

sip

newsletter

society for invertebrate pathology

*Volume XII, Number 1
February 1980*

XIIIth ANNUAL MEETING
SOCIETY FOR INVERTEBRATE PATHOLOGY
University of Washington, Seattle, Washington
July 27 - August 1, 1980

Seattle Meetings

I am looking forward to these meetings with great anticipation because I love mountains and the ocean, and as far as I can see from the pictures of Seattle, there will be an abundance of both. Ah, that salt air, and look at the salmon! My mouth waters at the sight of all that seafood but, Aaron Rosenfield informs me, make your reservations early because Seattle is a convention city, and apparently they will be booked to overflowing in the summer months. The current issue of the Newsletter conveys all the information needed, so fork over that deposit now and be assured of a place at the University Housing. I don't believe Howard Whisler has enough extra space to put us all up, even if he rented his front lawn for campsites and he won't accept bank cards, so let's register early. Another reason for having a good turn-out this year is that we will be changing the guard, and we will have a new slate of officers; and it is a good thing to know these people on a personal basis. In fact, I, as a biochemist, probably enjoy the SIP more because it is a small (but I like to think very select) society and I know a lot of the members. This in contrast to ASM or ACS with its 10,000 plus membership.

Aris Domnas
Editor

Earlier announcements in the Newsletter have indicated that the XIIIth Annual Meeting of the Society for Invertebrate Pathology will be held in Seattle, Washington. The dates have now been set by the Local Organizing Committee for July 27 - August 1, 1980. The meeting this year will include four Special Symposia, Workshops, Contributed Paper Sessions, and a Molluscan Pathology Conference. Other special events are also planned and will include mixers and a banquet.



SEATTLE INFORMATION

The city of Seattle is located in the northwest United States on Elliot Bay between Puget Sound (an inland intruding appendage of the Pacific Ocean) and Lake Washington. The more important industries of this city of over 500,000 population are: timber, agriculture, shipping, airplane manufacture, wood and food product manufacture. Mount Ranier, the Cascade Mountains, and Olympic National Park are within a two-hour drive, while the Pacific coast, Portland, Oregon, and Vancouver, British Columbia, are within a 3-4 hour drive. There are many opportunities for recreation in Seattle: boating, fishing, professional sports, water and land tours, visits to parks, zoos, aquaria, gardens, and arboretums. Cultural facili-

ties include: a symphony orchestra, opera association, theatres, playhouses, an art museum, and numerous other museums, cultural centers such as the Seattle Center, Chinatown International Center, and the Science Center. Several American Indian Reservations are located nearby. Educational facilities include: The University of Washington, Seattle University, Seattle Pacific University, and seven community colleges.

TRANSPORTATION

Seattle is serviced by the Seattle-Tacoma (Sea-Tac) International Airport (approximately 10-12 miles from downtown) with 12 scheduled airlines and 6 commuter airlines, three transcontinental railroads, Amtrack, buslines, and several ferries including those from Alaska and Canada. Limousine service (Hustle Bus) from the airport is available to downtown Seattle where taxi service or public transportation can then be utilized for short distance transport. Some hotels provide courtesy transportation services.

GENERAL INFORMATION

The University of Washington is located at 17th Avenue, NE and NE 45 Street (main entrance), on a 660-acre campus. It was established in 1861, and now has over 33,000 students. It has over 100 major buildings, a sports stadium complex, health science research center, and teaching hospital. It is located approximately 10-15 minutes driving time from downtown Seattle, and can be reached by taxi (expensive) or public transportation.

REGISTRATION

The summer months are the busiest for the City of Seattle, more particularly the last week of July. Housing is apt to be difficult to get and transportation to Seattle needs to be booked early. In this regard, inconvenience of meeting registration processing on arrival can be minimized if participants register in advance of the Annual Meeting by submitting the attached Registration Application and housing information request directly to:

Conferences and Institutes Registration
University of Washington, DW-23
Seattle, Washington 98195

Registration checks and money orders should be made out to the UNIVERSITY OF WASHINGTON.

Registration and all Symposia, Workshops, Contributed Paper and Poster Sessions, mixers and other related activities other than the banquet will be held at the South Campus Center located approximately 10 blocks south of the residence halls.

Registration Fees

- \$35.00 - Advance Registration received by mail on or before June 6, 1980.
- \$40.00 - Late registration received after June 14 by mail or at the meeting.
- \$15.00 - Graduate or undergraduate student registration received by mail or at the meeting.
- \$5.00 - Spouse 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 upon arrival on campus.

Refunds

The Society will refund advance registration fees (less 10% handling fee) for all cancellations received in writing or by telegram on or prior to Saturday, July 26, 1980. NO REFUNDS WILL BE GRANTED AFTER THIS DATE. Refunds will be mailed from the Society's campus office following the Annual Meeting.

HOUSING

On-campus housing in University residence halls is located within 20 minutes walking distance of the South Campus Center where most of the Society's activities and program sessions will take place.

A block of 100 single rooms for single occupancy and 20 rooms for double occupancy are being reserved in University dormitories and will be rented on a first come, first served basis. Rental rates are based on a minimum of 5 nights, July 27 - August 1 inclusive. Early arrivals or late departures must be arranged individually and will be charged accordingly.

Unfortunately, there is no space for cribs or cots in the rooms. However, young children can be accommodated in rooms adjacent to their parents. Each floor has community type bathroom facilities. Full linen service will be provided with the beds only initially. Sheets and towels will be exchanged once during the week. Coin-operated automatic washer and dryers are conveniently located, and a local service telephone is provided in each room.

FOOD SERVICES

A fine selection of carefully prepared items is offered cafeteria style for breakfast, lunch, and dinner each day. Choices of entrees, salads and desserts are designed to satisfy a variety of individual preferences.

RECREATION

A variety of recreational activities may be enjoyed. Use of campus facilities requires a fee and interested groups must make advance reservations.

OFF-CAMPUS HOUSING

Fifty rooms have been reserved for the entire 5 days of the conference at nearby hotels and motels within 20 minutes walking distance from the South Campus Center. For information on off-campus housing, check appropriate box on form enclosed. REMEMBER--HOUSING MAY BE AT A PREMIUM IN JULY, MAKE YOUR HOUSING RESERVATIONS AS SOON AS POSSIBLE AFTER RECEIVING INFORMATION.

PROVISIONAL PROGRAM

Sunday, July 27

10:00-12:00	Council Meeting Registration
12:00- 2:00	Luncheon for Council
2:00- 4:00	Council Meeting continued Registration
7:00- 9:00	Mixer

Monday, July 28

8:30- 6:00	Registration
8:30- 9:00	Welcome and Introductions
9:00-12:00	Steinhaus Memorial Symposium - The Story of <u>Bacillus</u> <u>thuringiensis</u>
12:00- 2:00	Luncheon
2:00- 5:00	Contributed Papers
5:00- 7:30	Dinner
7:30- 9:30	Working Group on Safety of Microbial Control Agents Workshop

Tuesday, July 29

8:30-11:00 Symposium - Evolution of
Invertebrate Viruses
11:00-12:00 Business Meeting
12:00- 2:00 Luncheon
2:00- 5:00 Contributed Papers
7:30-10:30 Banquet/Social

Wednesday, July 30

8:30-11:00 Symposium - Nutritional Diseases
of Cultured Invertebrates
11:00-12:00 Workshops
12:00- Free afternoon and evening - or
Workshops for the more ambitious

Thursday, July 31

8:30-11:00 Symposium - Beauvaria: All Aspects
11:00-12:00 Poster Session
12:00- 2:00 Luncheon
2:00- 5:00 Contributed Papers/Molluscan
Pathology Conference
Free evening or Workshops on
Molluscan Pathology

Friday, August 1

8:30-12:00 Molluscan Pathology Conference

CALL FOR PAPERS AND ABSTRACTS - DEADLINE, APRIL 15, 1980

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 types 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 session. A small amount of text should also be posted to illustrate the main points of the presentation. 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 to wander through the area and glance at several posters.

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.

IN MEMORIAM--ARTHUR M. HEIMPEL (1923-1979)

He gave of himself abundantly to invertebrate pathology. He suffered the glory and the pain of leadership in the accelerating development of insect pathology in North America from the middle of the twentieth century to his loss to this small and professionally diversified scientific community. Arthur Heimpel participated in the founding assembly for the Society for Invertebrate Pathology in 1967 at Seattle, Washington, USA; and served as the first Secretary-Treasurer 1967-68, a Trustee 1968-72, and was Vice-president and President 1972-74 and 1974-76, respectively. In 1961, at an early point in his professional career in Canada, he was called permanently to the United States to identify the purpose and to guide the fortunes of the insect pathology research enterprise in the United States Department of Agriculture.

My first encounter with him occurred in the spring of 1950 in The University of California where as a dishwasher in the Insect Pathology Laboratory I found an unusually large number of ceramic bacteriological filters to be cleaned. The tall, assertive Canadian Art Heimpel was responsible.



ARTHUR M. HEIMPEL in the first year of his Presidency, Tempe, Arizona, 1974.

With a spouse who is a talented artist, and the nucleus of a family of five sons, the Heimpels had appeared in Berkeley as true pioneers coming to the golden west. In 1949 and 1950 Art was on leave to the University as a Canadian research scholar. The automobile which survived the transcontinental trip and return to Sault Ste. Marie became notorious among friends and acquaintances as only less unpredictable than the conveyance of Art's mentor, Professor Edward A. Steinhaus. He completed the doctorate at Queens University, Kingston, Ontario, Canada in 1954.

The imaginative and innovative spirit of Art Heimpel as a bacteriologist provided a stimulating and productive force for members of the fermentation industry to commit resources to the development, production, and safe use of Bacillus thuringiensis.

Not bound to a laboratory, in Canada, Art and co-worker Dr. Thomas Angus planned and participated in the preliminary field trials which contributed to the information necessary for the formulation and governmental registration of B. thuringiensis products for several nations. His efforts as a bacteriologist were continued when he joined the USDA in 1961, and he was, during the last decade of his life, the only professionally trained bacteriologist whose energies were devoted exclusively to insect pathology in the United States.

The breadth of the challenge in the USDA, and hence in the United States as a region could have been discouraging and demoralizing to any person with a limited view of their own capacities. Art was aware of the need for expertise beyond his own in other areas of microbiology, particularly virology and protozoology. Consequently, he encouraged and influenced, and directly participated, for a period of two decades, in the development of an insect pathology establishment throughout the nation for fundamental and mission oriented research, and application. The organization in the United States is now without equal internationally for diversity of skills and productivity.

Privately, Arthur was a reader of enormous appetite and catholic tastes, and a creative sculptor. The personable public image was the serious counselor to the young individual scientists, and confidant to his contemporaries. This view of Arthur Heimpel was balanced by the joyous attractive person with an unending flow of anecdotes, limericks, songs (in an apparent French, and in English), and stories to put life into a humane perspective whether for the benefit of a care ridden bureaucrat, or a collection of individuals with whom he was enjoying an evening of libation.

Art Heimpel was a family man in the broadest sense of the word, and the mid-century invertebrate pathologists were in many ways a part of his family.

John D. Briggs

EDWARD A. STEINHAUS AND THE FOUNDING OF INVERTEBRATE PATHOLOGY

The old times come again to mind whenever I read a few pages of Ed Steinhaus's book, "Diseases in a Minor Chord," and I am once again amazed by this highly cultured presentation. Confronted with this detailed and intelligent interpretation of his predecessors or older contemporaries, who all had in one way or another an equal opportunity to establish Insect or Invertebrate Pathology as a specific discipline, I wondered why it was only Ed who did it. What was the stimulus that led Ed to become the founder and leader of this discipline and enabled him to guide its development during its most important first decades? It was also at this point in time that the new and efficient insecticides such as DDT, BHC, and a host of others dominated the field of plant protection and their effectiveness and ease of application rendered any attempt at biological control out of the question.

But even when biological control was considered, it was the simple introduction of entomophagous insects reared in mass culture and released for the control of specific quarantine insects. California was the only area where this kind of biological control was effective, and it may have been the understanding of this environment by Ed Steinhaus which gave to his work and effort a solid foundation.

Rather unexpectedly his "Insect Microbiology" published in 1946 was the signal which opened up new lines of research. It was this rich source of information and the completeness of the treatment of some 90 pages of references which presented at that time a realistic review of the entire field and became an everyday handbook for all students of the field.

This book made its appearance in the early days of peace in 1946, and was the first to appear in the empty book shelves of the dealers, before the flood of the long series of biochemistry and cell biology. The book was timely in its appearance for all the biologists in many lands who were enthusiasts of biological control and made field trips to study this phenomenon, and was eagerly perused by them in order to see references to their work. Since many had published during the war, they were very happy to communicate their findings to Ed and they were very pleased that these investigations could be organized into a scientific discipline. And Ed Steinhaus never missed an opportunity to keep in touch with people, and to extend moral and material support, reference citations, later copies of articles and at the same time he tried to impress upon the investigators the importance of references to earlier data and that these should be expressed by international codes of rules.

He brought people together with similar problems, he found co-authors who could properly evaluate any material. He never criticized any work without at the same time offering constructive advice. He had a positive outlook, always ready to help and encourage people and always gave full credit in references and literature citations to all investigators.

Anyone from anywhere could be assured that his information would be used in the most proper fashion. In those days a collection of literature references was not just a question of funds and computerized programs, but a search for rare journals and early volumes. Editing and taking out the rough spots was one of Ed Steinhaus's hobbies dating back to his student days when he edited American Life at his old university and when he was editor of Hilgardia and he expended a great deal of effort in improvements.

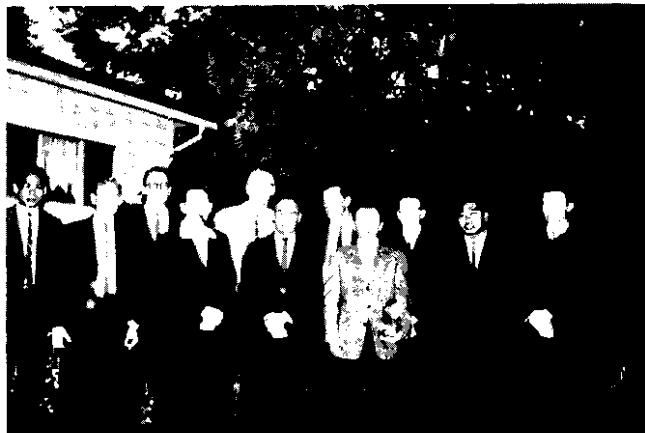
With increasing knowledge of the field he could concentrate on the field of insect pathology and on real pathogens and the new "Principles of Insect Pathology" published in 1949 brought an entirely new approach to the field, with a fresh emphasis to the value of pathogens in insect populations and some new aspects for practical use. But most authors cited therein became his friends and co-workers in many projects; he became as it were, a conductor of a large orchestra with many themes to develop. The Xth International Congress of Entomology in Montreal, in 1956 was the first meeting of insect pathologists as a separate section and the subsequent Prague meeting of insect pathologists in 1958 represented the first independent meeting of leading insect pathologists inside the broader area of biological control. Attendance was high with visitors from Poland, Russia, and China, and this fulfilled the representation of the organization of the whole of insect pathology.

Many changes were anticipated, not only qualitatively, but quantitatively as well: In Prague, Steinhaus announced that the industrial production of *Bac. thuringiensis* in California was to be started soon. Simultaneously with the direction of insect pathology into practical lines, Ed Steinhaus realized that a journal for the increasing number of papers would be necessary and the first volume of the Journal of Insect Pathology was published under his editorship in 1959. From then on, biological control was usually microbial control--this was evident also in subsequent quadriennial meetings of insect and invertebrate pathologists which were repeated following Prague in Paris, Wageningen, Washington and other places, all without attempts to maintain biological control with entomophagous insects as an integral component. The role of Ed Steinhaus as founder of insect pathology was recognized by the audience at the Paris meeting in 1962, and the subsequent volumes of the Journal as well as the size of "Insect Pathology," published in 1963, show clearly the rapid development of the field. At Wageningen in 1966, at which he could not be present, Ed proposed in a letter the formation of a Society of insect and invertebrate pathologists which completed his organizational effort. The list of insect pathologists of that time included a large group of people interested in similar projects and pathologists in other areas of invertebrates were also numerous and well organized. With the formation of the Society for Invertebrate Pathology, the foundation was laid for a new organization and it was ready for independent life and evolution. For 25 years Ed Steinhaus's judgment and encouragement was a most desired accolade which rewarded every invertebrate pathologist's work.

Now, we older hands look back on those revolutionary developments of invertebrate pathology, by that founder, Ed Steinhaus, and we cannot dissociate these developments from him and we feel proud that we were present and participated in those, for us, historic days.

Jaroslav Weiser

STEINHAUS MEMORIES



Steinhaus with graduate students majoring in Insect Pathology at University of California, Berkeley in 1962. (Left to right: S. Prasertphon, W.M. Brooks, D.W. Roberts, R. Sluss, E.A. Steinhaus, G.M. Thomas, L. van der Geest, M. Shapiro, L. Etzel, B.P. Gabriel, R.H. Goodwin).

ELECTIONS OF OFFICERS FOR THE SIP, 1980-1982

We are fortunate this year that our officers are up for election in an election year for the United States Government. Therefore it will be good practice for our members to get in their vote, and we have a good slate of officers nominated. I know many of them personally, and chugged a few beers with them, and one of the best things that I can say about this election is that they are not offering us a tax cut nor telling us how to solve inflation. They may propose a raise in our dues, but in this Society, the majority of the members has the final say. Following is the slate of nominees with their pictures and biographies. We will be receiving ballots from our recumbent, oops, pardon me John, incumbent secretary.

Aris Domnas, Editor

President
Phyllis Johnson

Vice President
Wayne Brooks
Bill Yendol

Secretary
Ann Cali
Ozzie Morris

Treasurer
Brian Federici
Jim Harper

Trustees (2)
Fred Bang
Terry Couch
P.F. Entwistle
Bernard Hurpin (unconfirmed)
Peter Luthy
Pat Vail

Biographies

President

Phyllis Johnson

A.B., Ph.D., (University of California at Berkeley)
Born: 1926

Experience: Invertebrate Pathologist, National Marine Fisheries Service, Oxford, Maryland, USA, 1972-present. Research Associate, California Institute of Technology, Corona del Mar, California, 1970-71. Associate Research Pathobiologist, University of California, Irvine, 1964-69. Medical Entomologist, Gorgas Memorial Laboratory, Panama, R. de Panama, 1959-63. Entomologist, U.S. Dept. of Agriculture, Washington, D.C., 1955-58. Parasitologist, Walter Reed Army Medical Center, Washington, D.C., 1950-55.

Membership: Society for Invertebrate Pathology; Glossary Committee, 1974-present; Editorial Board, JIP, 1970-73; Vice President, 1978; Am. Soc. Trop. Med. Hyg.; Am. Soc. Parasitol.; Ent. Soc. Wash.; AAAS; Wash. Acad. Sci. Committee on Animal Models and Genetic Stocks, ILAR, Natl. Res. Council, 1973-75. Consultant: U.S. Naval Medical Unit No. 3, Cairo, Egypt, 1957-present; Smithsonian Institution, Washington, D.C., 1971-72; U.S. Dept. of Agriculture, 1959-63.

Interests: Pathobiology of crustaceans, especially defense mechanisms and general studies on viral diseases. Comparative pathology of invertebrates.

Objectives: Promote interest in comparative pathology of invertebrates through society participation in and cosponsoring symposia or workshops with other societies to emphasize and enlarge recognition of the place of invertebrate pathology in such general fields as parasitology, tropical medicine, microbiology, virology, immunology, etc. Continue and expand support of JIP. Work toward an increased financial base that can be used for various SIP activities, including support of workshops and symposia presented at annual meetings or elsewhere, and for discharge of our public responsibilities.

Vice President

Wayne Brooks

B.S., Ph.D., 1966 (University of California at Berkeley)

Born: 1939

Experience: Asst., Assoc., and Professor, Department of Entomology, N.C. State University, North Carolina, USA, 1966-present.

Membership: SIP Division Committee; SIP Organizational Committee for Division on Microsporidia; Secretary, Division on Microsporidia, 1972-76; SIP Permanent Program Committee, Co-chairman 1974-76; Secretary, SIP, 1976-78; Archivist, SIP, 1978-present; Committee to revise SIP Constitution and Bylaws, 1980; Entomological Society of America; N.C. Entomological Society, President, 1971; International Organization for Biological Control.

Interests: Microsporidia and other protozoa infectious for insects, protozoa as microbial control agents, general insect pathology.

Objectives: Promotion of microbials for use in integrated pest management systems and to enhance the growth of the Society by promoting interest in Society activities among the membership.



William J. Yendol

Ph.D. (Purdue University)

Born: 1931

Experience: Professor, Department of Entomology, Pennsylvania State University, 15 years; Research Scientist, U.S. Forest Service; Agricultural Chemical Co. Representative; Organized and developed Biological Pest Management and Insect Pathology Research Groups; US/USSR Scientific Exchange Team; US/Peoples Republic of China Science and Technology Exchange Team.

Membership: Entomological Society of America; International Organization Biological Control; American Association for the Advancement of Science; AIBS-EPA Biological Task Force; National Gypsy Moth Pest Management Committee.

Interests: Development of Integrated Pest Management Programs; international coordination and exchange of microbials.

Secretary

Ann Cali



B.S. 1964 (University of Florida); M.S. 1966, Ph.D. 1970 (Ohio State University)

Born: 1943

Experience: Post-doctoral research work in the Veterinary Pathology Department of the Ohio State University College of Veterinary Medicine, 1970-71. Research Associate and Assistant Professor, Institute of Pathobiology, Lehigh University, U.S.A., 1972-74. Protozoologist in the Infectious Disease Branch, Armed Forces Institute of Pathology, full time, 1974-75, full time summers part time remainder of year, 1975-79. Assistant Professor, Department of Zoology and Physiology, Rutgers University, U.S.A., 1975-79; Associate Professor, Department of Zoology and Physiology, Rutgers University, U.S.A., 1979-present.

Membership: Society for Invertebrate Pathology; secretary Microsporidian division forming committee; secretary Microsporidian division; chairperson various committees in the division; symposia, session, and workshop chairperson at various S.I.P. meetings; Editorial Board, J.I.P. Society of Protozoology; session chairperson. American Society of Parasitology. Sigma Xi. Various Regional Electron Microscopy Societies, currently the New York Society of Electron Microscopists. WHO Advisory Committee on Bio-control of Vectors of Human Disease.

Interests: Microsporidian Protozoa, all aspects of their biology, primarily ultrastructure, development, and host-parasite relationships in a diversity of host systems including insects, snails and their trematodes, fish, and mammals including man. Bio-control potential of these protozoans in target systems and their safety as regards non-target systems.

Objectives: Promotion of Invertebrate Pathology as a discipline and greater emphasis on interaction between researchers working with pathology of infectious



diseases in any and all host systems with an ultimate goal of safe development of bio-control organisms.

Oswald N. Morris

Ph.D. (Rutgers University)

Experience: Research Scientist, Environment Canada; NRC--International Scientific Exchange with Czechoslovakia Academy of Science; Post Doctoral Research, Institut de Cytopathologie, INRA, France; Canadian Forest Service Task Force on Spruce Budworm Research; International Steering Committee on Safety of Insect Pathogens for non-target organisms, SIP; Organizing Committee, Division of Microbial Control, SIP.



Membership: American Association for the Advancement of Science; Canadian Entomological Society; Ontario Entomological Society; British Columbia Entomological Society.

Interests: General Insect Pathology and Microbial Control; Integrated Pest Management Program Development--particularly involving Bacillus thuringiensis against forest insects.



Treasurer

Brian Federici

B.S. 1966 (Rutgers University); M.S. 1967, Ph.D. 1970 (University of Florida)

Born: 1943

Experience: Division of Biological Control, Univ. of California, Riverside, 1974-78; Associate Professor, Division of Biological Control, Univ. of California, Riverside, 1978-present. Post-doctoral fellow at the Boyce Thompson Institute for Plant Research, Yonkers, N.Y., 1972-74.

Membership: American Society for Microbiology; American Association for the Advancement of Science; Entomological Society of America; Society for Invertebrate Pathology; American Mosquito Control Association; California Mosquito Control Association; Sigma Xi.

Interests: Biological and integrated control of disease vectors; development of Coelomomyces fungi as larvicides for California mosquitoes; evaluation of Coelomomyces fungi for anopheline control in Africa.

James D. Harper

Ph.D. 1969 (Oregon State University)

Born: 1942

Experience: Assistant Professor, Department of Zoology-Entomology, Auburn University 1969-1975; Associate Professor, Auburn University 1975-present; Member of Alabama Agricultural Experiment Station 1969-present.

Membership: Charter member of SIP, SIP Organizational Committee for Division on Microbial Control; Entomological Society of America; International Organization of Biological Control; Florida Entomological Society.

Interests: Microbial control of insect pests of cotton, soybeans, vegetables, and deciduous forests; microbial ecology and epizootiology.

Objectives: To promote the role of naturally occurring and artificially applied invertebrate pathogens in pest management strategies; to promote international exchange of pathogens for pest management purposes.

Trustees



Frederick B. Bang

M.D. (John Hopkins, Baltimore, Maryland, USA)

Born: 1916

Experience: Chairman, Department of Pathobiology, The John Hopkins University School of Hygiene and Public Health 1953-present; Department of Medicine, the John Hopkins School of Medicine 1945-present; Rockefeller Institute, Princeton, 1941-46; Department of Pathology, Vanderbilt University 1940-41; Summer Investigator, Marine Biological Laboratory, Woods Hole; Guggenheim Fellowship, Marine Invertebrate Pathology, Station Biologique, Roscoff, France.

Interests: Endotoxin and Limulus, virus disease in crabs, mucus secretion and immunity in Sipunculus, ciliate infection of crabs and Asterias, blood clotting in invertebrates.

Terry L. Couch

Ph.D. (Pennsylvania State University)

Born: 1944

Experience: National Science Foundation Trainee for both graduate degree programs. Joined Abbott Laboratories in 1970 as Research Entomologist with responsibility for all research on biological and chemical insecticides. Promoted to Group Leader, Entomology and appointed to Abbott Scientific Ladder as Associate Research Fellow in 1975. Current position is Section Head, Entomology. Responsibilities include all basic research on microbial insecticides, formulation research and quality control.

Membership: Society of Industrial Microbiology; Entomology Society of America; AIBS-EPA Task Force for Baculoviruses and Entomogenous Bacteria; US/ USSR working group on production of substances by microbiological means--sections on bacteria and fungi.

Interests: Industrial development of microbial insecticides which includes basic research on mode of action, fermentation development, environmental and biological stability, formulation and application.

Objectives: To promote international research on the practical and applied aspects of microbial insecticides and to encourage the development of these as viable alternatives to broad spectrum chemicals.

Philip F. Entwistle

Ph.D. 1952 (Imperial College, London)

Born: 1931

Experience: Colonial Research Student, Royal College of Science and Rothamsted Experimental Station, 1952-54. Colonial Research service cocoa entomologist Ghana, 1954-60 and Western Nigeria, 1960-64. Joined Unit of Invertebrate Virology 1964. Currently Head Epidemiology Group UIV.

Membership: Fellow of Royal Entomological Society, Association of Applied Biologists and S.I.P.

Interests: Wide interest in entomology including special concerns for insect pathology and pest control.

Objectives: To encourage the growth of knowledge of baculovirus epizootiology and the use of baculoviruses in pest control by fostering inter-related studies.



Peter P. Luthy

Ph.D. (Swiss Federal Institute of Technology, Zurich, Switzerland)

Born: 1938

Experience: Professor, Department of Microbiology, Swiss Federal Institute of Technology; Research Scientist, Insect Pathology Research Institute; Graduate Research on *Bacillus popilliae*.

Interests: Mode of action, production of mutants, toxin analysis, and mechanisms of sporulation of *Bacillus thuringiensis*.

Patrick V. Vail

Ph.D. (University of California--Riverside)

Experience: Research Entomologist, USDA, Fresno, California, present; Investigations Leader, USDA Southwestern Vegetable and Sugarbeet Laboratory, Meas, Arizona; Research Leader, Entomology, Western Cotton Research Laboratory, Phoenix, Arizona; Head of Entomology Section, International Atomic Energy Agency, Vienna, Austria.

Membership: Co-chairman 1974 Annual SIP meetings, Phoenix, Arizona; Entomological Society of America.

Interests: Entomogenous viruses and microbial control.

Additional Nominations

The membership is reminded that the SIP By-laws provide for additional nominations. Each person nominated must be in good standing in SIP and the initiative must be signed by 10 members in good standing. The nominations must be received by me, as secretary, on or before March 15, 1980.

J.E. Henry, Secretary
USDA/SEA/AR
Rangeland Insect Laboratory
Montana State University
Bozeman, Montana 59717

NEWS NOTES

Prague Proceedings Available

The Proceedings of the 1978 Scientific Program for the Combined Eleventh Annual Meeting of the Society for Invertebrate Pathology, and International Colloquium on Invertebrate Pathology were sent in mid 1979 to all registered participants.

Additional copies of the "Progress in Invertebrate Pathology" were on sale in the Gainesville SIP meetings. Copies can be ordered for \$7.00, postage included:

J.V. Maddox,
Treasurer, SIP
Economic Entomology
Illinois Natural History Survey
Urbana, Illinois 61801

SIP Back Issue Available

Clean and complete set of SIP Journals from Vol. 6, No. 1, March 1964 through November 1979. Contact:

James V. Bell
Bioenvironmental Insect Control Laboratory
Delta States Research Center
P.O. Box 225
Stoneville, Mississippi 38776

Australia-New Zealand

"Microbial Control of Invertebrate Pests" constitutes one of the major sessions at the Combined Annual Scientific Meetings of the Australian and New Zealand Societies for Microbiology. These meetings will be held at the University of Otago, Dunedin, New Zealand, from 20th to 23rd May 1980.

Speakers will be:

Dr. R. Milner (the current status)
Dr. I.P. Griffith (the ecological approach)
Dr. D. Pinnock (the pesticide approach)
Dr. A.W. Sweeney (the microbial control of vectors)

A round table discussion on the same topic is also being organized by Dr. Griffith.

This is the first time that Applied Invertebrate Pathology has achieved such a major status at one of these meetings, and reflects the vigor with which this new discipline is being pursued in this region.

R.E. Teakle

U.S.A.

Under the umbrella agreement between the governments of the United States of America and The People's Republic of China, a U.S. biological control delegation consisted of H.C. Chaing, Leader; J.R. Coulsen, Deputy Leader; R.J. Cook; K.S. Hagen; G.E. King; W. Klassen; and W.G. Yendol. This delegation consisted of federal and university specialists in the various areas of biological control of insects and phytopathogens. Efforts of the delegation were directed toward learning the state of the art of biological control and insect pathology and the related technology and progress, establishing contacts with Chinese scientists, to exchange scientific information and develop a preliminary system for exchanging biological material and lastly to develop cooperative research programs in biological control and insect pathology that would benefit both countries.

The delegation left the United States July 1979 for the PRC and returned to the United States August 1979. The invitation was extended through the Ministry of Agriculture of PRC. The hosts at different locations included institutions under (1) Academy of Agricultural Sciences, (2) the Academia Sinica, (3) the universities, (4) various institutes at the national and provincial levels, and (5) plant protection stations at county and commune levels. These locations were included in the provinces of Kijin, Hopeh, Shantung, Kiangsu, and Kwangtung. A number of insect viruses were obtained during this visit.

A team of 6 PRC scientists in the biological control field has currently visited the USA for the same purpose.

William Yendol

Canada

Dr. W.A. Smirnoff of the Laurentian Forest Research Centre, Canada has available for distribution to children a do-it-yourself B.t. brochure for the control of Hyphantria cunea. The brochure was prepared specially for the Childrens International Year. The copy I received was in French, but there may be English editions available as well. For a copy, send request

to: Laurentian Forest Research Centre
P.O. Box 3800
Quebec, Quebec Canada G1V 4C7

SI People

Hughes Retires

Entomologist Ken Hughes, who joined PNW's Corvallis lab in 1964 as a high-level technician and advanced to scientist status in 1969, retired October 5. His specialty was virus research and electron microscopy, and a great deal of his work was with the Douglas-fir tussock moth.

Hughes earned a B.A. in biology at Willamette University and did graduate work in zoology at Oregon State University. At the University of California, where he did graduate work in entomology and also worked as a specialist in insect pathology, he was the first employee of Edward Steinhaus, the scientist who pioneered the study of insect pathology. Hughes was also a pioneer. In 1948 he became one of the first users of the only electron microscope on the west coast at that time.

New Secretary for WHO Scientific Working Group

Dr. A.M. Dubitskii has assumed administrative responsibilities in the Geneva, Switzerland Headquarters of the World Health Organization. He replaces Dr. A.A. Arata who resigned the post of Secretary for the SWG and its Steering Committee which serves the Biological Control of Vectors activities in the Special Programme. Dr. Dubitskii was formerly associated with the Institute of Zoology, Alma-Ata, USSR. Dr. Arata now directs a PAHO Center for Vector Biology and Control, Apartado Aero 2171, Las Delicias, Maracay, Venezuela.

Note from Michel Remillet located in Cayenne, French Guyana, whom the Editor had the pleasure of meeting at the Gainesville meetings. Michel has presented a paper at the XVI Caribbean Food Crops Society, meetings at Santo Domingo, Dominican Republic on "Parasitic nematodes of insects: a perspective of studies in the neotropical region."

Sprague Retires

Dr. Victor Sprague, one of the foremost authorities on the microsporidia, retired December 1, 1978 as a Professor at the University of Maryland's Chesapeake Biological Laboratory in Solomons, Maryland. Sprague was born in Fayette County, Illinois and grew up in Carbondale where he received his Bachelor of Education degree in Zoology in 1932 from Southern Illinois Teachers' College (now Southern Illinois University at Carbondale). He received his M.S. in Zoology from the University of Illinois (Urbana) in 1938 and his Ph.D. in Zoology from the same University in 1940. His Ph.D. research dealt with protozoan parasitism of cockroaches.

Sprague came to the Chesapeake Biological Laboratory in 1960 after a varied experience in teaching, research, clinical work, and business. His primary research interests at the Chesapeake Laboratory have been diseases of oysters, fish, crabs, and shrimp. He has published over 80 papers dealing chiefly with Protozoan and microsporidian parasites of these animals. One of his most recent and probably his most significant contribution to the study of microsporidia was his Systematics of the Microsporidia (Comparative Pathobiology Vol. 2, 1977, Plenum Press 510 p.).

POSITIONS AVAILABLE

Desire a Research Associate to initiate investigation of the epizootiology of the entomogenous fungi Entomophthora grylli and methods of establishing epizootics of the fungus in field populations of grasshoppers. The appointment will be for one year with a possibility of an extension. Send curriculum vitae, publications, dissertation summary and names and address of five references to: Dr. R.D. Frye, Department of Entomology, North Dakota State University, Fargo, North Dakota, 58105. Please send by February 1, 1980. North Dakota State University is an Equal Opportunity Employer.

Texas Tech University has a position available for a Graduate Research Assistantship leading to M.S. in entomology beginning June 1980. Laboratory research on the pathology of fire-ants. An interest in cell culture desirable. Send inquiry and curriculum vitae (including transcript and GRE) to Dr. S.L. Bilimoria, Department of Biological Sciences, Texas Tech University, Lubbock, Texas 79409.

Postdoctoral Research Associate. Research on Lagenidium fungus for mosquito control. Laboratory studies on improving fungus production. Extensive field studies on efficacy. Knowledge of fungal culture methods, mosquito biology and aquatic biology desirable. Position available immediately. Send resume, transcripts, and three letters of recommendation before April 15 to: Dr. R.C. Axtell, Department of Entomology, North Carolina State University, Raleigh, North Carolina 27650 (Tel. 919/737-2832).

Research Entomologist, GS-414-12 or 13, Mosquito Biology and Control Research, Gainesville, Florida. \$24,703 (GS-12) or \$29,375 (GS-13) per year. USDA agency: Science and Education Administration. Duties: The incumbent plans, directs, conducts, reviews, and evaluates research on a wide range of studies concerning insect pathology to determine the effectiveness and potential usefulness of insect diseases; develops effective, safe, and economical biological control agents; isolates, identifies, and characterizes viruses, protozoa, fungi, and bacteria that produce diseases in insects; evaluates laboratory and field requirements for optimum use of potential pathogens; determines the cycle of development of the

disease organisms and studies the infective processes in the host or alternate hosts; develops promising pathogens for field use; conducts field tests with laboratory-proven pathogens to assess their effect on natural vector populations and to determine their potential usefulness in pest management programs; develops new and creative approaches to electron microscope methodology and interprets the results; prepares manuscripts and reports for presentation at scientific meetings and for publication; plans and directs the activities of an electron microscope specialist and a technician. Send applications to: Office of Personnel Management, Washington Area Office, Special Examining Unit, 6505 Belcrest Road, Hyattsville, Maryland 20782.

POSITION WANTED

Young doctorate (Pasteur Institute, University of Paris VI) with research experience in fungal physiology and biological control specializing in Entomophthora spp. spore germination. American citizen, English and French language fluency. Available September 1980. Documentation upon request. Contact David Perry, Service de Lutte Biologique, Institut Pasteur, 25 rue Dr. Roux, Paris 115e France.

POSITION WANTED

Position sought, preferably part-time for a nominal salary by a mandatorily-retired professor, University of Maryland. Research specialty in parasitic protozoa, particularly microsporidia, and now at peak of career productivity. Contact Prof. V. Sprague, Chesapeake Biological Laboratory, Box 38, Solomons, Maryland 20688.

WORKSHOP

Workshop on Insect Pest Management with Microbial Agents: Recent Achievements, Deficiencies, and Innovations" will be held at Boyce Thompson Institute for Plant Research at Cornell University on May 12-15, 1980. For further information contact:

Donald W. Roberts
IPRC Coordinator
Boyce Thompson Institute
Tower Road
Cornell University
Ithaca, New York 14853 U.S.A.

NEW BOOK

A comprehensive review of current knowledge about the Douglas-fir tussock moth, organized to be useful to people who deal with insects and their impacts on forest resources has been published by the U.S. Department of Agriculture.

The 330-page book is a major product of the 4-year USDA Douglas-fir Tussock Moth Research and Development Program, which was established in 1974 following the last serious outbreak of the insect in eastern Oregon and Washington in 1971-73. The purpose of the program was to pull together results of several years of previous research on the insect and to accelerate and coordinate additional research by scientists in the USDA Forest Service and other Federal and State agencies, universities, and private organizations. Publication of the book was planned from the inception of the program to synthesize all knowledge about the insect in a form useful to forest managers. A glossary makes it usable by a wide audience interested in forest management. Copies are being distributed to university libraries and departments of entomology and forestry, experiment stations, research scientists, and forest practitioners.

Copies of "The Douglas-fir Tussock Moth: A Synthesis" (USDA Tech. Bull. 1585), edited by Martha H. Brookes, R.W. Stark, and Robert W. Campbell, are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 001-000-03924-5), for \$16.75

MEETING ANNOUNCEMENTS

3e Salon International et Congrès de la Technique pour la Protection de l'Environnement, Düsseldorf, Federal Republic of Germany. February 11-15, 1980

Düsseldorfer Messegesellschaft mbH-NOWEA, Postfach 32-2-3, D-4000 Düsseldorf 30, FRG

Symposium: Taxonomy, Computer Identification of Bacteria & Diagnostic Methods, Liblice Castle, Nr. Prague, Czechoslovakia. May 5-8, 1980

Czechoslovak Soc. for Microbiology, Vinicna 5, 128.44 Prague 2, Czechoslovakia

8th International Congress of Arachnology, Vienna, Austria. July 7-12, 1980 (subsidized and/or sponsored by IUBS)

Prof. H. Nemenz, Univ. für Bodenkultur, Gregor-Mendeistr. 33, 1180 Wien, Austria

Vth International Symposium on Yeasts and Vith International Fermentation Symposium, London, Ont., Canada. July 20-26, 1980 (subsidized and/or sponsored by IUBS)

G.G. Stewart, Labatt Breweries of Canada Ltd., 150 Simcoe St., London, Ontario, Canada N6A 4M3

4th International Congress of Immunology, Paris, France. July 21-26, 1980.

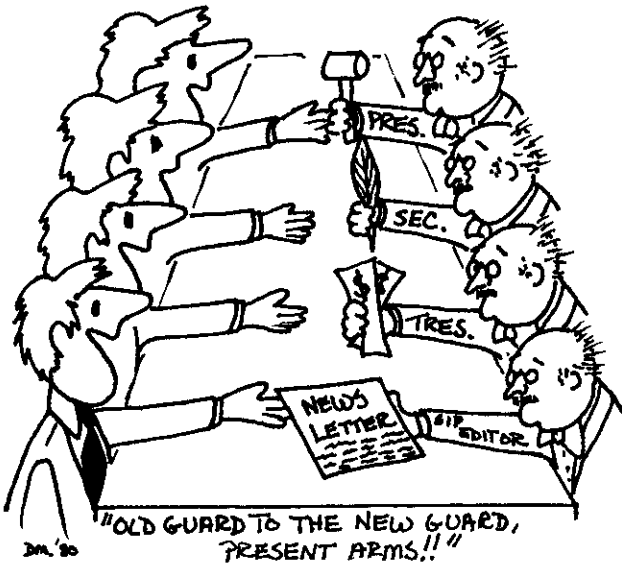
Dr. J. Dausset, Inst. de Recherche, Maladies du Sang, Hôpital St. Louis, 2 place Docteur Fournier, 75010 Paris, France

5th International Symposium on Biological Control of Weeds, Brisbane, Australia. July 22-29, 1980

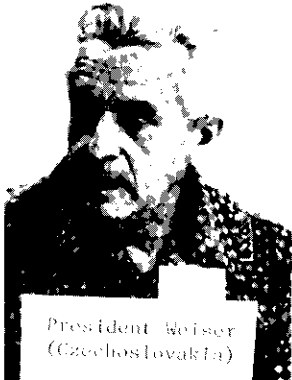
Dr. K.L.S. Harley, CSIRO, Division of Entomology, Private Bag No. 3, Indooroopilly, Queensland, 4068, Australia

XIII Annual Meeting, Society for Invertebrate Pathology, Seattle, Washington, U.S.A. July 27-August 1, 1980

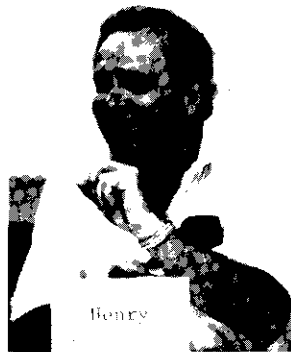
Albert K. Sparks, National Marine Fisheries Service, Northwest Fisheries Ctr., 2727 Mont Lake Blvd., East Seattle, Washington 98112, U.S.A.



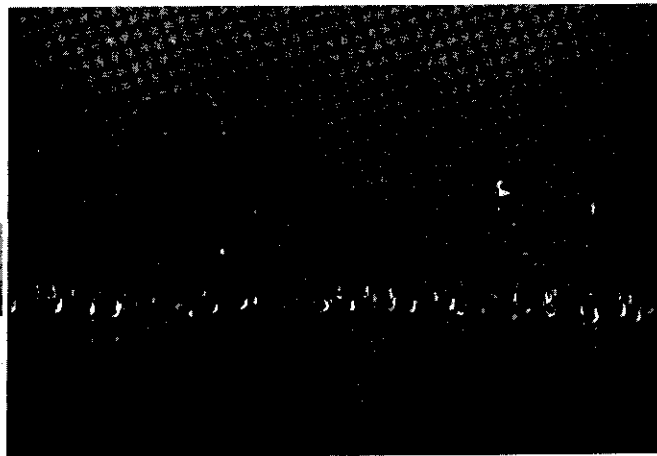
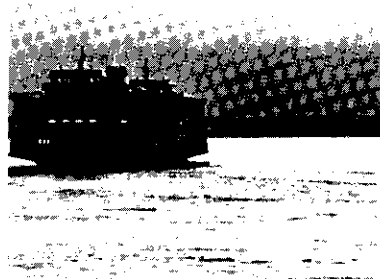
President-elect Johnson



President Weiser
(Czechoslovakia)



Henry



Rosenfield

SIP Newsletter

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