowships, offered by Lanzoni srl, were bestowed to Tommaso Torrigiani Malaspina from Italy and jointly to Felix Rivera Mariani and Elizabeth Quintero from Puerto Rico. Tommaso gave an excellent presentation on "The impact of the expected climate change on Cupressaceae main pollen season in central Italy" and Felix and Elizabeth had both an outstanding oral presentation and a well structured poster on "Pollen and fungal spores in the atmosphere of San Juan, Puerto Rico: a retrospective study from May 2005 until May 2006".

The high quality of the presentations, the interested stirred by the plenary talks, the variety of countries represented, the exciting formal and informal aerobiological discussions, and the dedication of the Spore Camp teachers shaped the success of Aerobiology 2007.

Annalisa Ariatti
Conference Chair

30 years pollen information service in Tirol

For the 30th anniversary of the pollen information service in Tirol, Prof. Sigmar Bortenschlager, director of the Institute of Botany in Innsbruck (Austria), organised in that city a very interesting scientific meeting that took place on 23rd of October 2007. Colleagues from Austria and surrounding countries (Germany, Hungary, Italy, Switzerland) and even from France and Russia, were present to celebrate this long term effort and wish the pollen service a bright continuation. After the end of the local pollen season, this event was honoured by Mother Nature with the first snow flakes.

This meeting offered the opportunity to hear and discuss about the various aspects and uses of pollen data from a very integrative point of view. The first part was dedicated to the airborne pollen measurements in the Alps, and a prominent place naturally given to the development of the monitoring network in Tirol. The impact of climate change was evidenced from the long term series, also presented as posters. The presentations were then oriented towards the health impacts of airborne pollen. The importance of co-factors such as pollution was pointed out. Pollen was also demonstrated as a good marker of the quality of the environment and its importance in forestry was underlined. Austria is well-known as a pioneer in the collection and valorisation of pollen data. The last update of the European Allergen Network EAN database was presented. An assessment of the quality of information on the Internet allowed designing the improvements to be realised. A special web-page will be set up in collaboration between Austria and Switzerland to present attractive information for the EURO 2008 football event. To conclude, an important part of the discussion was then oriented towards an actual and increasing problem: the success of neophytes and the appearance of new allergens in Europe. The spread of ragweed is obviously the main concern in that topic. The need for more intensive collaboration for fighting this plague was recognised by all the participants.

Bernard Clot

8th Basic Course on Aerobiology

The 8th Basic Course on Aerobiology took place in Novi Sad, Serbia from 12-18 July 2007. 26 students from 10 European countries attended and successfully completed the 8th BCA 2007.

Contents were

• **LECTURES** (15 hours) which covered topics such as: airborne particles (aerodynamics, dispersal); plant identification; pollen (development, biology, function, production, release, structure, morphology); fungal spores (development, biology, function, production, release, structure, morphology); allergy; sampling in aerobiology (Hirst type volumetric trap, microscopy); analysis of samples collected by Hirst type volumetric trap; basic statistics in aerobiology; forecasting in aerobiology (methods, pollen and meteorology); EAN (European Aerobiological Networks) and EPI (European Pollen Information System); quality control in routine

aerobiological monitoring

• **PRACTICAL EXERCISES** (25 hours) covered:
operation of a volumetric trap; sampling surface and slide preparation; Airborne pollen/spores concentration calculation; data presentation; pollen identification (25 main European types); fungal spore identification (12 types); scanning and counting of slides; Data input software with the option for automated data transfer in suitable format for EAN database.

• **EXAMINATION** (theoretical test; scanning, identification and counting of test slides)



Although we had very hot weather (over 40°C), everyone enjoyed the excursion to Subotica at mid time of the course, where after dinner dancing continued until late night.



The course was organized by:
Prof. C. Galan (Spain), Prof. G. Frenguelli (Italy), Dr. M. Smith (United Kingdom), Prof. S. Jäger (Austria), Dr. A. Stach (Poland), Dr. B. Clot (Switzerland), Dr. D. Jaric (Serbia), Dr. I. Bustos Delgado (United Kingdom), Dr. M. Thibaudon (France), Mrs A. Kofol-Seliger (Slovenia), Mr C. Lanzoni (Italy), Mr P. Radisic (Serbia), Mr B. Sikoparija (Serbia), Mrs A. Dedijer (Serbia), Mrs M. Mitrovic-Josipovic (Serbia), Ms N. Camprag (Serbia)

Branko Sikoparija

NEW TECHNOLOGY



REPORT FROM THE MONALISA PROJECT: a MONitoring Network of ALergens by Immuno-SAMpling



The University of Évora, Portugal, has held from 14th to 15th of December 2006, the second steering committee of Monalisa project, a European Life/Environment program whose main objective is to demonstrate the use of an innovative cyclonic air sampling equipment in association with a new method of immunological analysis to measure the amounts of pollen and fungal allergens in the air.

The main scientific and technical objectives are to:

- Measure antigenicity / allergenicity of particles in the air instead of quantifying pollen grains (and fungi's spores) by their morphology.
- Set up a classification of pollen grains and other microbiological particles depending on their allergen load.
- Be able to detect both pollen grains and smaller particles.
- Set up common analysis protocols in view of standardisation.
- Demonstrate the robustness and efficiency of the air sampler in 7 different bio-geographical climates.

The final target is to prepare the establishment of an automated and on line collection and analysis system as the new standard tool to monitor pollen grains and fungi's spores according to allergenic potential influence.

To achieve these objectives, the MONALISA project gathers experts in the complementary and needed fields for the project, namely palynology, immunological analysis and air collection technology. As such, the consortium is composed of seven aeroallergen monitoring stations at national level throughout Europe representing different bio-geographical and climatic areas and one technology provider (BERTIN) that has developed an automated air sampling system delivering liquid vials ready to be analysed for pollen grains and other smaller particles with allergenic potential detection.

These outputs will enable the MONALISA project to contribute to the enhancement of the capacity for assessing air quality and to deliver better information for clinicians and atopic people. Moreover, demonstrated techniques could be used for other organisms that cannot be analysed thanks to microscopic techniques (fungi's spores / moulds, virus, bacteria) and could also be used in other health fields such as agriculture (bio-safety, control of GMO dissemination).

A balance of in field demonstration along 2006 was done and



By now, the research team is composed by 7 European partners:

Bertin Technologies (FR),
Reseau National de Surveillance
Aérobiologique (FR),
University of Turku (FI),
University College of Worcester
(UK),
University of Cordoba (ES),
University of Evora (PO),
Adam Mickiewicz University (PL)
and a collaboration of
MeteoSwiss (CH)



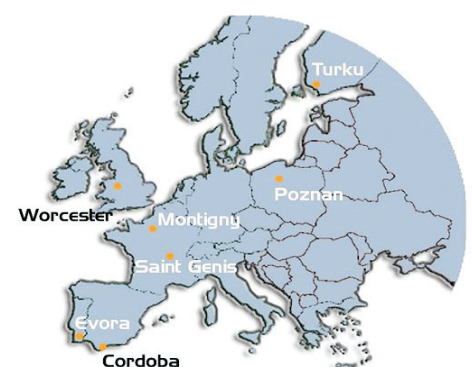
results confirmed in general, the good correlation between the Coriolis sampler and Hirst-type samplers, in spite of some diversity between the countries and some technical problems.

Several protocols for the detection of airborne allergens by a sandwich-ELISA method were developed and tested. Auli Rantio-Lehtimäki from the University of Turku, Finland presented her results with ELISA tests for the detection of *Betula* and Michel Thibaudon, from RNSA, France, presented an ELISA method for *Alternaria*. Jean Emberlin and team, from the University College of Worcester, UK, gave their results of several tests in order to explore various techniques using polyclonal antibodies and a Phl p5 ELISA kit from Indoor Biotechnologies using a monoclonal antibody approach. Carmen Gálan and team, from the University of Cordoba, Spain, presented an ELISA protocol for the detection of *Parietaria* by an Indirect-ELISA. Alicja Stach from the Adam Mickiewicz University, Poland, and Rui Brandao from University of Evora, Portugal discussed several aspects of their participation in the project.

Jean Emberlin from the University of Worcester, UK, presented the structure for a future protocol to quality control.

Improvements had been incorporated in a new version of Bertin sampler for in field demonstration in 2007 and new developments are expected for protocols of analysis.

Rui Brandao



IMMUNODETECTION AND QUANTIFICATION OF AIRBORNE PATHOGENS USING THE NEW BURKARD MULTI VIAL CYCLONE SAMPLER

Burkard Manufacturing Company Limited (the original BURKARD organisation) has developed a new 'Multi-vial cyclone sampler' for field operation. The sampler, based on Burkard's miniature cyclone sampler, collects air samples direct into 1.5 ml Eppendorf vials, allowing sample analysis by a number of techniques including serological (ELISA) and molecular (PCR). Airborne particles can be collected as a dry sample or collected into a liquid as required. The multi-vial sampler contains eight Eppendorf, vials mounted on a Carousel, allowing up to eight sequential samples to be taken. In the basic model the sampling time and sample duration is controlled from an external device such as a weather station, data-logger or computer. A free standing model is also available that incorporates a controller, with multifunction timer, in weather-proof metal case, mounted on a tripod (see illustration). The high efficiency Cyclone collects particles less than 1 micron in size with a sample rate of 16.5 litres per minute. The Cyclone head is mounted on precision bearings and is connected to a wind-vane that keeps the sampling orifice pointing into the wind. Where external power is not available the unit can be fitted with Solar panels. The panels are connected to rechargeable batteries, housed within the control case, to provide power over a full twenty-four hour period.

This unit has been developed in conjunction with Warwick HRI (formerly Horticultural Research



International), Wellesbourne, Warwickshire as part of a disease risk assessment and disease management programme for ringspot of vegetable brassicas in the UK. Ringspot is caused by the

pathogen *Mycosphaerella brassicicola* and it is spread by airborne ascospores. The multi-vial sampler is being used to monitor concentrations of *M. brassicicola* ascospores in the air above the crop. The concentrations are quantified using a serological assay that uses antibodies to detect the ascospores. These measurements, together with measurements of the crop environment, enable periods when the crop is vulnerable to infection to be identified, thus giving an early warning of potential disease outbreaks. This information is being incorporated into disease management strategies to improve the efficiency of disease control. Simple to use detection assays, for example a lateral-flow (dipstick) assay, are being developed at Warwick HRI that will allow growers to assess disease risk directly.

The multi-vial sampler could be used in other crop disease management systems where airborne inoculum plays a crucial role in disease epidemic development. As the air sample is collected direct into 1.5 ml Eppendorf vials the sampler is directly compatible with serological or molecular detection methods. Such methods are increasingly becoming available for a wide range of plant pathogens making inoculum detection a practical tool in disease risk assessment. The equipment should also find applications in other fields, such as medicine or biohazard detection, where rapid detection of airborne bio-particles is required.

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REGIONAL GROUPS - launching a European Society

EUROPEAN AEROBIOLOGY SOCIETY

Minutes of the meeting 2007 June 24th -POZNAN, Poland

present:

C. GALAN, J. EMBERLIN, A. RANTIO, R. BRANDAO, B. CLOT, M. THIBAUDON.

1. Name of the European Structure

During a lot of meetings, we discussed the name and the acronym of this structure. So, we decided definitively the name "European Aerobiology Society" (E.A.S.) This society (Association) will be registered in Switzerland, the same way as many other scientific societies and associations including EAACI, ERS and so on..

2. Statutes

The statutes will be written in French and English. B. CLOT and R. GEHRIG will send proposals to M. THIBAUDON.

The statutes will be submitted to all European colleagues before the next European Symposium in Turku August 2008.

3. Committee and Board

The working group to prepare the founding of the "European Aerobiology Society" (E.A.S.) is constituted - as we discussed in Neuchatel - with

S. JAEGER as president, R. GEHRIG for financial affairs, M. THIBAUDON (B. CLOT will assist) for secretary and C.GALAN, A. RANTIO and J.EMBERLIN as members.

The committee will comprise twelve persons, two groups of six persons elected alternatively every two years - i.e. the first group (A) will be elected in 2008 for two years (it will be constituted essentially by members of the constituting group who will be elected), the second group (B) will be constituted by election for four years in 2008. In 2010, the group (A) will be reconstituted for four years, in 2012, the group (B) will be reconstituted by election for four years. The members of the council may be elected only two times successively.

The election will be organized by electronic way a few months before the next general assembly.

The board will comprise the functionaries

- President
- Vice president
- Treasurer
- General Secretary
- Webmaster

The members of the board will be elected directly by the members of the council after the new elections.

The council will organize its meeting at least once a year. The general assembly will join every two years during the International Congress on Aerobiology organised by the IAA or during the European Symposium.

A) Remember, the objectives of this society which were presented in Neuchatel:

- Monitoring
- standardisation
- statutes of the European database (EAN)
- works in the future (PCR, ELISA, automated sampling ...)

B) Forecast modelling

C) Applications

- Genetically modified organism
- Role of the database, extended features of EAN (maps, graphs, statistics)
- Interaction with EAACI (for example with the Interest Group Aerobiology & Pollution)
- Interaction with patient organizations (European Federation of Allergy and Airways Diseases Patient Association (EFA) ...)

D) Education

- European symposia. It will be the first action of the society during the Turku General Assembly
- Basic Course: add a second week to the official course for some additional object: moulds, Quality control
- Technology transfer & staff exchange project
- Coordination and information exchange between partners of EC projects (COST, MONALISA, EUROPREV ALL...)

E-learning.

- Basic Course on Aerobiology

As the EAS web site is not yet ready, please contact us at my personal address michel.thibaudon@wanadoo.fr if you have any comments.

Michel Thibaudon

Aeropalynological monitoring in Cracow

In the Newsletter number 64 (February 2007) dr Alicja Stach presented widely the project AEROTOP and a development of aerobiology in Poland. The article regarding great national and international committal of the Polish aerobiological team, inspired me to look back and to write the story about the development of aerobiology in Cracow.



First interest in a study on pollen and fungal spore concentrations in the air took place in Poland in the first half of the XX century. First publication referring to deposition speed and long distance transport were released in 1937-1939 (J. Dyakowska, M. Bremówna, and M. Sobolewska). In 1939 professor Mieczysław Obtulowicz, Nestor of the Polish allergology, presented in: About pollen rhinitis, first calendars of flowering and pollination of allergenic plants in the area of Cracow. In 1960 the study of fungal spore concentrations started in Cracow and Rabka Spa (A. Weiss). W. Koperowa after her training in the professor H.A. Hyde Laboratory in England introduced the study on pollen concentration, using the Durham trap, in the Institute of Botany, Polish Academy of Sciences. In other Polish cities the aerobiological and phenological observations took place using primarily the gravimetric method (Warszawa 1971-1972, Bydgoszcz 1972, Łódź from 1977). At the beginning of the 90ies the intensive studies came into being in large university centres (Gdańsk, Lublin, Łódź, Poznań, Rzeszów, Sosnowiec, Szczecin, Warszawa, Wrocław).

In Cracow the development of the aerobiological studies was associated with a high level of palynology (Department of Palynology, Jagiellonian University) and close co-operation between palynologists and allergologists. The aerobiological observation started anew at Krystyna Obtulowicz, allergologist, suggestion. In 1982 Kazimierz Szczepanek (Institute of Botany, Jagiellonian University) initiated aeropalynological analyses, using the gravimetric method, in several sites in Cracow and in the nearest neighbourhood. Results were published in *Aerobiologia* 10/1, 1994. These studies were continued up to 1997.

Further studies were associated with several elements, especially with further close co-operation between allergologists (K. Obtulowicz) and palynologists (K. Szczepanek, K. Harmata). Palynological knowledge allowed constructing the methods of aeropalynological studies and training in recognition of pollen grains. Allergologists interest in this subject made it possible to use the pollen observation results in allergological practice.

At that time the co-operation with professor Siwert Nilsson in Palinologiska Laboratoriet in Stockholm, the then leading monitoring center in Europe, came into existence. In 1986 professor Nilsson visited Cracow, in 1987 professor Obtulowicz was trained in Stockholm and in 1990 she participated in the 4th International Congress on Aerobiology in Stockholm presenting preliminary aerobiological results. These events marked the way of the aerobiology development in Cracow. The aerobiological station in Cracow received

the first Burkard trap from Professor Nilsson which enabled introduction of the volumetric method in our studies.

Starting in 1989 after graduating from the Faculty of Pharmacy, Medical University I have dealt with monitoring in Cracow. The intensive training in the Institute of Botany, Jagiellonian University and in the Palinologiska Laboratoriet in Stockholm in 1991, where Mervi Hjelmroos was my teacher, enabled me to perform continuous measurements using the volumetric method. My professional way included periodical work as pharmacist.

However, all the time I performed aerobiological measurements regularly.

During 19 years of measurements, location of the Burkard trap changed twice although it was always in the city center. Presently pollen monitoring is carried out in the Aerobiological Monitoring Station located in the Department of Clinical and Environmental Allergology, Medical College. The Burkard trap is installed on the roof of the Śniadeckich Collegium about 20 m above ground level and pollen grain counting is performed according to the method recommended by IAA.

In 1994 Danuta Stępalska (biologist) joined the aerobiological team in Cracow. Her good command of English is very useful especially in article translation for publishing. The interdisciplinary team of allergologists and palynologists in Cracow started, as first in Poland, co-operation with the European Aeroallergen Network (EAN) in Vienna (first report was sent in January 1991). In the archives of the Monitoring Station in Cracow, a slide with Ambrosia pollen grains which was sent us by professor Siegfried Jaeger still remains. He wanted us to pay special attention to the Ambrosia pollen concentration as this pollen is very allergenic.

Ambrosia pollen was also found in surface samples of subfossil deposits in the Carpathian peat mire. To join the European centres level we focused on the professional aerobiological education and presentation analysis results in Poland and abroad. Dorota Myszkowska and Danuta Stępalska participated in the basic (European) and advanced (international) aerobiological courses (Leiden 1995, Cordoba 1999, Mt Cimone 2000), in the European

Symposia for Aerobiology (Vienna 2000, Worcester 2003), in the Pan-American Aerobiological Association Symposium (Pennsylvania 2007) and in the International Congresses for Aerobiology (Perugia 1998, Montebello 2002, Granada 2004, Neuchatel 2006). It should be mentioned that the Agriculture Academy in Lublin organizes every two years conferences with the aerobiological section which we attend continuously.

Aerobiological monitoring in Cracow is performed during the whole year and about 50 taxa are recognized. Such precise measurements are the basis for detailed scientific work referring to biology of plants occurring in our area. The very important aim of our Station is to apply pollination data of allergenic plants for medical practice (pollen reports, individual pollen traps in the nearest vicinity of the patients, dependence of allergy symptoms on pollen concentration, pollen allergens in the air), to monitor fungal spores (Danuta Stępalska) and the influence of pollutants on pollen grain morphology.

Our Monitoring Station co-operates with administration in Cracow especially with the Provincial Inspectorate for Environmental Protection. On the Inspectorate internet page www.krakow.pios.gov.pl pollen reports and information for patients are presented regularly in Polish and English. Last three years we edited jointly the reports on conditions of the natural environment in the Małopolska province enclosing pollen monitoring results.

Recently some meteorologists of the Department of Climatology, Jagiellonian University have joined our Station. The very important fact is that the meteorological station is located in the immediate neighborhood of the monitoring site. The meteorological station has been performing detailed measurements and observation from 1792.

To consolidate the activity of the Polish aerobiological team two aerobiological sections were brought into being: attached to the Polish Botanical Society (president Elżbieta Weryszko-Chmielewska) and the Polish Society for Fighting Allergic Diseases (president Dorota Myszkowska). The botanical section coordinates scientific work and introduces the aerobiology methodology. The result of such a co-operation was the monography: Plant pollen in aeroplankton of different regions in Poland, Lublin 2006 and the manual: *Aerobiologia* for students, Lublin 2007. The medical section organizes annual conferences: Pollen Allergy Days in Cracow and propagates pollen monitoring results in the medical community. From 1999 Pollen Allergy Days have been arranged (usually on the last Saturday of May) in the Botanical Garden in Cracow. These conferences, open for everybody, include the scientific part and program for patients visiting the Botanical Garden at that day.

Presentations at the conferences include wide subject on applying pollen monitoring for patient therapy and for pollen allergy preventive treatment. Several last years our conferences in Cracow are attended by foreign specialist.

Dorota Myszkowska

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Aerobiology in Australasian countries

In order to develop the specialty of Aerobiology in Australasian countries, the World Allergy Organization organized working group under Prof. Connie Katelaris as head of the Asian Aerobiology Working Group in 2003. She nominated following three colleagues from different countries to co ordinate work in this specialty in our region:

- 1- Dr. Prof. A. B. Singh (India)
- 2- Dr. Muhammad Hassnain (Saudi Arabia)
- 3- Dr. Shahid Abbas (Pakistan)

In 2004, the working group met at World allergy Congress held in Tokyo in conjunction with the Asia Pacific Association of Allergy, Asthma and Clinical Immunology (APAAACI) and there it was decided to seek funding to purchase the Burkards Samplers for the Asian countries on loan basis. Considering my experience in this field I was awarded the first Sampler by the WAO in 2004 to study aerobiology in Pakistan. Since Islamabad is the city known to have the highest pollen counts in the country and greatest number of patients suffering from pollen allergy, so first city we selected to systematically monitor was Islamabad in 2004-2005. I have completed data for two years and I am going to present it at the forthcoming WAO congress to be held in Bangkok in December, 2007. In our study we have got some very interesting results. In March and April (spring) we have highest pollen counts of Paper Mulberry and in fall we have highest pollen counts of Cannabis sativa while grass pollens are prevalent throughout the year.

I will keep in touch with you and our colleagues of IAA for exchange of information

Dr. Shahid Abbas
Member Asian Aerobiology Group

Pollen monitoring on the edge of Europe

The westernmost pollen monitoring site in Europe is in Ponta Delgada on the island of Sao Miguel, on the roof of the University of the Azores. The Azores are a group of volcanic islands in the Atlantic ocean, and they form an autonomic region of Portugal. For allergic persons the islands can be a comfortable holiday destination because of their extremely humid climate.

The Azorean economy lies heavily on dairy farming and timber production, and in consequence the major airborne pollen groups are grasses and the Japanese Red Cedar (*Cryptomeria japonica*). The Japanese Red Cedar is favoured in tree plantations because of its unrivalled growing capacity. *Cryptomeria* is sometimes called the worlds leading pollen allergy species: in the Asian countries where the cedars originate some 10% of the population are allergic to pollen. However,

the amount of pollen never grows high on the Azores, because the islands are relatively small and they are in the middle of an ocean, and the constantly blowing winds blow the pollens away.

The Azores are famous for their lush green vegetation of over 1000 plant species, of which almost 70% are introduced species. The evergreen image has earned Sao Miguel



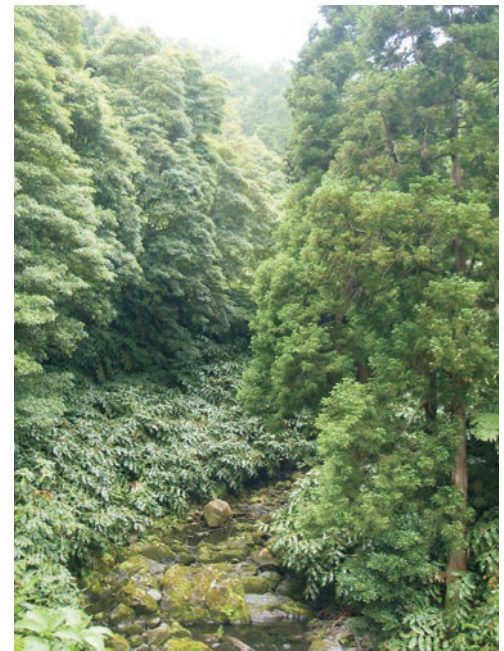
the nickname Ilha Verde, "the green island". Together with the fertile volcanic soil, subtropical temperatures and constant humidity make an ideal climate for many exotic ornamental flowers and trees, some of which have turned into invasive species. In addition to pineapple (*Ananas comosus* (L.) Merr), tobacco (*Nicotiana tabacum*) and banana (*Musa* spp.) production, Sao Miguel also has the EU's only commercial tea plantations



(*Camellia sinensis*). Other notable crops are the passion fruit (*Passiflora edulis*), sweet potatoes (*Ipomoea batatas*), yams (*Colocasia esculenta*) and sugar beet (*Beta vulgaris*).

Humidity is obviously the reason why the Azores also have hundreds of species of mosses and dozens of fern species, such as the imposing tree ferns *Sphaeropteris cooperi*, introduced as ornamental plants. However, the most typical scenery on Sao Miguel consists of black and white cows grazing year-

rund on lush green pastures bordered by stone fences of black lava rocks. The gardens, picnic areas and roadsides of Sao Miguel are carefully maintained and planted with attractive flowers. Despite being originally introduced for hedgerows, the pink and blue hydrangeas *Hydrangea macrophylla* have become an emblem for the Azores. An aggressively invasive ginger



plant *Hedychium gardnerianum* that originates from the Himalayas is feared to suffocate native vegetation, including many endemic species.

Indoor air problems could be a bigger challenge for allergics on the Azores than pollen. Dwellings need not necessarily be heated in the constantly warm climate, and even the chimneys from fireplaces were traditionally built outside the houses. Modern living habits such as showering and washing up can cause moisture damage in the old buildings, which however does not easily dry out when humidity approaches 100%. In as good as every old house there are mould problems, and the weekly cleaning day is sometimes dubbed the "mould-brushing day." During the last five years a general building boom has reached the Azores. Glitzy shopping malls and entire housing areas have emerged with modern high-rises and new hotels - with no more moisture problems.



Maria João Bornes Teixeira Pereira
University of the Azores, Portugal

Mervi Oikonen
Aerobiology Unit, University of Turku,
Finland

The new site of the Italian Aerobiology (AIA) is online with the intent to promote the activities of Association between all those who are interested in this discipline, members and non-members: www.ilpolline.it/. The new site is built in an innovative way, a flexible instrument, easily upgradeable, very versatile and manageable even by the point of view of the recent directives regarding accessibility. On this occasion the President AIA and in the Executive Office on behalf of all the Italian Aerobiology thank all those who with their tireless work contributed to the creation and updates of the first site, hosted by historically ISAC CNR-Bologna since 1995 and since promoted by Prof. Paolo Mandrioli and his team of collaborators.

21st March National Pollen Day

Organised by The Italian Association of Aerobiology (AIA) with the support of the International Association of Aerobiology (IAA)

The relationship Man-Environment is, by its nature, complex and in constant dynamic correlation.

The inherent environmental problems concern the manner in which human society administers the productive processes, renewable and non-renewable resources, artistic and cultural works, and the mechanisms for regulating and forecasting natural phenomena.

Aerobiology is a discipline which, thanks to the multiple competencies of the researchers who are involved (biologists, medical doctors, physicists, agronomists etc.) deals with the study of air and its quality. It does this through the sampling and qualitative and quantitative evaluation of its biological components, such as pollens and fungal spores, the study of their variation in time and space in relationship to different meteorological climatic and botanical conditions and of the interaction with pollutants and with agents which influence human activity and through the study of the effects which pollens and fungal spores can bring to the quality of daily life with regard to health, environment, agriculture and artistic and cultural works.

Aerobiological studies provide a useful contribution to further the preservation of the person in its entirety in relation to the environment and the natural inheritance, which should be safeguarded.

It is useful to know that

- Pollens present in the atmosphere carry within them the male gametes of higher plants. They are set free in the air during the flowering season and entrusted to the wind to reach the female "flower" to achieve fertilization.

- Anemophilous plants, trees and grasses, are those which use an unspecific vector like the wind for pollination and produce great quantities of pollen which are sometimes carried considerable distances.

- Entomophilous plants, trees and grasses, usually with showy and colourful and/or perfumed flowers, release small amounts of pollen, generally less aerodynamic, often with ornamental surface, in order to adhere better to the body of the insects which carry it to other flowers of the same species.

- Fungal spores are found in great number in the air, it has been estimated that spores of over 100,000 species of fungi are dispersed by air.



1. Pollens and spores cause not only allergies

The pollens which are dispersed in the air from trees and cultivated and wild grasses represent the inhaled substances most frequently responsible for allergic reactions (conjunctivitis, rhinitis and asthma) in the respiratory apparatus of predisposed subjects. Fortunately, not all pollens provoke allergic reactions! Some spores can be responsible for allergic asthma and rhinitis too. Moreover, a large number of mycetes live as parasites on plants, animals and man (mycosis). Fungi also can cause considerable damage in agriculture, foodstuffs and to cultural and artistic works.

2. Pollens and food

Some substances which cause allergies which are present in certain species of pollens can also be present in food of vegetable origin. People who are allergic to pollens can suffer so-called "crossed allergic reactions". These reactions are typical of the lip and oral cavity but sometimes can be accompanied by manifestations such as urticaria, asthma and anaphylactic shock.

3. Pollens and allergies: how to prevent and treat pollen allergies

Pollen allergies, most of which have been identified and studied, can be treated either with preventative and symptomatic drugs (which today are very efficacious and well-tolerated) or with specific immunotherapy, in which a "vaccine" is obtained from extracts of the pollen to which the subject is allergic, or with recombinant DNA technology.

4. Pollens and climatic and botanical conditions in the area under study

Climatic changes which are taking place and the activities of man influence the diffusion and flowering periods of plants and can change the spatio-temporal diffusion of pollens which they produce. For example, the presence and prevalence of different pollen species responsible for allergic reactions, and the frequency of allergic reactions to them, vary with the variation of climatic and botanic conditions in various areas.

5. Pollens and monitoring of their presence in the atmosphere

The atmospheric emission of vegetable particles such as, for example, pollens, and, among these, those responsible for allergic reactions, is predictable. In fact, a network of monitoring sampling centres, which operate according to precise, shared standards, in Italy and other parts of the world, detect the concentration of particles present in the atmosphere. The sampling of pollens and spores present in the atmosphere constitute an instrument of particular use to the specialist allergologist for diagnostic research, for the interpretation of symptoms and for forecasting the pollen season, with the scope of correct prevention and correct evaluation of therapies. Moreover, it is also a useful tool for patients and forensic doctors, agronomists, naturalists, agriculturalists and tourists. The elaboration of aerobiological data, gathered over many years, permits the construction of "pollen calendars" which indicate the seasonal progress of diverse species of pollen in a specified area.

Nevertheless, it is also wise to keep an eye on information provided by weekly notices issued by various monitoring centres which show the actual situation. This can sometimes differ from that reported in the pollen calendars, drawn from data gathered over a long period of time, due to different seasonal climatic changes or changed botanical conditions in the area under study. In this regard, the study of the relationship between

meteorological conditions and the various phases of development of plants allows the creation of models which can predict in advance some characteristics of the flowering phases (beginning, length, end, intensity).

6. Pollen and monitoring of the quality of the environment

Extensive aerobiological studies over the years represent a very useful monitoring system which evidences possible variations caused by changed meteorological and or climatic or botanical conditions in the area in which the study is taking place, and the appearance of any new pollens in that area. Monitoring of pollens allows the study in particular of vegetable biodiversity, the reduction in the number of families, genera or species, also caused by factors linked to humans, and/or appearance of families, genera or species previously absent. Moreover, very recent research has been directed towards the study of the vitality of pollens in polluted environments, correlating the pollen vitality rate encountered with the level of alteration of air quality.

7. Pollens and atmospheric pollution

Atmospheric pollution plays an important role in the interaction between pollens and the respiratory apparatus. Pollution, in addition to directly causing a worsening of allergic respiratory diseases (asthma in particular), increases the negative effect of pollens on allergic subjects.

8. Pollens and choice of species for urban beautification

In order to contain allergenic pollens it is necessary to avoid introducing non-autochthonous plants in as much as they determine the emission of pollens, often responsible for allergic reactions encountered in our regions only episodically. Where possible, it is opportune to use plants of entomophilous pollination (i.e. those plants which release pollens which are carried by insects or other animals) at the same time limiting wherever possible the use of plants, even autochthonous ones, which produce pollens with well-known allergenic activity.

9. Pollens, fungal spores and other substances which cause allergies in confined indoor environments

The substances which cause allergies in confined environments, so-called "indoor" (found in houses, offices, schools, gyms, hotels, cinemas, hospitals, restaurants, etc.) and the pathologies associated with them, have become a phenomenon of social significance. Among the sources of these substances we find acari, particles from domestic animals, moulds, insects, and pollens coming from outside. "Indoor" monitoring takes place both by the gathering of settled dust and by sampling particles diffused in the air.

10. Pollens, fungal spores and conservation of artistic and cultural works.

The biological component of the air can set off even intense processes of degradation such as to cause significant damage to exposed artistic and cultural works in closed environments (museums, churches, libraries, galleries, etc.)

11. Pollens and fungal spores: the usefulness of monitoring in agriculture

The monitoring of fungal spores has importance not only for subjects affected by allergy but also for workers in the phytosanitary sector because it provides information which can be used to define the best period to commence anticryptogamic treatment of plants.

SCIENTIFIC NOTES

Standardization of fungal spore identification levels

Fungal spores occur in a fantastic scale of shapes from the simple globose to the exceptionally complex. There has been a tendency in the past to try to describe spores using single-word terms. The habit of using these short terms to describe unique, complex, three-dimensional shapes must be abandoned. Instead, spores should be illustrated by standardized descriptive biological terms. A complete spore description may include some photographs (possibly more than one) with a scale bar. For more detailed descriptions, sporograms (Baral, 1992, Dominguez de Toledo, 1994), morphological data (spore size, number of septa, ornamentation), chemical reactions and categories of Saccardo's spore groups (Saccardo 1884) should be added. Identification of spores should proceed to the most specific classification possible. The spores produced by fungi in culture may differ in appearance from those sampled from the air using the Hirst method (Hirst 1952). Dehydration during airborne transport may cause spores to collapse inwards, often assuming characteristic shapes and crease patterns. Free spores found in Hirst-type air samples can be identified morphologically to different levels, depending on their characteristics. Rarely can spores be identified to the species level. Some spores may have to be placed in groups of multiple genera or families. Uncertain taxa identified above the species level should be labelled in a standardized way to allow comparison of the spore compositions published by different authors (Magyar 2007). In the following, a standardization in the nomenclature of spore identification levels is proposed.

Spores can be identified as:

Genus name species name [e.g. *Paraphaeosphaeria michotii* (Westend.) O.E. Erikss.]: when identification is possible at the species level.

Genus name (e.g. *Diplodia* spp.): when accurate identification is possible at the level of genus.

Genus name? species name [e.g. *Massaria ? inquinans* (Tode) Fr.]:

when the identification is unsure at the species level, but we have enough information to exclude the majority of other species.

Genus name?? species name [e.g. *Valsaria ?? insitiva* (Tode) Ces. and DeNot.]: when the identification is unsure at the species level and we don't have enough information to exclude the majority of other species, but the spore strongly resembles a given species.

Genus name species name -type [*Cladosporium echinulatum* (Berk.) G.A. de Vries-type]: when the identification of genus is certain. The identification of the species is not possible by spore morphology, but its description is simplified by referring to a well-illustrated species.

Genus name /Genus name (e.g. *Aspergillus/Penicillium*): when two genera can not be differentiated.

Genus name -type (e.g. *Colletotrichum*-type): when the identification of genus is uncertain, but the morphological description is simplified by referring to a well-illustrated fungus.

Genus name? (e.g. *Septonema* sp. ?): when the identification is unsure at the genus level. We don't have enough information to exclude the majority of other genera, but the spore strongly resembles a given genus.

Family name (e.g. *Diatrypaceae*): when the identification of family is certain.

Unknown sp. (e.g. unknown 1-septate, hyaline, elliptical spores): when morphological identification is not possible at any taxonomic level.

Morphological variants (e.g. clumped conidia of *Botrytis*) The frequent forms (clumped, desiccated, cracked or immature spores, chains of conidia, ascospore octads, etc.) of a given fungus. To note morphological appearance of a given taxa in the air could be useful to reveal some details of the spore dispersal.

The method of the standardized spore identification levels offers a more adequate interpretation for Hirst-type data when they are intended for publication in mycological journals.

Donát Magyar

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Epidemiological study of childhood asthma

The journal *Grana* recently published a report of how Californian researchers grouped plant and fungal taxa for an epidemiological study of childhood asthma.

This examination of the natural history of asthma may be of interest to other aerobiologists because it is unique in its consideration of the complex seasonal patterns of ambient air pollutants as well as pollen grains, fungal spores, and other indoor and outdoor bioaerosols. Hjelmroos-Koski et al. observed that although exposures to airborne pollen and spores have been implicated in acute asthma exacerbation, the few epidemiologic studies on the subject have used only total counts (ignoring the potential importance of individual taxa) or a few predominant pollen or spore types (ignoring less abundant but possibly relevant groups).

The California paper describes the development of hypothesis-driven exposure metrics in which pollen and spore groupings were based on (a) known association with allergic asthma and other hypersensitivity disease, (b) pollen allergen cross-reactivity, and (c) the presence of local sources in the city of Fresno, an agricultural region in the California Central Valley, U.S.A. Other biological agents under study were seasonal measurements of cat, dog, dust mite, and cockroach allergens in house dust as well as endotoxin in dust and indoor and outdoor air. The 315 asthmatic participants (age 6–11 years at intake) performed periodic lung function and skin prick tests and kept symptom diaries throughout this 3.5-year study.

Pollen and spore measurements were made on three scales, i.e., regional, neighborhood, and residential. Outdoor regional and neighborhood concentrations were measured using Hirst-type, 7-day samplers (regional data: one continuous sampler at a central location, 10.7 m elevation; neighborhood data: two-week samples at ten schools attended by the study participants, 4.5 m elevation). Indoor and outdoor

residential concentrations were measured with similar 24-hour slit impactors at 84 selected homes (1.5 m elevation). All pollen and spore concentrations were recorded in 2-hour intervals to (a) understand diurnal fluctuations in aeroallergen concentrations, (b) identify exposures during the time periods that the children were outdoors, and (c) study interaction between aeroallergens and other air contaminants. The 124 pollen taxa that were observed were reduced to 15 categories and the 66 fungal and algal taxa were reduced to five categories (Table 1) for microenvironmental models that generated individual daily exposure estimates for each child.

Some of the taxa proposed for the California study have not been considered in previous epidemiologic asthma studies but may prove to be relevant in the development of acute and chronic symptoms in this group of children due to elevated local exposures. The authors excluded other known allergenic taxa because they either were not seen in Fresno or were observed at only very low concentrations. These new aeroallergen exposure metrics will allow examination of health effects for taxa traditionally associated with allergy and those with locally elevated concentrations in combination with exposures to other indoor and outdoor air contaminants, an approach that other researchers may wish to adopt.

Submitted by

Janet M. Macher, Sc.D.
M.P.H.

Division of Environmental and Occupational Disease Control, Environmental Health Laboratory, California Department of Public Health, Richmond, California

Hjelmroos-Koski, M.K., Macher, J.M., Hammond, S.K., Tager, I.B., 2006. [Considerations in the grouping of plant and fungal taxa for an epidemiologic study. Grana. 45:261–287](#)

<http://www.informaworld.com/smpp/content?content=10.1080/00173130601005420>

FORTHCOMING EVENTS

European Symposium: Ambrosia 2008

Time for action

Ragweed (*Ambrosia artemisiifolia* L.) is expanding its distribution in many countries of Europe as in different parts of the world. Its pollen is very allergenic: only a few pollen grains in a cubic meter of air can provoke allergies. Depending on the area and the density of the plant, from 6 to 12 % of the human population are already allergic to ragweed pollen.

Efficient prevention/control/eradication actions require coordination from local to continental scales, collaboration of all concerned persons/administrations/authorities and the development of long term strategies.

The departments of the French Health Ministry, DGS and DRASS Rhône-Alpes, have decided to organize, in 2008, a Symposium dedicated to information and ideas exchange between all those concerned by the ragweed invasion problem. Experts will present the latest scientific knowledge and the state of the art in management techniques. Decision-makers will share experience and find a platform to develop common strategies in order to build an European coordination program against ragweed.

Preliminary programme

- State of the art
- Monitoring
- Control management - prevention
- Perspective influence of climate change
- Assessment and action plan

Organisation

Dates: 21 - 23 November, 2008
Venue: Aix-les-Bains, Savoie (France)
Call for posters in Winter 2008.

Michel THIBAUDON

Directeur du RNSA
courriel: rnsa@rnsa.fr

Web: www.pollens.fr

8th European Pollen Symposium 2008

Announcement and preliminary Programme
A symposium of the
German Pollen Information Service Foundation
(Stiftung Deutscher Polleninformationsdienst, PID)
in cooperation with
- Deutscher Wetterdienst (DWD)
- European Center for Allergy Research Foundation (ECARF)
supported by
German Research Community (Deutsche Forschungsgemeinschaft)

Date: March, 28th, 2008 – March, 30th, 2008
Location: Best Western Parkhotel Bad Lippspringe, Germany
Phone: + 49 5252 9630
Fax: + 49 5252 963111
Web: www.parkhotel-lippspringe.bestwestern.de

Scientific chair:
Prof. Karl-Christian Bergmann (PID) Dr. Klaus Bucher (DWD)

Organisation: Mrs. Margarete Wilhelm
Secretariat: Prinzenpalais/Burgstraße,
33175 Bad Lippspringe, Germany
Phone: +49 5252 931203
Fax: +49 5252 931204
Mail: pollenstiftung@t-online.de
conference website: www.pollenstiftung.de

Scientific programme Climate changes and pollen

Saturday, March, 29th, 2008

9:00 a.m. Opening

9:30 a.m.: **Climate change from meteorological point of view** Chair: Dr. Klaus Bucher, Freiburg (DE); Prof. Jean Emberlin, Worcester (UK)

- Global aspects of climate change : K. Bucher, Freiburg (DE)
- Regional aspects of climate change : Ch. Koppe, Freiburg (DE)
- Climate monitoring, a base of climate research : U. Kaminski, Freiburg (DE)

10:30 a.m. Coffee Break

11:00 a.m.: **Climate change from botanical point of view** Chair: Prof. Annette Menzel, Munich (DE); Dr. Claudio Defila, Zürich (CH)

- Flowering dates and pollen in the focus of climate change - from IPCC to studies in Germany : A. Menzel and N. Estrella, Munich (DE)
- Climatic warming increases the airborne birchpollen loads – or does it? : H. Ranta, Turku (FI)
- Airborne pollen load and variations in environmental conditions : Y. Waisel, Tel Aviv (IL)
- Vegetation and allergy risk in a changing environment in Switzerland : R. Gehrig, Cl. Defila and B. Clot, Zurich (CH)

12:30 a.m. Lunch in the Parkhotel

2:00 p.m.: **Poster Session** Chair: Prof. Dr. phil. Siegfried Jäger, Wien (AT)

- New pollen calendar for Germany: H. Kühne et al., Berlin (DE)
- Threshold value for number of ambrosia pollen inducing acute nasal reactions: K.-Ch. Bergmann et al. (DE)
- COST-action ES603: T. Torrigiani, (IT)
- Efficacy of a new pollen protection material : M. Metz et al., Berlin (DE)
- A comparison between airborne Betula Pollen counts in the northwest of Germany and the Netherlands : R. Wachter, Delmenhorst (DE)
- Phenological and aerobiological data in Czechia, COST action ES0603 – national main aims: L. Hajkova, J. Nekovar, Usti na Labem, Praha (CZ)
- The portuguese aerobiological network: airborne pollen monitoring 2002 - 2006 : R. M.A. Brandao, et al., Evora (PT)
- Climate change from botanical view : I. Shauliene, Siauliai (LT)
- Do aerobiological data from Catalonia (1983-2007) agree with climate change? : J. Belmonte, M. A. Canela, Barcelona (ES)

3:00 p.m. Coffee Break

3:30 -4:30 p.m.: **Climate change from allergological point of view** Chair: Prof. Karl-Christian Bergmann; Dr. Mikhail Sofiev, Helsinki

- Climate change, pollen seasons and hay fever: recent trends in the UK and predictions for the next 20 years. J. Emberlin, Worcester (UK)
- Could we protect allergic newcomers from sensitization to local pollen by providing comparative aerobiological and climatic data from their native country where they arrived? : C. Geller-Bernstein, Rehovoth (IL)
- Birch pollen allergen release over a 5 year period in Germany: are the differences a consequence of climate change? : J. Buters, Munich (DE)

Sunday, March, 30th, 2008

9:30 a.m. : **Ambrosia Symposium** Chair: Prof. Heidrun Behrendt, Munich (DE)

- Sensitization against ambrosia pollen: results of SAPALDIA-II-study : Peter Schmid-Grendelmeier, Zurich (CH)

11:00 a.m. Coffee-Break
11:30 –12:00 a.m. Take-home message

registration and more information:
www.pollenstiftung.de

registration deadline:
February 4th, 2008

4th ESA

European Symposium on Aerobiology

August 12.- 16. 2008, Turku, Finland



Dear Friends and Colleagues,

We have the pleasure of welcoming you to the 4th ESA Symposium. The meeting will provide an update on various aspects in Aerobiology. The topics of the meeting include forensic palynology, satellite imaging, meteorology and long-distance monitoring and the recent developments in modelling and methodology.

Following the tradition of IAA, the 4th ESA 2008 Symposium will provide an opportunity for young scientists to meet the experts of the field and present their own work as oral presentations and as posters. We hope that the outstanding scientific

program together with the social events in the summer nights in Turku will create an unforgettable atmosphere for informal and stimulating scientific discussions.

During the Symposium, we will organize the general meeting of the European Aerobiology Society (EAS). More information about the EAS meeting will be available on the webpages approximately in January 2008.

Welcome to Turku and the 4th ESA!

The Local Organizing Committee

Important dates:

Deadline for abstract submission
15.3.2008

Early registration by
31.5.2008
(after which placement in the abstract
book is not guaranteed)

Late registration by
15.6.2008
(after which no more hotel reservations
are guaranteed)

Higher registration fee from 30.7.2008

contact info: www.sci.utu.fi/projects/biologia/aerobiologia/4ESA2008

Contact person:

Mervi Oikonen
Symposium coordinator



Join the 4th ESA mailing list:

Receive current information about the Symposium and notifications of the website updates.

Visit the website

<https://lists.utu.fi/mailman/listinfo/esa2008>
and fill in the form to join the list.

General guidelines

Presentation time - The oral presentation time is 15 minutes, with 5 minutes for discussion. Poster papers are assigned a minimum of one hour presentation time.

Abstract deadline - The organizers reserve the right to ignore abstracts that do not arrive by the submission deadline.

Audiovisual equipment - Only computer projectors will be automatically provided at no cost in all rooms.

Scheduling - As soon as the program is set, authors can see their session time(s) on the symposium website.

Please follow these guidelines when preparing your abstract:

Length of Abstracts — Abstracts, including references/footnotes, must be 500 words or less. The program chairperson reserves the right to edit abstracts, if necessary, for clarity, grammar, style, and length.

Authors should be listed in this order: Lastname, Firstname (Institution); Lastname, Firstname (Institution) etc. Please note that the organizers reserve the possibility to reduce diacritics (special characters) to their root characters.

Clearly mark the corresponding author and provide at least mail and email addresses; other contact details may also be added.

Affiliations for all authors must be listed, mail/email addresses may also be given

web page:

www.utu.fi/4ESA2008

Symposium email: esa2008-info@utu.fi

Postal address:

4th ESA 2008

c/o Aerobiology Unit

FI-20014 University of Turku

Telephone: +358 (0)2 333 6065

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9TH INTERNATIONAL CONGRESS ON AEROBIOLOGY 2010

August 23 - 27, 2010
Museo Argentino de Ciencias Naturales "Bernardino Rivadavia"
Buenos Aires - Argentina

“Expanding Aerobiology”

The previous Aerobiology Congresses have identified a specific theme that summarizes the perspectives of the meeting, a forward vision for Aerobiology over the next few years, within a framework of continuing development. For example, the 7th ICA was focused on the ecological significance of Aerobiology (“Coming of age in a new millennium”), while the 8th ICA proposed to make Aerobiology an integrated science, encouraging close collaboration between aerobiologists and other scientists from related fields (“Towards a comprehensive vision”). Aerobiology, if not a new science, is currently experiencing a phase of fast development, as can be seen from the proliferation of aerobiology related researches throughout the World, as well as from many new advances in techniques and methods. Moreover, we now face the exciting challenge of introducing Aerobiology in new countries, many in Latin America, promoting both its geographical and scientific expansion. Therefore, we propose to present a “snapshot” of these new intellectual territories in Buenos Aires in 2010.

There has been a constant progression of Aerobiology in South America for several years, and particularly in Argentina. Therefore, Buenos Aires, as a strategic geographical point in South America, would be a very good opportunity to foment participation of Latin-American scientists involved in Aerobiology and to promote IAA in this continent.

Thirty-five years after its birth, we believe it is time for IAA to convene – for the first time – in the southern hemisphere and experience the American topics. We invite everyone to not only

consider Aerobiology with a global vision but in a participative manner. We are looking forward to welcoming you all in Buenos Aires, 2010.

The City

The City of Buenos Aires is the capital of the Argentine Republic. The city is located at 25 m above sea level on the shore of the Rio Plata and extends on a plain of 202 km². Approximately 3 millions people live in this city - 10 millions including the metropolitan area - making it one of the 10 most populated urban centers in the world. Tourists love Buenos Aires and its many different “looks”: melancholic, fun, traditional, modern, passionate and delightful but above all, its pleasant manner and fraternity. Buenos Aires is connected nationally and internationally through a comprehensive, wide-ranging transport network, and is ready to provide lodging to more than five million tourists each year. The main chains of four- and five-star hotels worldwide offer their services in the city. You may also choose one-, two- and three-star hotels. In addition, apart-hotels and economical hostels for people expecting more affordable fees are available.

Buenos Aires is in the southern hemisphere, and the climate is oceanic temperate, i.e. mild all year round. In August, average minimum temperature is 9°C (48.2°F), maximum temperature averages 18°C (64.4°F); and there are normally 8 days of rain (63 mm).

Organizing Committee

María Gabriela Murray (Chairperson) Universidad Nacional del Sur, Bahía Blanca, Argentina.

Carlos Villamil, Universidad Nacional del Sur, Bahía Blanca, Argentina.

Edgardo Romero, Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina.

Manuel Baeza-Bacab, Universidad Autónoma de Yucatán, Mérida, Yucatán, México.

Marta Caccavari, Centro de Investigaciones Científicas y de Transferencia de Tecnología a la Producción, CONICET, Diamante, Entre Ríos y Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina.

Viviana Cambi, Universidad Nacional del Sur, Bahía Blanca, Argentina.

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Melina Calfuán, Universidad Nacional del Sur, Bahía Blanca, Argentina.



How to contact the Local Organizing Committee

Please send any correspondence to:

9th ICA

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Universidad Nacional del Sur

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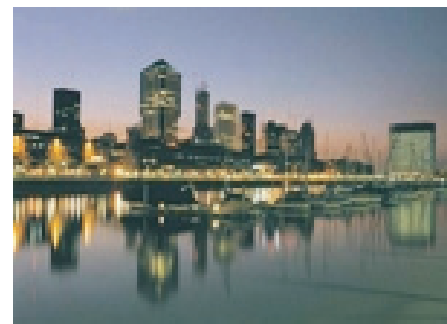
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