

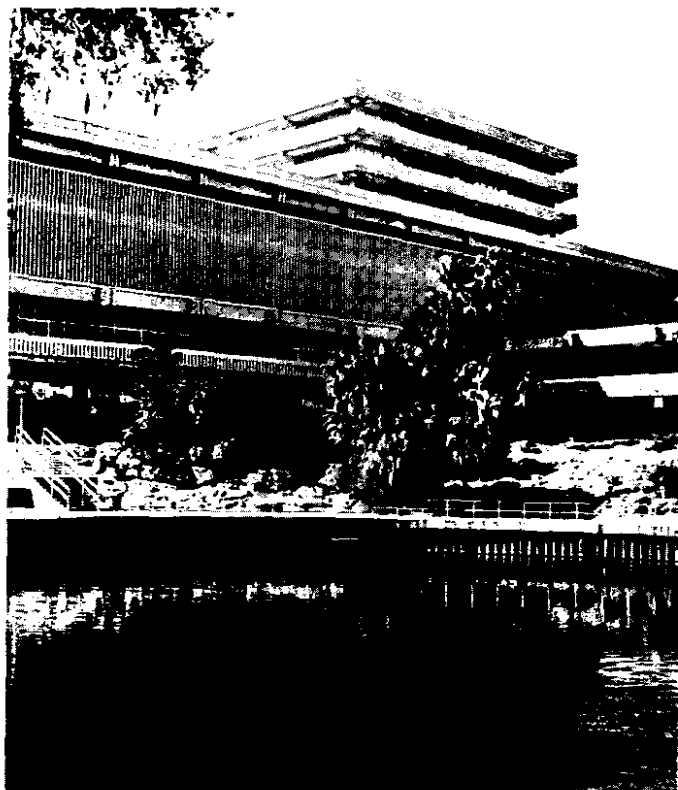
sip

newsletter

society for invertebrate pathology

Volume XI, Number 1
February 1979

XIIth ANNUAL MEETING
SOCIETY FOR INVERTEBRATE PATHOLOGY
University of Florida, Gainesville, Florida
August 26-30, 1979



J. Wayne Reitz Union, site of 1979 SIP meetings

REGISTRATION

As previously announced, the XIIth Annual Meeting of the Society for Invertebrate Pathology will be held at the University of Florida, Gainesville, Florida, August 26-31, 1979.

Advance Registration

To avoid inconvenience of registration processing upon arrival, participants are advised to register in advance of the Annual Meeting by submitting the attached registration application to the S.I.P. Local Arrangements Committee, c/o Entomology and Nematology Department, University of Florida, Gainesville, Florida 32611, and by submitting the request for campus housing (Hume Hall or Bently Towers) directly to Conference Housing, c/o Bill Hahn, Housing Office, University of Florida, Gainesville, Florida 32611. Do not send housing applications to the Entomology and Nematology Department. Registration checks and money orders should be made out to the Society for Invertebrate Pathology.

Registration Fees

- \$30.00 - Advance registration received by mail on or before July 23.
- \$35.00 - Late registration received after July by mail or at the meeting.
- \$10.00 - Graduate or undergraduate student registration received by mail or at the meeting.

Registration fees include name badges, directories, programs, and copies of abstracts. The registration fee also helps defray meeting expenses such as printing, postage, meeting space, mixers, and other associated costs.

Attempts will be made to mail a general program prior to the Annual Meeting as part of the *Summer Newsletter*. Abstracts will be distributed at the Registration Desk in the J. Wayne Reitz Student Union upon arrival on campus.

Refunds

The Society will refund advance registration fees for all cancellations received in writing or by telegram on or prior to Saturday, August 25, 1979. NO REFUNDS WILL BE GRANTED AFTER THIS DATE. Refunds will be mailed from the Society's campus office following the Annual Meeting.

PROVISIONAL PROGRAM

Sunday, August 26

10:00-12:00 Council Meeting
Registration
12:00- 2:00 Luncheon for Council
2:00- 4:00 Council Meeting continued
Registration
7:30-10:00 Mixer/Museum Tour

Monday, August 27

8:30- 6:00 Registration
8:30-12:30 Symposium - Mechanisms of Disease
Transmission
12:30- 2:00 Luncheon
2:00- 5:30 Contributed Papers
5:30- 7:30 Editorial/Publication Board Dinner
5:30- 7:30 Dinner
7:30-10:00 Group Meeting - Safety of Biological
Control Agents

Tuesday, August 28

8:30-12:30 Symposium - Invertebrate Circulatory
Systems
12:30- 2:00 Luncheon
2:00- 5:30 Contributed Papers followed by
Business Meeting
5:30- 7:30 Barbecue
7:30-10:00 Workshop - Microsporida

Wednesday, August 29

8:30-12:30 Symposium - Epizootiology of
Invertebrate Diseases
12:30- 2:00 Luncheon
2:00- 5:30 Contributed Papers
5:30- 7:30 Dinner
7:30-10:00 Workshop - Environmental Monitoring

Thursday, August 30

8:30-12:30 Symposium - The Potential for
Genetic Manipulation in
Invertebrate Pathology
12:30- 2:00 Luncheon
2:00- 5:30 Contributed Papers
5:30- 7:30 Dinner
7:30-10:00 Workshop - Formulations/Applications

CALL FOR PAPERS AND ABSTRACTS - DEADLINE, APRIL 15, 1979

Papers for the afternoon Contributed Paper Sessions are being solicited. Those who intend to present papers are urged to prepare their talks carefully and confine the length of their reports so they do not exceed 15 minutes. Projection facilities for standard 2" X 2" (5.1 X 5.1 cm) slides will be available for the Contributed Paper Sessions. Those requiring special projection equipment should notify the Program Committee at the time abstracts are submitted.

The Abstracts of the Annual Meeting of the Society for Invertebrate Pathology will be prepared by direct reproduction of the abstract submitted by each author. There will be no editing of the author's copy. Thus, every error which appears in the submitted abstract will also appear in the printed Abstracts. The Program Co-Chairmen recommend the following procedure for the preparation of the abstract.

1. Use a typewriter, preferably electric, with a carbon ribbon. If such a typewriter is unavailable, use a typewriter with a fairly new black ribbon.
2. Place the enclosed sample abstract form under a blank typing sheet, and insert in the typewriter. The dark lines will show through the usual grades of typing paper.
3. Single space all typing. The title, authorship, and text must be within the boxes as outlined on the enclosed sample form. Leave no top or left margin within the boxes. Type only within the space outlined on the sample form.
4. The Style Manual for Biological Journals, published by the American Institute of Biological Sciences, should be used as a guide to abbreviations and symbols. Proprietary and trade names must be accompanied, at first mention, by the established or generic names. When using abbreviations for compounds, the name must be spelled in full at the first mention.
5. **REMEMBER!** Your abstract will be printed exactly as submitted. Any smudges, errors, and misspellings on your copy will be evident also in the published Abstracts!
6. Poorly typed abstracts, unsuitable for direct reproduction, will be returned to the authors for retyping. Unless these abstracts are retyped promptly, they may miss the printer's deadline and may not appear in the published Abstracts.
7. Send your abstract no later than April 15 to:
Dr. John Harshbarger
c/o Registry of Tumors in Lower Animals
Smithsonian Institution
Washington, D.C. 20560
8. Enclose a stamped, self-addressed envelope or self-addressed postal card with your abstract if you wish acknowledgment that the abstract was received.

POSTER SESSIONS

This year the Society again will attempt to give members and their students the opportunity to present their research results via Poster Sessions. Many Societies have found this to be a useful approach for members to communicate effectively with their colleagues. The Poster Session is ideally suited for presentation of graphs, data tabulations, and pictures. Participants bring their own charts and other illustrations to the assigned room where large (4' X 8' or 1.2 X 2.4 m) bulletin boards will have been set up against the walls. The authors mount their posters onto the assigned board at a convenient time preceding the scheduled half-day session (to be announced in a later Newsletter). A small amount of text should also be posted to illustrate the main points of the presentation. If possible, abstracts of information to be presented at the Poster Session should be made available. It is suggested that authors bring with them 200 copies of a single page abstract to be distributed to those interested. Abstracts should be prepared as above. If desired, these can be included in the compilation of abstracts to be distributed to all participants and should be sent to Dr. Harshbarger by the April 15th deadline. Type in at the bottom middle of the abstract POSTER SESSION. In this way the Program Committee can properly identify where abstracts are to go in the Program.

During the Session, authors will remain with their material for approximately one hour to expand on their display and to answer questions. Visitors to the Poster Sessions may choose to go directly to the display that interests them or wander through the area and glance at several posters.

GENERAL INFORMATION

Location

The University of Florida is located in Gainesville, 80 miles southwest of Jacksonville, 100 miles north of Orlando and 50 miles from both the Gulf of Mexico and the Atlantic Ocean. Temperatures for summer months range from 70 in the day to 70 in the evening. Normal rainfall is limited to late afternoon hours. Population of the metropolitan area is approximately 75,000.

Recreation Facilities

Orlando, the site of Disneyworld, Sea World and Circus World, can be reached by car in 2 1/2 hours. St. Augustine, the nation's oldest city, and Jacksonville with its beautiful beaches, are less than 2 hours by car. Numerous freshwater lakes and rivers offer ample opportunity for fishing, swimming, and boating in the north Florida area.

If enough family members accompany SIP participants, a day excursion by bus to one of the points of interest --probably Disneyworld or St. Augustine--will be planned. Further information on this will appear in the June newsletter.

The campus has swimming pools, tennis, handball, and volleyball courts for participants who stay in university housing.

Meeting Facilities

All meetings will be held in the J. Wayne Reitz Union, in the center of campus.

University Housing

General:

Rates for dormitory housing will be based on a minimum of 5 nights, August 26-30, inclusive. Early arrivals or late departures must be arranged individually and will be charged on a pro-rated basis.

All on-campus facilities are air-conditioned and within walking distance of the Reitz Union. Payment must be made by check, traveler's check, or cash upon arrival. Normally no refunds are made.

Hume Residence Hall:

Accommodations will be available in Hume Hall at a cost of \$42 for 5 nights, single occupancy. Community bathrooms are located on each floor. Weekly linen service is provided, but there is no daily maid service. Double occupancy at a somewhat reduced rate will be arranged, provided prospective roommates send their room requests together.

Beaty Towers:

A limited number of 2-bedroom, 4-bed suites with kitchenettes will be available for families in Beaty Towers. Weekly linen service is provided. Cost is \$79.50 for 5 nights.

J. Wayne Reitz Union:

A limited number of hotel-type rooms will be available in the Reitz Union on a first come, first serve basis. Rooms are \$15 single occupancy and \$19 double occupancy per night. Two suites with two rooms and a bath will be available at the following rates: single \$21; double \$25; triple \$28; quadruple \$31.

Reservations:

Accommodations in Hume Hall or Beaty Towers may be made by completing the form attached and returning it to Bill Hahn at the Campus Housing Office (address appears on reverse).

Reitz Union accommodations may be made by contacting:

Guest Room Reservations
J. Wayne Reitz Union
University of Florida
Gainesville, Florida 32611

PLEASE BE SURE TO SPECIFY YOUR ASSOCIATION WITH THE SIP MEETING.

Reservations will be taken until July 15, 1979.

Off-Campus Housing

Requests for off-campus accommodations should be made directly to the motel of your choice. A block of rooms has been reserved at each of the following:

1. Gainesville Hilton, 2900 SW 13th Street, Gainesville, Florida 32608, (904) 377-4000; single \$22; double \$28; 2 1/2 miles to Reitz Union.
2. Holiday Inn, 1250 W. University Avenue, Gainesville, Florida 32601; single \$23; double \$29; 1 mile to Reitz Union.

PLEASE BE SURE TO SPECIFY YOUR ASSOCIATION WITH THE SIP MEETING.

Food Service

The cafeteria in the union will be open for three meals a day. Information will be provided at registration.

Transportation

Local Transportation:

University buses will meet incoming flights from Atlanta on Sunday, August 26, to provide transportation to on-campus facilities and the two motels listed above. They will again be available to take participants to outgoing flights on Friday, August 31.

Air Transportation:

At this time there are only four flights in and four flights out of Gainesville to Atlanta. There is also daily service to and from Miami. Because of the limited service, participants should make reservations well in advance. Anyone unable to make reservations or wishing to combine the meeting with a vacation may wish to consider flying to Jacksonville or Orlando and renting a car.

Campus Parking:

Parking restrictions will be lifted during the meeting because school is not in session. However, the number of available spaces is limited. Participants staying on campus can park in their dormitory lot and walk to the meetings. Others should inquire about parking at registration.

Social Events

Barbecue on the Terrace:

In lieu of a formal banquet, a chicken barbecue will be held on the terrace and colonnade of the Reitz Union on Tuesday, August 28. Tickets for this event will be sold during registration Sunday and Monday.

Welcome Party:

A welcome party will be held Sunday evening in the Florida State Museum (a museum of natural history) on the university campus.

FROM THE PRESIDENT

Invertebrate pathology has grown rapidly in the last few years and has become a regular integral part in pest control. Because of its nature, it has become a source of fundamental information relating to changes in natural populations, either due to disease, or stress from new phenomena occurring in the environment. Invertebrate pathology is now accepted as an essential source book of information for the efficient rearing of test animals, against which any agent, either chemical, biological, or physical environmental may be measured. Furthermore, the study of physiopathology of infected, or ailing insects, when compared to healthy organisms has revealed some very important mechanisms of these animals.

As your new president, I take the opportunity to express thoughts as to the paths of future advances and offer suggestions to the members of the society for possible cooperation in these areas. Indeed we have come along way for experience and time has shown us how to teach invertebrate pathology which is today a respected discipline in most university programs. Organizations such as WHO, FAO, and environmental protection lean heavily upon this discipline where pest control may be operative. In this regard, it is imperative that we expand our type culture collections, and possess a catalog of culture collections that may be available. It is also necessary to have duplicate collections against a possible disaster wiping out a collection. We also need to collect and prepare a bibliography of all pertinent literature that is available in all languages. As your President, I realize that funds are needed for these goals and often the recognition of the importance of these goals is slow in coming.

Other problems have arisen which invertebrate pathologists must deal with. During discussions with international organizations, such as WHO, FAO, and IUBC who are interested in biological control, aspects of official decisions enter. Thus government officials who have no invertebrate pathology training may have to decide what is the risk involved in introducing a bio-preparation. They require information which can be categorized as follows.

1. What is the natural distribution of the insect pathogen (bacteria, virus, etc.) and what are levels that erupt into epizootics? What is the amount of the pathogen present in the insect carcass and does it effect human beings? In this case, it is probably more pertinent to refer polyhedra viruses. Do these enter the food chain?

2. Data are needed on dosage levels, how much and how to produce that amount (industrial scale-up). What is the survival time, distribution, persistence, etc.?

3. Should we introduce a new biopreparation in a certain region, or is that species present in the normal population in the field?

Data on all these points are vital to any official decision of introduction or use of a microbial or similar pathogen. This information will of necessity be obtained from members of the Society who possess the necessary expertise in different types of pathogens. Whenever and wherever possible, the Society should undertake to publish the data in a pamphlet for the benefit of the appropriate people. I would like to invite members to send their data to the secretary of the Society who will collect them for editing by groups who could be appointed later.

Finally, I would like to draw the members attention to another lacuna in our knowledge. We need to have an idea on the spectrum of diseases of pests that have worldwide distribution. This is of some importance, because it may point to a missing specific controlling factor in one region as compared to another, or even a more virulent strain as was the case with mosquito active strains of *B.t.* and *B. sphericus*. Recent reports concerning the beneficial effects of the non-traditional type, i.e., biological control augur well for the future, but they also present us with a difficult problem. Is it possible to insert a biological control agent in some alternative scheme with a chemical system, or an environmental control system, such that we can obtain long-term effectivity, with maximum plant and human environment protection? This is the task before all members of the Society, be they in basic or applied research.

J. Weiser



Do you know how hard it is to find people with the sickle factor Rh+, AB, and the HLA-B27 antigen?

RECENT PUBLICATION AND NEW BOOKS

Selected Topics on the Genus Nosema (Microsporida).

Edited by W. M. Brooks. Misc. Publ. Entomol. Soc. Amer., 11(1):1-95, 1978.

This is a group of six papers which represent the proceedings of a symposium presented at the Annual Meeting of American Institute of Biological Sciences, Corvallis, Oregon, 1975 under the auspices of the Division of Microsporida, Society for Invertebrate Pathology. The entire proceeding is available for a cost of \$3.50 per copy from the Executive Secretary, Entomological Society of America, 4603 Calvert Road, College Park, Maryland 20740, U.S.A.

NEWS NOTE

Well members, it's that time of year again, sort of like income tax and property listing, etc. Yep, it's getting ready for our annual bust again, only this time it's in Florida, which my almanac tells me means "Feast of Flowers," and I always think of Miami skyline, bikinis, roulette wheels, but my correspondent on the spot assures me Gainesville is a plenty gung-ho town. Well, I don't live in Florida, but according to some people down there, I inhabit the Nawth, Nawth Carolina that is, and that's as far Nawth as some wish to go. I don't live in Illinois or Michigan or those places anymore - in fact I wouldn't trade the "Southern Life" - I can't afford another premium. But I would bet that Joe Maddox and Don Paschke and guys up there would be willing to have the meetings right now in Florida. Bring it up to the program committee you guys - tell 'em that our Annual Meetings should be so scheduled that when a southern location is selected, the meeting should be held in the winter, and when a northern area has been picked we should hold the meetings in the summer. Seems simple enough, doesn't it?

My next report will come from my roving correspondent on-the-spot, Ed Hazard, who has offered to send me a list of restaurants, bars, and night-clubs that have his official seal of approval. In conformity with Escoffier, and Guide de France techniques, as well as cognac tasting, Ed has selected stars in the shape of orange blossoms (out of homage to Florida) as a means of quality estimation. The list has not as yet arrived, but Ed, please no lemon blossoms!!

A. Dommas
SIP Newsletter Editor

US/USSR FORESTRY SCIENTIST EXCHANGE PROGRAM FOR MICROBIAL CONTROL

A report detailing a visit to the USSR by a United States scientific team specializing in the microbial control of forest insects is available.

The scientists took the trip to share knowledge of microbial control of forest pests, to develop procedures for exchanging potential microbial control agents useful in forest protection, and to propose various study areas in which cooperative research could be conducted.

M.E. McKnight (USDA Forest Service, Washington, D.C.), C.G. Thompson (USDA Forest Service, Corvallis, Oregon), and W.G. Yendol (The Pennsylvania State University, University Park, Pennsylvania) made up the scientific team. They visited the USSR between May 7 and June 4, 1978, under the terms of the US/USSR Science and Technology Agreement, Working Group on Forestry.

Scientific information was exchanged through discussions with Soviet scientists at the Leningrad Forestry Research Institute, the All-Union Research Institute for Plant Protection (Leningrad), the All-Union Research Institute of Microbiological Products (Moscow), the All-Union Research Institute of Silviculture and Mechanization of Forestry (Pushkino), the Ukrainian Research Institute of Forestry and Agro-Forest Amelioration (Kharkov), the Belorussian Forestry Research Institute (Gomel), and Irkutsk State University (Irkutsk).

The U.S. scientists discussed many topics with the Soviet scientists, including advantages and disadvantages of various bacterial, viral, and fungal pathogens being used against agricultural and forest pests, application methods for microbials, evaluation of effectiveness of potential microbial pathogens for forest insects in each country, survey methods for predicting epizootics, and potential use of integrated pest management systems as part of overall forest management systems.

Preliminary plans formulated for strengthening the cooperative program feature exchange of scientific personnel for joint research on problems of mutual interest.

REPORT ON THE INTERNATIONAL ACTIVITIES OF THE SOCIETY AND COMMISSION FOR INVERTEBRATE PATHOLOGY

In November 1977 the Executive Council of the International Union of Biological Sciences (IUBS) endorsed the proposal developed with the leadership of Dr. Jaroslav Weiser entitled, "A Proposal for the Identification and Preservation of Collections and Type Materials." The text for the proposal will be published in a forthcoming issue of the IUBS Newsletter. It is expected that endorsement of the proposal will follow by other international organizations concerned with the preservation of type material particularly in culture collections of microorganisms.

The Commission on Invertebrate Pathology for which the Society serves in the IUBS was represented by Dr. Weiser in an inter-agency meeting convened in Geneva in June 1978. The meeting included representatives from the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the United Nations Environmental Program (UNEP), and IUBS for which the interests of biological control of insects and weeds and invertebrate pathology serve as a division and a commission respectively.

The recommendations of the meeting include establishing formal information exchange between agencies to facilitate implementation of biological control efforts with respect to the detection and development of biological control agents, the safety for mammals and other non-target organisms of biological agents, particularly microorganisms, the recognition of centers for reference and culture collections of microbiological agents, and the standardization of strains for describing efficacy and safety, and the development of information systems for describing the distribution of useful microbiological agents in nature and the impact of application of microbiological agents as part of control measures for agriculturally and medically important invertebrates. The report is available from the WHO, Geneva, Switzerland as document TDR/VEC/78.2.

The Society for Invertebrate Pathology is requested to respond through the IUBS as to the contributions which the Society can make in the coordination of the identification of individuals and organizations to implement and recommendations made in the inter-agency meeting.

The FAO and the WHO have requested members of the Society to participate in activities contributing to the detection and development of safe and effective biological control agents, particularly microorganisms. The Society through its membership and as a result of the responsibilities it may assume in attempting to implement the recommendations made in the inter-agency meeting (above) continues to serve as the unifying element in all international activities in invertebrate pathology.

The Society was successful in developing an acceptable proposal for obtaining financial support to aid North American scientists to attend the International Colloquium in Prague. The sponsoring agency for the partial travel support is the Fogarty International Center, in the United States National Institutes of Health.

John D. Briggs

MEETING ANNOUNCEMENTS

The 16th International Congress of Entomology

The 16th International Congress of Entomology will be held on August 3-9, 1980 at Kyoto International Congress Hall, Kyoto, Japan. Dr. Deio Aizawa, Professor of Insect Pathology, Institute of Biological Control at the Faculty of Agriculture, Kyushu University, Fukuoka 812, Japan, is serving as member of the Organizing Committee and chairman of the section of Pathology. The scientific program of this section includes symposia, workshops and contributed paper sessions. The section of Pathology covers Insect Pathology, Insect Microbiology, Microbial Control and Microbial Insecticides. Dr. Aizawa is very much looking forward to the possibility that many members of the Society of Invertebrate Pathology will attend. He also invites advice and suggestions concerning the symposia or workshops to be proposed for this meeting. To the regret of the organizers, the funds available to the Congress will not be big enough to cover the costs of participation of foreign visitors and possibility should be investigated of support from other sources. The SIP will look closer into this affair in due time in the way which was used in other such cases.

Jaroslav Weiser
President, SIP

REGIONAL NOTES

New Zealand

A Meeting to Discuss the Future of Insect Pathology in New Zealand

A meeting of applied entomologists, insect pathologists, and virologists from universities and government organizations was held at the Entomology Division of the Department of Scientific and Industrial Research, October 18-19, at Auckland, New Zealand. A total of 19 individuals attended the meeting including some who are members of S.I.P.

There was much enthusiasm at the meeting and there was unanimous feeling that insect pathology had come of age in New Zealand. Since this was the first meeting of the group the discussion centered around establishing guidelines for insect pathologists throughout the country.

A wide range of topics were discussed with particular emphasis on the strategies for research in the ecology of insect pathogens, and the safe utilization of insect pathogens. It was agreed that for the next 10 years important advances in applied insect pathology are likely to be made through careful studies of pathogen ecology leading to the definition of pest management systems which are optimum for the maximum influence of natural controlling factors.

A great deal of attention was focused on the safety aspects of manipulating entomopathogens. To minimize the possibility of undesirable side effects it was considered necessary to integrate information on host pathogen interaction with quantitative studies of overall factors regulating host population dynamics. Furthermore, it was considered that the major features governing particular host/pathogen associations should be well understood and verified, before manipulating pathogens within a pest management system.

The meeting ended on an optimistic note and there was general agreement that the group should meet annually though there are no plans at present to form a national body.

J. S. Pillai
University of Otago
Dunedin, New Zealand

Australia

Dr. Dudley Pinnock, formerly of the University of California, Berkeley, has taken a teaching position with the University of Adelaide, South Australia. He is establishing a course in Insect Pathology, and has commenced investigations into diseases of the honey bee in this region.

Dr. Richard Milner of the Pastoral Research Laboratory, C.S.I.R.O., Armidale, New South Wales returned recently from Europe where he discussed aphid disease research and attended the Prague meetings.

Dudley, Richard and Bob Teakle also shared information on aphid and other diseases at the Lucerne Aphid Workshop at Tamworth, half-way between Sydney and Brisbane in November. Significant lucerne aphid (*Acythosiphon kondoi* and *Therioaphis maculata*) control is being exerted by a complex of at least five *Entomophthora* species, none of which was known to occur in Australia prior to the discovery of these aphids in early 1977. Some dramatic epizootics have also been recorded. One, partly initiated by appropriate irrigation was associated with a 30% increase in yield.

An Insect Pathology sub-group affiliated with the Australian Entomological and/or Microbiological Societies was also discussed. This is designed to improve communication between the various workers in this field in Australia and New Zealand, who tend to be rather isolated, and to arrange periodic informal or semi formal meetings. Persons interested in joining such a group are requested to contact Dr. D. E. Pinnock, Department of Entomology, Waite Agricultural Research Institute, The University of Adelaide, Glen Osmond, S.A. 5064.

R. E. Teakle
Indooroopilly, Australia

Wageningen Colloquia, 1966 Proceedings

A number of copies of the International Colloquium on Insect Pathology and Microbial Control held in Wageningen, Netherlands, 1966, are still available. Anyone interested in obtaining a copy may do so by sending a money order for \$10 payable to

L.P.S. van der Geest
Laboratory of Experimental Entomology
Kruislaan 302, 1098 SM Amsterdam
The Netherlands

BIOLOGY FACULTY POSITIONS

One tenure-track position is available in the Biology Department of Virginia Commonwealth for a fresh-water biologist. The position will require the teaching of General Biology, Limnology, and Advanced Aquatic Biology. The candidate will also be expected to establish an active research program. Rank and salary are open. The minimum requirement for the position is the Ph.D. Applicants should send their curriculum vitae and the names of three references to Dr. Peter E. Giebel, Department of Biology, Virginia Commonwealth University, Richmond, Virginia 23284. Closing date for receipt of applications is 1 March 1979. An Equal Opportunity/Affirmative Action Employer.

Two tenure-track positions are available at the assistant professor level in the Biology Department of Virginia Commonwealth University. Both openings require the teaching of General Biology and a course in one or more of the following areas: Cell Biology, Animal Behavior with molecular orientation or Marine Biology. Candidates will also be expected to establish active research programs. The minimum requirement for both positions is the Ph.D. Applicants should send their curriculum vitae and the names of three references to Dr. Peter E. Giebel, Department of Biology, Virginia Commonwealth University, Richmond, Virginia 23284. Closing date for receipt of applications is 1 March 1979. An Equal Opportunity/Affirmative Action Employer.

Full-time, 11-month research (75%) and teaching (25%) position available in Insect Pathology at the assistant professor level, July 1, 1979. Expertise mandatory in one of the following areas: Bacteriology, comparative virology, mycology, or protozoology. Ph.D. and background in invertebrate pathology required and post-doctoral experience desirable.

Responsibilities will be in basic and applied research and teaching in insect pathology and pest management. Experience in pathogen-insect relationship, pathogenicity and manipulation of pathogens for insect control will be weighting factors in judging applicants.

Send full c.v. and official transcripts, copies of significant publications or manuscripts and names of three references by April 1, 1979 to:

Everett I. Schlinger, Acting Chairman
137 Giannini Hall
Department of Entomological Sciences
Division of Entomology & Parasitology
College of Natural Resources
University of California, Berkeley
Berkeley, California 94720

The University of California is an Equal Opportunity/Affirmative Action Employer.

American Society of Parasitologists, Minneapolis,
Minnesota, U.S.A. July 29 - August 3, 1979

Clayton R. Page, Department of Biology,
Tulane University, New Orleans, Louisiana,
70118, U.S.A.

Central American Congress of Microbiology and
Parasitology (5th) and National Congress of Micro-
biology and Parasitology (1st), Tegucigalpa, Honduras.
December 3-8, 1979

E.R. Poujol, Ap. Postal 31, Tegucigalpa, D.C.,
Honduras, C.A.

Society for Industrial Microbiology 30th Annual
Meeting, Carnegie Mellon Institute, Pittsburgh,
Pennsylvania, U.S.A. August 12-17, 1979

Ann Kulback, Society for Industrial
Microbiology, 1401 Wilson Boulevard,
Arlington, Virginia 22209, U.S.A.

SIP NEWSLETTER

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