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INTERNATIONAL AEROBIOLOGY NEWSLETTER

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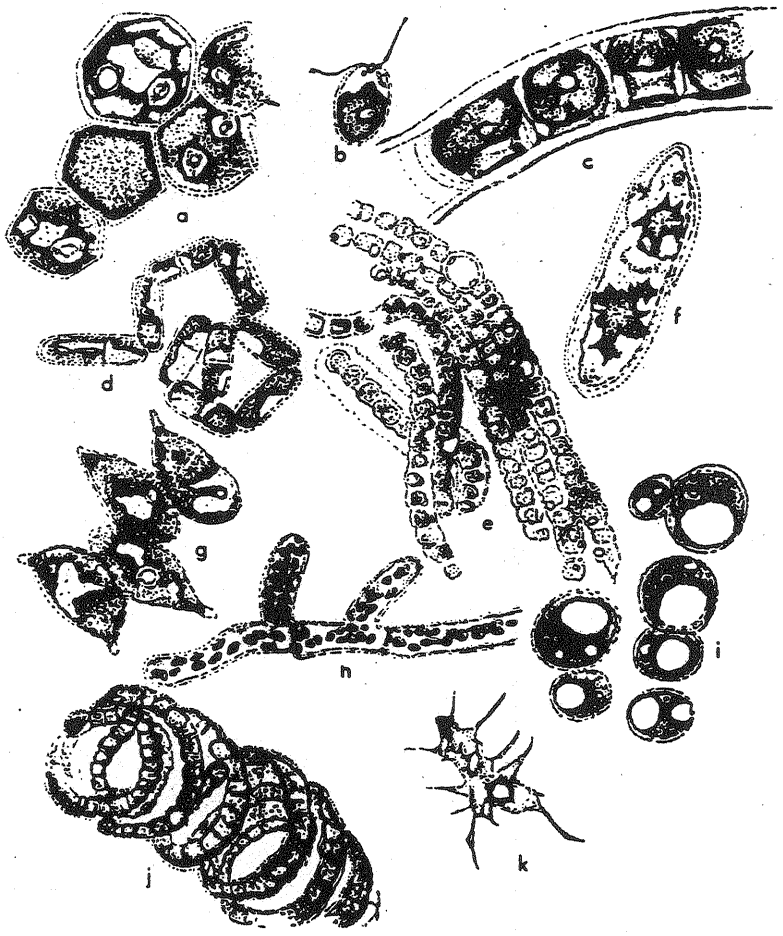

MAY 1988

NO. 27

INTERNATIONAL ASSOCIATION FOR AEROBIOLOGY

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The **INTERNATIONAL ASSOCIATION FOR AEROBIOLOGY** was founded in 1974, during the First International Congress of Ecology. The general objectives of the Association are to promoted the development of aerobiology and to facilitate international co-operation towards this end. To achieve this the **INTERNATIONAL AEROBIOLOGY NEWSLETTER** is published bi-annually, in May and October, distributing among IAA members news and information about new books, meetings and congresses, plans for research projects, and activities of committees and working groups. Every four years an international conference will be organized (next - Stockholm, 1990).

Affiliated Organizations: International Union of Biological Sciences (IUBS): International Society for Plant Pathology (ISPP)

Associated Organizations: Nordic Aerobiological Federation(NAF); Indian Aerobiological Association (IAS)

ANNUAL MEMBERSHIP: 18 Swiss Francs, or $10.00-U.S.

REDUCED SUBSCRIPTION TO GRANA: $33.00- U.S.

INTERNATIONAL AEROBIOLOGY NEWSLETTER
Number 27 May 1988

Estelle Levetin, Editor

Faculty of Biological Science
The University of Tulsa
Tulsa, Oklahoma 74104, USA

CONTENTS

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Cover Illustration - The cover illustration for this issue was sent in by Dr. Irma Rosas, Universidad Nacional Autonoma de Mexico. She writes "I am sending you a drawing of some aerobiological material for the cover of the newsletter. They were collected as a part of the research we are conducting about algae and their allergenic properties. Some airborne algae collected in the urban area of Mexico City, included are (a) *Chlorococcum diplobionticum,* (b) *Chlamydomonas agloeformis,* (c) *Ulothrix tenerrima,* (d) *Hormidium subtile,* (e) *Nostoc rivulare,* (f) *Nitzchia hungarica,* (g) *Scenedesmus acutus,* (h) *Cladophora glomerata,* (i) *Chlorella vulgaris,* (j) *Lyngbya holsatica,* and the protozoa (k) *Acanthamoeba* sp. "

Submit drawings of aerobiological materials for the cover of the newsletter. Drawings should be in black ink on white paper. Send to Newsletter Editor.

EDITORIAL

IAA Finances and the Postal Service

I want to express my sincere appreciation to the many members who are submitting news items; without your input there would be no Newsletter. I especially want to thank Dr. Ines de Hurtado and Dr. Irma Rosas for submitting drawings for the covers of #26 and #27. They have added a new dimension to our Newsletter. Please keep the news items and the drawings coming.

I also want to express my apologies to some members. I have received many letters but have not always had the time for individual responses. Some of these letters have concerned "lost or missing" Newsletters. I would like to take the opportunity to explain the system for mailing the Newsletter. The Newsletter is send by Airmail to IAA officers, others on the Executive Committee and Members of the Executive Council; the cost for airmail postage is currently $1.80/copy (this is slightly higher than last year due to a postal increase). I am sure that these Newsletters arrive in approximately one week . Members in North America receive their Newsletters by first class mail at $0.45/ copy for the U.S. and Mexico and $0.52/copy for Canada. (This also reflects the recent increase in postage.) I am assuming that the Newsletters reach members in North America in one to two weeks. Members in Europe, Asia, Africa, Australia, and South America receive their Newsletters by what the U.S. Postal Service calls surface mail (surely a most confusing term) at $0.62/copy, again reflecting the recent price increase. Unfortunately surface mail is slow. The U.S. Postal Service estimates delivery in 6-8 weeks but there may be delays beyond this in individual countries. Therefore, many of you may be seeing copies of the Newsletter, received by a Council Member or IAA officer, seven to eight weeks before your own copy arrives. Although this time delay is most unfortunate, the high cost of airmail postage prohibits us from mailing all copies by airmail. If you have not received your own copy in approximately eight to ten weeks, please let me know. I will be happy to send a replacement.

MEMBERSHIP COMMITTEE AND ADDRESS CHANGES

During the Basel Conference in 1986, IAA member Dr. Mary Kay O'Rourke agreed to take on the tasks of Chairman of the newly formed Membership Committee. The Membership Committee's function is to facilitate membership drives and to keep the membership roles up-to-date. Also, the mailing labels for all IAA correspondence (including the Newsletter) are printed from the membership list. In this regard, if you have a change in address or telephone number, please send this new information, printed clearly or typed to:

Dr. Mary Kay O'Rourke
Department of Geosciences
University of Arizona
Tucson, Arizona 85721
USA

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AEROPALYNOLOGY LIBRARY

Siwert Nilsson asks all IAA members to send a reprint of all new and forthcoming aerobiological publications to the Palynological Laboratory of the Swedish Museum of Natural History. The Laboratory, which has an extensive collection of aeropalynology literature, will compile a list of all submitted reprints. This list will be published regularly in the IAA Newsletter. To insure inclusion in this list, please write "IAA" on the upper right hand corner of the reprint. Send reprints to:

Dr. Siwert Nilsson
Palynological Laboratory
Swedish Museum of Natural History
S-104 05 Stockholm 50
Sweden

REPORTS FROM RECENT SCIENTIFIC MEETINGS

INDIAN AEROBIOLOGICAL SOCIETY

The 4th National conference of the Indian Aerobiological Society was held at Magadh University, Bodh Gaya, from October 12 to 14, 1987. About 150 delegates from all over the country and a large number of research workers and interested aerobiologists from the Magadh University attended the Conference. Prof. Mangal Dubey, Vice-Chancellor, Magadh University inaugurated the Conference, Prof. Sunirmal Chanda, President, International Association for Aerobiology, delivered the inaugural key-note address and Prof. S.T. Tilak, President, Indian Aerobiological Society delivered the Presidential speech.

The scientific sessions were divided into four categories:

Section (A) Aerobiological Surveys/Biometeorology
Section (B) Biopollutants/Aeroallergens and Human Health
Section (C) Aeromycoflora in Substrate Infestations and Plant Diseases
Section (D) Mathematical Modelings, Spore Dispersals, Aeroplanktons, Disease Forecasting and Methods.

More than eighty papers were presented covering all aspects of Aerobiology.

Eleven participants took part in the P.H. Gregory Memorial Lecture contest. The first three prizes went to Dr. A.H. Rajasab of the P.G. Department of Botany, Gulbarga University, Gulbarga (first), to Miss Swati Gupta of the Division of Palynology & Environmental Biology, Bose Institute, Calcutta (second) and to Dr. Miss A. Singh of the Botany Department of Magadh University (third).

The Conference was well organized under the guidance of Dr. K.B. Mishra of the Magadh University and his associates. It was decided by the General Body of the IAS that the 5th National Conference on Aerobiology will be held at Srinagar, Kashmir, under the joint auspices of the Botany Department, Kashmir University and the Indian Aerobiology Society.

----Sunirmal Chanda and Swati Gupta

UPCOMING MEETINGS

AEROBIOLOGY, HEALTH, ENVIRONMENT

This First Canadian Aerobiological Conference is being sponsored by the Montreal Ecological Research Center (CREM) at the University of Montreal, Montreal Canada from June 1-3, 1988. Scheduled sessions and papers include:

1. Studies in Aerobiology at the University of Montreal

URBAN AEROPALYNOLOGY: THE CASE OF RAGWEED IN 1987 (L. Gagnon, Univ. of Montreal)
RAGWEED DISTRIBUTION ON MONTREAL ISLAND (L. Collins, Univ. of Montreal)
THE POLLEN AND SPORE CALENDAR OF MONTREAL (L. Durand, Univ. of Montreal)
TOWARDS A TYPOLOGY OF POLLEN CURVES (D. Sherknies, Univ. of Montreal)

2. Mold and Fungal Allergies

MOLD ALLERGIES IN THE U.S. (H.A. Burge, Univ. of Michigan Medical Center)
MOLD ALLERGIES IN CANADA (J.H. Day, Kingston General Hospital)
RESPIRATORY ALLERGIES TO FUNGI: INVESTIGATIONS OF BASIDIOSPORES (S. Lehrer, Tulane Medical Center)

3. Characterization of Mold and Pollen Allergens

COMPARATIVE STUDY OF ALLERGENS FROM MYCELIA AND CULTURE MEDIA OF *ALTERNARIA TENUIS* ISOLATES (H.M. Vijay, Drug and Toxicity Division)
COMPARATIVE STUDIES ON BIRCH POLLEN NATIVE TO CANADA.
1. PHYSIOCHEMICAL CHARACTERISTICS (W.M. Nitchuck, Bureau of Biologics)

4. Pollen Forecasting

RAGWEED POLLEN FORECASTING (J.E. Farhnam et al., Allergy-Immunology Associates)
DAILY HERBACEOUS POLLEN FORECASTING (P. Comtois, Univ. of Montreal)

PRESEASON RAGWEED POLLEN FORECASTING (G. Batchelder and P. Comtois, Pollen Research Associates, Inc.)
RELATIONSHIPS BETWEEN AIRBORNE POLLEN CONCENTRATIONS AND WEATHER PARAMETERS IN AN ARID ENVIRONMENT (M.K. O'Rourke, Univ. of Arizona)
SEASONAL PATTERNS OF ALLERGENIC POLLEN AT TORONTO (J.C. Ritchie et al., Univ. of Toronto)
NATIONAL POLLEN FORECASTING FOR TELEVISION (D.E. Gebhard et al., Multi Data Inc.)

5. Ragweed Ecology and Genetics

RAGWEED ECOLOGY AND SYSTEMATICS (C. Crompton, Biosystematic Research Center)
RECIPROCAL HYBRIDS OF COMMON RAGWEED AND GIANT RAGWEED AND RECOVERY OF ONE ANDROGENETIC PLANT (G. Vincent et al., Montreal Botanical Garden)
RAGWEED AEROBIOLOGY AND URBAN POLLINOSIS AVOIDANCE (F.A. Fishbach, Univ. of Wisconsin)

6. Pollen and Spore Identification Session

(Co-hosted by the Jacques-Rousseau Palynology Laboratory and the Elzear-Campagna Aerobiology Laboratory, Department of Geography)

7. Allergen Research and Standardization

FUTURE DIRECTIONS IN ALLERGEN RESEARCH (J. Thompson, Hollister-Stier)
ALLERGENIC ABSTRACTS. WHAT DOES STANDARDIZATION MEAN? (W.M. Nitchuck, Bureau of Biologics)
COMPARISONS OF ALLERGENIC POTENCIES OF 8 ISOLATES OF *ALTERNARIA TENUIS*, CANDIDATES FOR PREPARATION OF REFERENCE STANDARDS (D.F. Copeland et al., Montreal and Ottawa)

8. Bacterial Aerosols

THE WATER-TO-AIR EJECTION OF DROPS ENRICHED WITH BACTERIA AND OTHER MATERIALS (D.C. Blanchard, S.U.N.Y., Albany)
AEROSOLIZATION OF MYCOBACTERIA (J.O. Falkinham III et al., Virginia Polytechnic Institute)

9. Human Respiratory Tract and the Environment

AEROSOL CHEMOTHERAPY OF RESPIRATORY VIRUS INFECTIONS (B.E. Gilbert and V. Knight, Baylor College of Medicine)
ACID AIR IN THE AEROBIOLOGY OF THE HUMAN RESPIRATORY TRACT (T.B. Martonen, Environmental Protection Agency)
RESPIRATORY OCCUPATIONAL DISEASES (J.-L. Malo and A. Cartier, Hopital Sacre-Coeur)
ENVIRONMENTAL EVALUATION OF PATIENTS REFERRED FOR MOLD RESPIRATORY ALLERGY (Z. Chad and P. Comtois, Hopital Ste-Justine)

Plans are also underway for the second conference to be held in Ottawa from June 7-9, 1989. For information contact Paul Comtois or Louise Collins, CREM, University of Montreal, Montreal, Canada H3C 3J7.

7 INTERNATIONAL PALYNOLOGICAL CONGRESS

The 7th IPC will be held at the University of Queensland in Brisbane, Australia from August 28 to September 3, 1988. Symposium topics were listed in IAA Newsletter #26. For Congress information write to 7 IPC, Uniquest Ltd, University of Queensland, St. Lucia Qld, Australia 4067.

SEVENTH INTERNATIONAL CONGRESS ON AEROSOLS IN MEDICINE

The International Society for Aerosols in Medicine will hold its seventh conference in Rochester, New York from September 25-29, 1988. Symposia planned for the congress include:

I. AEROSOL GENERATION AND ADMINISTRATION IN PHYSIOLOGICAL AND MEDICAL STUDIES
II. THERAPEUTIC AND PROPHYLATIC APPLICATIONS OF AEROSOLS
III. DIAGNOSTIC APPLICATIONS OF AEROSOLS
IV. HEALTH EFFECTS OF AMBIENT POLLUTANTS: THE ROLE OF CLINICAL STUDIES

Topics for the Poster/Discussion Sessions were listed in IAA Newsletter # 26. To receive registration materials write to International Congress of Aerosols in Medicine, Attention: Paul J. Lambiase, University of Rochester Medical Center, 601 Elwood Ave., Box 677, Rochester, New York 14642.

FOURTH INTERNATIONAL MYCOLOGICAL CONGRESS

The Congress will be held at the University of Regensburg, West Germany from 28 August to 3 September 1990. All scientists working on fungi in different fields of biology are invited to join the Regensburg Congress which is expected to be the largest International Mycological Congress yet held. Further information can be obtained from Prof. Dr. A. Bresinsky, Institut fur Botanik, Universitat, Regensburg, Universitatsstrasse 31, Postfach 397, 8400 Regensburg, West Germany.

OTHER MEETINGS

Les Pollens Allergisants et les Facteurs de l'Environment, Paris, April 13-16, 1988. Organizers are M.Th. Cerceau, M.L. Barthelemy, M.B. David, and M.G. Peltre.

Aerobiological Workshop: Monitoring Aeroallergens in Italy and Europe, Perugia, May 20, 1988. Organized by Prof. G. Frenguelli.

Scandinavian Palynological Symposium, Stockholm May 26-28, 1988. Organizers: Prof. E. Friis and Dr. S. Nilsson.

International Conference on the Impact of Viral Diseases on Health and Medical Services in Saudi Arabia and the Middle East, Riyadh, Saudi Arabia June 5-9, 1988.

Annual Meeting of European Acad. of Allergol. and Clin. Immunol., Copenhagen, June 18-22, 1988. For information write to P.O. Box 2205 DK-1018, Copenhagen K, Denmark.

Intrinsic Asthma, Davos, September 20-21, 1988 in Davos, Switzerland. For information contact Dr. Menz or Dr. Schmitz-Schumann, Hochgebirgsklinik Davos-Wolfgang, CH-7265 Wolfgang, Switzerland.

XIII International Congress of Allergology and Clinical Immunology, Montreux, Switzerland, October 16-21, 1988.

Assessing Bioaerosol Hazards in the Work Place, University of Michigan, Oct 4-6, 1988. For information contact Dr. Harriet Burge R6621 Kresge I Box 0529, University of Michigan Med. Ctr., Ann Arbor, Michigan 48109 USA.

First Congress of the European Society of Climatotherapy, Oberjoch/Hindenlang in the Bavarian Alps, October 28-30, 1988. For information contact Dr. J. Lecheler, Aertlicher Direktor des Athmazentrums Jugenddorf Buchenhohe, D-8240 Berchtesgaden.

8th World Clean Air Congress (IUAPPA), September 11-15, 1989, The Hague, The Netherlands. For information write to Box 186, NL-2600 AD Delft, The Netherlands

XIV Congress of the European Academy of Allergology and Clinical Immunology, West Berlin, September 17-22, 1989. For information contact Congress Management, XIVth EAACI Congress, Letzter Hasenpfad 6 1, D-6000 Frankfurt am Main 70, Federal Republic of Germany. Details on the scientific program were listed in Newsletter #26

REMINDER - Send notices of upcoming meetings to the Newsletter Editor. Be sure to include details about the dates and location of the meeting as well as the name and address of a contact person. The deadlines for the Newsletter are April 15 and September 15 for the Spring and Fall editions.

4TH INTERNATIONAL CONFERENCE ON AEROBIOLOGY

The First Circular for the 4th International Conference on Aerobiology has been mailed to all IAA members. The conference will be held from September 3-7, 1990 in Stockholm, Sweden. The call for papers and/or posters will be announced in a later circular. Field trips are being planned in addition to various shorter excursions during the conference itself. A congress dinner and other special events for both delegates and accompanying members will be arranged.

Symposia planned for the meetings include the following:

1. The significance of air pollution in aerobiology
2. Aeroallergens
3. Meteorological aspects of aerobiology
4. Ecological aspects of aerobiology-past and present
5. Bio-aerosols indoors
6. Methodology, sampling and analyzing
7. Microbiology and Palynology
8. Phytopathology
9. Committees and Working Group Reports (General Symposium)
10. Minisymposia on special topics

Remember to return the postcard, which was included with the circular, by 1 July 1988. If you have not received the circular, write to

Administrative Secretary
4th International Conference on Aerobiology
Konferensservice AB
Box 4037
S-171 04 Solna
Sweden

NEWS FROM IAA MEMBERS

Research News
New or Ongoing Research Projects by IAA Members

Harriet Burge - Bioaerosols in homes in three eastern US cities, in conjunction with the Harvard 6 cities lung studies.

Irma Rosas - Relationships between respiratory diseases and aeroallergen concentrations in Mexico City.

H. Morrow Brown - Intermittent hourly air sampling compared with continuous air sampling for pollen and spores. Also air sampling from a moving vehicle on motorway using a new volumetric pumping device.

H. A. McCartney - Research into the mechanisms for spore, pollen, and bacterial dispersal by wind and rain.

Herbert Straka - Palynologia Madagassica et Mascarenica, pollen and spore morphology.

Recent Publications by IAA Members

S. Chanda and S. Mandal. 1986. Aerobiology in Eastern India (Appendix II). In Airborne pollen, spores and other plant material of India - A Survey, P.K.K. Nair, A.P. Joshi and S.V. Gangal (eds). Published by CSIR Centre for Biochemicals and National Botanical Research Institute, Lucknow.

S. Banik, K. Bhattacharya and **S. Chanda**. 1986. Pollen flora of Dum Dum and the adjacent areas of West Bengal with reference to the identification of dispersed palynomorphs. Trans. Bose Res. Inst. 49(1-2): 1-21.

H.D. Frinking, A. Gorissen, and M.J. Verheul. 1987. Dissemination of spores in a glasshouse: Pattern or chaos? Int. J. Biometeor. 31: 147-156.

A.R. Al-Frayh, **S.M. Hasnain**, J.D. Wilson, and H.A. Harfi. 1988. Fungal aeroallergens in the atmosphere of Saudi Arabia. I. Preliminary communication. Annals of Saudi Medicine. Vol. 8. No. 4.

H.J. Wedner, V.E. Zenger, **W. H. Lewis**. 1987 Allergic reactivity of *Parthenium hysterophorus* (Santa Maria Feverfew) pollen: An unrecognized allergen. Int. Archs/ Allergy appl. Immun. 84: 116-122.

H.A. McCartney and D.E. Aylor. 1987. Relative contribution of sedimentation and impaction to deposition of particles in a crop canopy. Agric. Forest Meteorology. 40: 343-358.

H.A. McCartney and **B.D.L. Fitt**. 1987. Spore dispersal gradients and disease dispersal. In Population and Plant Pathogens, Their Dynamics and Genetics. ed. M.S. Wolfe and C.E. Caton. Oxford: Blackwell Scientific Publications.

H.A. McCartney and A. Bainbridge. 1987. Deposition of *Erysiphe graminis* conidia on a barley crop. I. Measurements. Journal of Phytopathology 118, 243-257.

H.A. McCartney. 1987. Deposition of *Erysiphe graminis* on a barley crop. II. Consequences for spore dispersal. Journal of Phytopathology. 118, 258-264.

O.C. MacDonald and **H.A. McCartney**. 1987. Calculation of splash droplet trajectories. Agric. Forest Meteorology. 39: 175-190.

B.D.L. Fitt, **H.A. McCartney**, N.F. Creighton, M.E. Lacey, and P.J. Walklate. 1988. Dispersal of *Rhynchosporium secalis* conidia from infected barley leaves or straw by simulated rain. Annals of Applied Biology.

H. Morrow Brown - Airborne crystals of anhydrose calcium sulphate - a new air pollutant. 1987. Advances in Aerobiology. EXS 51. Birkhauser, Verlag, Basel.

I Rosas, S. Gutierrez, A. Yela, M. Selman, L. Teran, and A. Mendoza. 1988. Response of workers to airborne microorganisms at a paper manufacturing plant. Archivos de Investigacion Medica. Vol 19.

B. Sigmar. 1987. Pollenflug 1986 in Tirol (Austria). Galtur, Imst Innsbruck Obergurgl Worgl, Ber. nat.-med. Verein Innsbruck 74: 49-59.

H. Straka. 1986. Der pollen - eine Kompassnadel fur die systematik?. Nat. Rdsch. 39: 432-437.

L. Kappen and **H. Straka**. 1988. Pollen and spore transport in to the Antarctic. Polar Biology. 8: 173-180.

New Books By IAA Members

E. Fuchs, K.H. Schulz (Eds). 1987. Manuale allergologicum. Dustri Verlag, Munchen Deisenhofen.

H. Morrow Brown. 1985. The Asthma and Allergy Reference Book: A Guide, Harper & Row.

K. Lienau, **H. Straka**, and B. Friedrich. 1986. Palynologia Madagassica et Mascarenica. Fam. 167-181. Trop. subtrop. Pflanzenwelt 55. Akad Wiss Lit. Mainz (English translation for the numerical pollen formulas).

H. Straka and B. Friedrich. 1988. Palynologia Madagassica et Mascarenica, Fam. 65-97. Trop. subtrop. Pflanzenwelt 61. Akad. Wiss. Lit. Mainz.

M.N.B.M. Driessen, J.W.M. Derksen, **F.Th.M. Spieksma**, E. Roetman. 1988. Pollenatlas van de Nederlandse atmosfeer. Fisons B.V. Leusden.

Changes in Affiliation or Address

The Following Individuals can be reached at the addresses below.

E. Fuchs, Pfitznerstrasse 5, D-6200 Wiesbaden, Federal Republic of Germany.

K. Gajewski, Department of Geography, Western Illinois University, Macomb, Illinois 61455.

Mary L. Jelks, 1930 Clematis St. Sarasota, FL 34239.

Stein Johansen, Gina Krogs V7, 7046 Trondheim, Norway.

H.A. McCartney, Plant Pathology Dept, I.A.C.R., Rothamsted Exp. Station, Harpenden, Herts., AL5 2JQ, U.K.

M.L. Salgado-Labouriau, Dept. Biologia Celular, Universidade de Brasilia, Brasilia, DF, 70910, Brazil.

Other News

Allan Brandon (and the Allergy Medical Group of San Diego) writes "We have been participating in numerous clinical investigative studies for the past 30 years. We are currently evaluating new medications and/or procedures in the treatment and/or diagnosis of asthma, allergic rhinitis, anxiety, depression, gastritis, peptic ulcers, ... and other disorders. We would like anyone in need of more investigators for multiclinic and/or other diagnostic or treatment research studies to please contact us to see if we can be of assistance. We enjoy participating and trying to be helpful."

Syed Mohammed Hasnain received a performance award for excellence by the King Faisal Specialist Hospital and Research Centre for 1987-1988.

H.A. McCartney writes that the U.K. Aerosol society has interests in aerobiological matters, especially relating to industrial hygiene and agriculture. He also indicates that the "Aerobiology group" which was formally in the Physiology and Environmental Physics Department at Rothamsted Experiment Station was transferred to the Plant Pathology Department and consists of himself and Dr. B.D.L. Fitt plus support staff.

Herbert Straka received the Chevalier de l'Ordre National Malgache.

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REMEMBER TO SEND IN NEWS ITEMS FOR THE NEWSLETTER

Airborne Frogs???

Ursula Allitt submitted the following news item about an unusual aerobiological phenomenon in England. Dr. Allitt writes "Red sand from the Sahara is deposited in European countries from time to time; it even happened in Cambridge once, in the summer of 1968, but unfortunately I was spending the weekend in London, and missed the phenomenon. However, a much more exciting airborne import from the Sahara was deposited in Cirencester (pronounced Sissiter), England, in the summer of 1987. This was reported in The Times on 8 February 1988.

The flying pink frogs

Scientists think they have solved the riddle of the pink frogs of Cirencester.

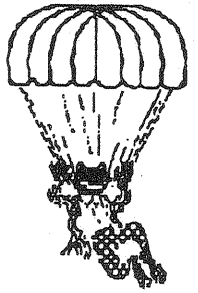
Hundreds of them were found hopping around the Wiltshire town after a storm last summer, startling drivers and shoppers.

Now, after months of research, the Gloucestershire Trust for Nature Conservation has an answer: they flew in, airlifted from the sands of the Sahara desert.

Freak winds sucked them up and carried them thousands of miles to Cirencester where they were dumped in a rainstorm, which also left cars covered in pink sand.

The frogs sink deep in the desert to escape the heat and are dyed pink by crystals in the sand.

However, not all Times readers are inclined to believe such improbable tales, and on 13 February the following letter appeared in the correspondence columns. There are so many widely experienced people reading The Times that sometimes a correspondence on an unlikely topic 'takes off', and it is quite possible that we shall shortly be informed of other instances of flying animals, and if we are I shall let you know."..... Ursula Allitt, Cambridge



Far-flung frogs

From Mr Bernard Kaukas

Sir, Your news item (February 8) concerning the pink frogs hopping about the streets of Cirencester last summer after a storm attributes the phenomenon to the fact (?) that they "flew in" from the Sahara desert.

"Freak winds" have long been the excuse for downpours of extraneous matter deposited in all parts of the globe. This time pink frogs actually landed and we are asked to believe that these plucky little creatures, flying in a straight-line projection from the desert at, say, 60 mph (they had, as far as one knows, no goggles), were airborne for at least 20 hours without benefit of stewardesses or alcoholic refreshment.

Furthermore, it seems, they floated gently down from, say, 10,000ft and landed unscathed. As far as I am aware no parachutes were found, but perhaps these canny little devils buried them in the pink sand which arrived with them.

Yours incredulously,
BERNARD KAUKAS,
13 Lynwood Road, Ealing, W5.
February 8.

RESEARCH REPORTS

RISK TO FRUIT TREES AND NATIVE TREES DUE TO CONTROL OF BLACK CHERRY (Prunus serotina) BY SILVERLEAF FUNGUS (Chondrostereum purpureum)

M.D. de Jong, University for Agriculture, Wageningen, The Netherlands.
(A thesis in Dutch with an English summary).

Author's Abstract: "The shrub *Prunus serotina,* introduced from North America, became a forest pest in the Netherlands. Biological control was considered using the fungus *Chondrostereum purpureum,* commonly present as a saprophyte and parasite in wood. *C. purpureum* can cause silverleaf disease in cultivated fruit trees. As biological control of *P. serotina* was shown to be effective, a risk analysis was performed using a theoretical framework provided by epidemiology and air pollution theory, simulated models, and empirical parametrization of these models. The risk to native, non-target trees within the forest due to biological control was negligible, mainly because of their low susceptibility. The risk to fruit trees at 500 m distance from the forest due to biological control was high and at 5000 m distance low. For some areas, the risk to non-target trees, due to biological control, was calculated to be of the same order of magnitude as or less than the risk due to natural infection. A map of the Netherlands showed that only 4 per cent of the hour-squares contained both forests eligible for treatment and orchards possibly endangered by biological control in nearby forests."

The abstract of this thesis was submitted to the Newsletter by Frits Spieksma. Dr. Spieksma writes "This thesis, based on phytopathological studies at one of the best centres for agricultural research in Western Europe, contains four chapters with very interesting aerobiological observations, considerations, and models. To my knowledge, this is one of the finest examples in recent years of the application of aerobiology in studies on the effects of artificial introduction of a fungus as a microbial herbicide."

MODELING OF DISPERSION AND DEPOSITION OF TREE POLLEN WITHIN A FOREST CANOPY

F. Di-Giovanni, Department of Geography, The University of Hull, Hull, HU6 7RX, United Kingdom.

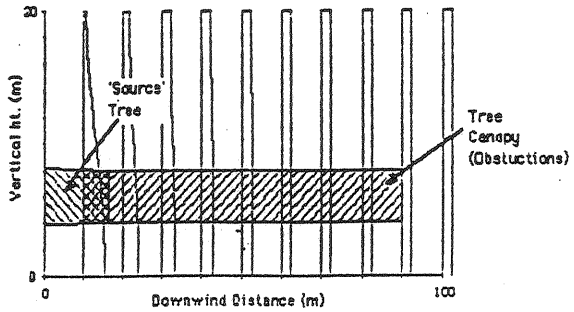
Research is in progress to develop atmospheric dispersion models for tree pollen in closed-canopy woodlands. This is an attempt to 'work-backwards' on Quaternary pollen deposits to evaluate the vegetation pattern that used to surround the site of sample retrieval.

Three main atmospheric diffusion models (K-theory, Gaussian plume and Random Walk models) are being compared for application to the problem. It is obvious that 'special considerations' have to be applied to the Quaternary situation, where climatological data are scarce. Therefore, the usual types of analyses carried out for present-day studies in dissemination of particles through vegetation (1) need to be modified for palynological data retrieval (2).

FIELDWORK/MODEL VALIDATION

Several sites were chosen in closed-canopy woodlands where pollen-traps were set. Tree patterns surrounding the site were measured and climatological data for the trapping-period (one year) were obtained. These provided the input into the theoretical models, whose output will be compared against the actual pollen counts taken to discern model validity.

So far, theoretical modeling applied to typical data from other references (3) has produced the types of results shown below in 2-D.



VERT. CONC. PROFILES AT VARIOUS DISTANCES FROM SOURCE

At present a novel 3-Dimensional approach to the 2-D method is being developed; this will allow nonhomogeneous vegetative canopies (i.e. natural woodland) to be modeled.

CONCLUSIONS TO DATE

Full data required to run the theoretical models is lacking in the palynological setting. However, these models provide an insight into the pollen-dispersal processes, and provide further opportunity to develop a hybrid method combining features of physical and the presently used curve-fitting methods of most mainstream palynologists (4).

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Editor's note: Mr. Di-Giovanni is very interested in contacting others with similar research interests.

DEMONSTRATION OF LONG-DISTANCE DISPERSAL IN PLANT DISEASE EPIDEMIOLOGY: METHODOLOGICAL CRITERIA

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Long-distance dispersal in wind-borne plant pathogens is an established fact. It may initiate unexpected epidemics. The explanatory value of long-distance dispersal is great. But long-distance dispersal has also been blamed as a cause of epidemics where it was not, for reasons of political excuse and/or lack of knowledge. In at least one case, the assumption of long-distance dispersal did set a research program on the wrong footing (1). Supposedly, yellow rust *(Puccinia striiformis)* was wind-blown from southern Europe into the Netherlands, whereas subsequent research showed it to be endemic in the Netherlands.

Evidence on long-distance dispersal is usually dealt with in a rather nonchalant manner. Relatively complete and convincing evidence, as provided e.g. for black stem rust *(Puccinia graminis)* in India (2) is relatively rare. A guideline or check-list may be needed to judge the value of the evidence. Such guidelines are, or should be, part of research methodology (3).

For long-distance dispersal of plant disease I propose that all evidence be checked for the following set of criteria (4):

1. Crop phenology in the source area.
2. Rust phenology in the source area.
3. Weather conditions at the source area
4. Air trajectories from source to target.
5. Spore content of the air between source and target.
6. Spore trapping data in the target area.
7. Weather conditions at the target area.
8. Crop phenology in the target area.
9. Rust phenology data in the target area.
10. Matching of pathotypes in source and target areas.

Any evidence for long-distance dispersal should ideally provide information on all 10 criteria, and all of this information should be compatible. Criteria 1-3 refer to emission, 4-5 to transmission, and 6-9 to immission, whereas criterion 10 refers to genetic identity. Advocating the use of these or similar criteria does

not mean that every paper must satisfy the whole set of 10 criteria. On the other hand, due respect for these criteria may improve the quality of an argument to be published in print.

The 10 criteria were used to examine the evidence for long-distance dispersal of cereal rusts in Europe (4). Very few publications gained a 'pass' mark. For further discussion the interested reader is referred to Volume II of The Cereal Rusts (4). The classical publications on *P. graminis* of wheat (5,6,7) contain by far the best work done in Europe, though the criteria 1 to 3 were not considered. Interesting recent work in *Erysiphe graminis* of barley by Limpert (8) emphasizes criterion # 10, and concerns pathosystem genetics.

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A BRIEF REPORT ON THE ACTIVITIES OF THE DIVISION OF PALYNOLOGY AND ENVIRONMENTAL BIOLOGY, BOISE INSTITUTE, CALCUTTA

Sunirmal Chanda and Swati Gupta

The following senior scholars of the Division of Palynology and Environmental Biology received Ph.D. (Sc.) degrees from the University of Calcutta under the guidance of Prof. Sunirmal Chanda:

1. Mr. Samiran Kundu's thesis entitled "Aerobiology of pollen grains in Darjeeling with reference to environmental pollution and respiratory allergy" deals with a systematic field survey in Darjeeling and adjacent areas. Pollen morphology of 231 plant species has been done with 51 different pollen types recorded from the air of Darjeeling. When clinical tests of 16 local pollen types were performed,grass, *Cocos nucifera, Lantana camara,* etc., were found to be allergenically highly significant. RAST and PRIST tests were performed to determine the total serum IgE levels of normal and allergic individuals and specific IgE levels of the allergic individuals. The total serum IgE in 64 normal non-allergic subjects and 52 allergic individuals was estimated.

2. Miss Swati Gupta's thesis entitled "Morphology, Aerobiology, Physiology and Chemistry of the pollen grains of some sub-tropical Eastern Himalayan plants" deals with a floristic survey of Kurseong Hill. Three hundred sixty species under 298 genera and 111 families have been recorded. Pollen diagnoses of 176 species have been done. A total of 32 airborne pollen types were recorded along with a few fern spores. In vitro pollen germination and tube growth and chemical analyses of two selected plant species *Solanum sisybrifolium* and *Lantana camara* were performed.

RESEARCH REPORTS - Members are urged to send in research reports to inform IAA members about new or ongoing projects. These should be in the form of brief (1-3 pages) summaries since the Newsletter cannot print manuscripts containing actual data or experimental results.

BOOK REVIEWS

EUROPAISCHES POLLENFLUG-SYMPOSIUM, 1987; Vortage und Berichte. W. Kersten and P.G.von Wahl, Stiftung Deutscher Polleninformationsdienst, eds. Verlag fur Medizin und Umwelt GmbH, Krefeld, FRG. 192 pages.

In various western Europe countries increasing interest in the relation between airborne pollen concentrations and symptoms of hay fever has led to the installation of a growing number of pollen traps. The situation in West Germany is very illustrative of these recent developments. In this country with over 60 million inhabitants and some 5 million hay fever sufferers, approximately 30 volumetric pollen traps were operating in 1987, largely as a result of the initiating activities of Ruppert, Kersten and Puls from 1981.

It is evident that such a vast network of observation stations needs comparative aerobiological, allergological, and meteorological evaluations from time to time, in order to produce a reliable information system regarding both yesterday's airborne pollen and the forecast for tomorrow's pollen or hay fever condition. To this aim, in March 1987, the First European Airborne Pollen Symposium was held in Konigswinter. Participants included many German aerobiologists and allergists as well as representative aerobiologists from nine other European countries.

Apart from much detailed information on regional and national developments in aero-palynology in Europe, this Symposium Proceedings clearly shows that there is an urgent need for exchange of data among the European countries. Airborne pollen does not recognize national frontiers and may cause pollinosis at both sides of a borders. I.A.A.'s working group "European Pollen/Spore Allergy Network" chaired by Dr. Siwert Nilsson is trying to take up this challenge.

F.Th.M. Spieksma
Leiden

GRANA

GRANA is an international journal of palynology and aerobiology published under the auspices of The Scandinavian Palynological Collegium in affiliation with the International Association for Aerobiology.

"GRANA publishes concentrated original papers, mainly on theoretical palynology (morphology of pollen grains and spores of Eucaryota and their importance for plant taxonomy, ecology, phytogeography, paleobotany, etc.) and aerobiology. Aerobiology involves studies of airborne biological particles, such as pollen, spores, etc., and their launching, dispersal and final deposition. The significance of these particles in medicine (allergology) and plant pathology is of particular interest."

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