

VIITH ANNUAL MEETING SOCIETY FOR INVERTEBRATE PATHOLOGY

16-21 June 1974
Tempe, Arizona



INFORMAL ACTIVITIES

SIP BANQUET

The SIP Banquet has been arranged for Tuesday evening, June 18, 1974 at the Safari Inn in Scottsdale, Arizona. The Safari is reputed to serve the best banquet food in the area. Air conditioned buses will leave the traffic circle in front of the Memorial Union promptly at 5:30 P.M. in order to arrive at the Safari Inn in time for the cocktail hour prior to the banquet.

MIXER

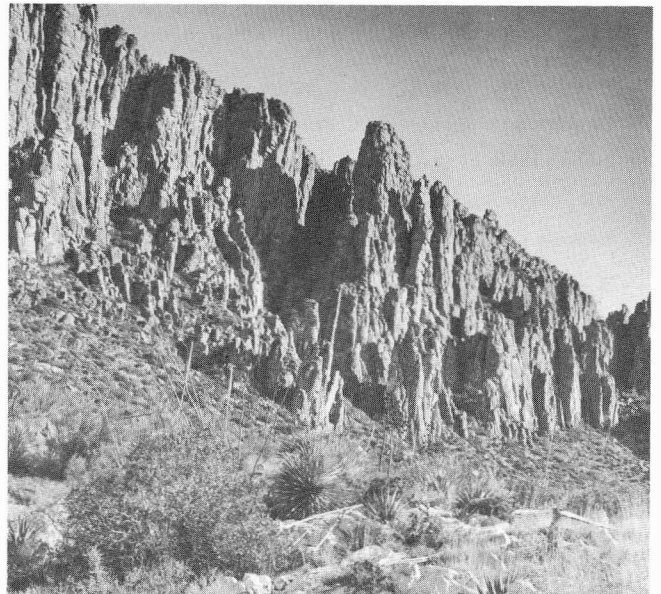
A no-host mixer is also planned for Wednesday evening from 5:30 to 7:00 P.M. at the Holiday Inn which is about three blocks from the center of the Arizona State University campus.

DESERT BOTANICAL GARDENS

Shuttlebus service will be provided by AIBS to the Desert Botanical Gardens in Popago Park. The Desert Botanical Gardens display desert plants from around the world, including over 1000 species of cacti and 400 species of century plants, on 150 lovely acres. Admission is free, with donations optional. The hours are from 9:00 A.M. to 5:00 P.M., but for photography and birdwatching you may enter at daybreak if you call the Gardens in advance. Bring your camera!

PHOENIX ZOO

The Phoenix Zoo is also in Popago Park and has desert and veldt animals roaming outdoors in a natural setting. At the Zoo are over half the world's population of rare Arabian Oryx, Hazel, the gorilla, an orangutang family, many exotic birds, and tiger, lion, and cougar cubs. Special features include Desert Bighorn sheep roaming on their own mountain and an Arizona exhibit displaying native birds, mammals, reptiles, and invertebrates. The petting zoo and trained animals are favorites with children. Hours are 9:00 to 5:00 (or sundown if you arrive before 5:00). Admission is: adults; \$1.50; children, ages 15-18, \$0.75; and children, ages 4-14, \$0.25.



ADDITIONAL ACTIVITIES

Dr. Patrick Vail has invited you and your family to be his guests for a swim or a game of tennis at the Tempe Racquet and Swim Club. Please contact Dr. Vail when you arrive for information.

Phoenix and Tempe have many small and large public parks, and outstanding among them is South Mountain Park, the world's largest city desert park, 11 miles long and 3 miles wide. South Mountain Park encompasses the entire mountain range to the south of the city, and preserves a section of the Lower Sonoran Desert in its natural state. Travel in the park, except for one road, is restricted to foot and horseback (horses may be rented in the park). If you have a car, drive to Dobbins Lookout in late evening (driving the winding mountain road is itself a thrill!), and watch the sun set. The view is breathtaking. If you are a hiker, the best way to experience the desert is on foot. I would be pleased to have some of you join me for an early-morning desert tramp in South Mountain Park,

Continued on page 8

COLUMBUS

MONTPELLIER

BURLINGTON

COLLEGE PARK

1974

MINNEAPOLIS

OXFORD

PROGRAM

VIIITH ANNUAL MEETING

SUNDAY AFTERNOON, JUNE 16

3:00 EXECUTIVE COUNCIL MEETING. Society for Invertebrate Pathology.
JOHN D. BRIGGS, presiding.

MONDAY MORNING, JUNE 17

SESSION 1. Plenary Session. P. V. VAIL, A. L. SMITH, and ELIZABETH
DAVIDSON, Hosts.

9:05 Presidential Remarks: JOHN D. BRIGGS.

9:15 Presidential Address: A. M. HEIMPEL.

9:45 Invited Speaker: WALDEMAR KLASSEN, National Program Staff, ARS,
USDA, Beltsville, Md. Insect pathology in the Soviet Union.

10:45 Business Meeting: JOHN D. BRIGGS, presiding.

MONDAY AFTERNOON, JUNE 17

Concurrent Sessions 2, 3, 4

SESSION 2. Invertebrate Tissue Culture and In Vitro Pathogen Production.

JAMES VAUGHN and R. GOODWIN, presiding.

1:30 Invited Paper: HINK, W. F. The Ohio State University,
Columbus. Propagation of insect viruses in tissue culture.

2:00 Invited Paper: GOODWIN, R. H. Agriculture Research Center,
USDA, Beltsville, Md. Aberrant virus forms after serial passage
in insect tissue culture.

2:30 Invited Paper: SOHI, S. S. Insect Pathology Research
Institute, Sault Ste. Marie, On. Propagation of Nosema and other
protozoan pathogens of insects in tissue culture.

3:00 RECESS.

3:20 YEN, D. F. National Taiwan University, Taipei. In vivo
production and application of the nuclear polyhedrosis virus.

3:40 CECIL, J. T., G. D. RUGGIERI, and R. F. NIGRELLI. New
York Zoological Society, New York Aquarium and Osborn Laboratories
of Marine Sciences, Brooklyn. Cell cultures from the sea urchin
Arbacia punctulata (Lamarck).

4:00 HINK, W. F. and W. A. RAMOSKA. The Ohio State University,
Columbus. Plaque variants of alfalfa looper nuclear polyhedrosis
virus.

4:20 WEBB, W. R. and J. D. PASCHKE. Purdue University, West
Lafayette, Ind. The pathology of mosquito iridescent virus in
mosquito cell cultures.

4:40 BARRY, C. and J. L. FOWLER. Brazilian-American Biomedical
Program, Salvador, Bahia, Brazil. Development of a mosquito
cytoplasmic polyhedrosis virus in an established insect cell line.

5:00 BAYNE, C. J., W. E. NOONAN, and A. OWCZARZAK. Oregon State
University, Corvallis. Intracellular symbionts in tissue cultures
of Biomphalaria glabrata, a freshwater snail.

SESSION 3. Biological Information Retrieval. M. E. MARTIGNONI,
presiding.

1:30 Invited Paper: BURTON, HILARY D. Data Systems Applications
Division, USDA, Beltsville, Md. The current awareness literature
service of the Agricultural Research Service: Current status
and implications for other organizations.

2:00 Invited Paper: ANDERSON, MARILYN J. National Research
Council, Washington, DC. Animal models and genetic stocks
program: In quest of invertebrates.

SESSION 4. Workshop on Fungal Pathogens of Invertebrates. D. W. ROBERTS,
presiding.

1:30 Workshop begins.

TUESDAY MORNING, JUNE 18

Concurrent Sessions 5, 6, 7, 8

SESSION 5. Discussion Group: Biochemistry of Parasitism. A. J. DOMNAS
and P. E. GIEBEL, presiding.

9:00 Discussion begins.

SESSION 6. Comparative and Invertebrate Pathology. Submitted Papers.
MARTHA GILLIAM, presiding.

8:40 DUBOIS, N. and H. B. GUNNER. University of Massachusetts,
Amherst. Production of chitinase by crystalliferous bacilli.

9:00 ST. JULIAN, G. and L. A. BULLA, JR. Northern Regional
Research Laboratory, USDA, Peoria, Il. Metabolism of Bacillus
popilliae during growth, sporulation, and parasporal crystal
formulation in Popillia japonica larvae.

9:20 WEINER, B. A., L. A. BULLA, JR., and R. A. RHODES. Northern
Regional Research Laboratory, USDA, Peoria, Il. Preliminary
chemical characterization of the parasporal crystal of Bacillus
popilliae grown in Popillia japonica larvae.

Continued on page 3

- 9:40 KAWANISHI, C. Y., C. M. SPLITTSTOESSER, and H. TASHIRO.
Cornell University, Geneva, NY. Defensive reaction of larval
European chafer cells to invasion by Bacillus popilliae.
- 10:00 SPLITTSTOESSER, C. M., C. Y. KAWANISHI, and H. TASHIRO.
Cornell University, Geneva, NY. Germination of Bacillus popilliae.
- 10:20 RECESS.
- 10:40 BELL, J. V. Bioenvironmental Insect Control Laboratory,
USDA, Stoneville, Ms. Interactions between Heliothis zea, a
parasite, and bacterial pathogen in laboratory populations.
- 11:00 MURPHY, D. W., P. G. FAST, and S. S. SOHI. Insect Pathology
Research Institute, Sault Ste. Marie, On. Action of delta-
endotoxin on insect cells cultivated in vitro.
- 11:20 FAST, P. G., D. MURPHY, and R. MILNE. Insect Pathology
Research Institute, Sault Ste. Marie, On. Bacillus thuringiensis
delta-endotoxin: On dissolution of the crystal.
- 11:40 DULMAGE, H. T. and E. MARTINEZ. Cotton Insect Research
Laboratory, Brownsville, Tx. Preliminary report on some
interactions between the tobacco budworm, Heliothis virescens,
and the δ -endotoxin produced by Bacillus thuringiensis, isolate
HD-1.

- SESSION 7. Symposium: The Specificity and Development of Insect
Viruses for Pest Control. L. A. FALCON, presiding.
- 8:00 Introduction, L. A. FALCON.
- 8:10 A review of recent major events in the development of insect
viruses for pest control.
- 8:30 Current and possible future roles of insect viruses in pest
control programs, introduction.
- 8:40 Field crops, vegetable crops, and tree crops.
- 9:00 Forest and urban.
- 9:40 Human and veterinary medicine, and stored products.
- 10:00 DISCUSSION.
- 10:10 SUMMARY.
- 10:20 RECESS.
- 10:30 Industrialization of insect viruses, introduction.
- 10:40 Current and future demands for insect viruses in developed and
developing countries.
- 11:00 Legal aspects which influence industrialization: state, federal,
international.
- 11:20 Patent laws.
- 11:40 Responsibility for producing and developing insect viruses:
individual user, commercial, public.
- 12:10 DISCUSSION.
- 12:20 SUMMARY of the session.

SESSION 8. Microsporida Workshop. EDWIN I. HAZARD, presiding.

- 9:00 Workshop begins.

- SESSION 9. Symposium: The Specificity and Development of Insect
Viruses for Pest Control (continued). L. A. FALCON, presiding.
- 2:00 Factors which influence the effectiveness and use of insect
viruses for pest control, introduction.
- 2:10 Safety aspects: present evidence of safety, guidelines, and
future considerations.
- 2:40 Criteria for assessing efficacy: target and non-target organisms
and productivity.
- 3:10 Environmental factors: physical factors, biotic factors, host
habitant and behavior.
- 3:40 Economic factors: cost-benefit considerations; competition from
other control procedures.
- 4:10 Strategies and patterns of use: selection, production, formulation,
quality control, and application methods.
- 4:40 DISCUSSION.
- 5:10 SUMMARY of the Session and Closing Remarks
- SESSION 10. Microsporida Workshop (continued). VICTOR SPRAGUE, presiding.
- 1:30 Workshop continues.
- SESSION 11. Comparative and Invertebrate Pathology. Submitted Papers
(continued). C. Y. KAWANISHI, presiding.
- 1:30 SINGER, S., Western Illinois University, Macomb, and
ELIZABETH W. DAVIDSON, Arizona State University, Tempe. Con-
siderations for the use of Bacillus sphaericus strain SSII-1 as
a bio-obtainable, bio-degradable "chemical" insecticide.
- 1:50 TUTT, S. F. University of Wyoming, Laramie. Penicillium
waksmani Zaleski helps honey bees fight American foulbrood.
- 2:10 COSGROVE, M. D. Oak Ridge National Laboratory, Union
Carbide Corporation, Oak Ridge, Tenn. Whole body irradiation
of millipedes.
- 2:30 FARVEZ, Z. University of California, Berkeley. Sero-
taxonomy of Achromobacter nematophilus (Eubacteriales) associated
with various strains of Neoaplectana spp. (Nematoda).
- 2:50 RECESS.
- 3:10 KHAN, A. and W. M. BROOKS. North Carolina State University,
Raleigh. A neoaplectanid-like nematode of Heliothis zea and its
associated bacterium.
- 3:30 BELL, M. R. and R. KANAVAL. Western Cotton Research
Laboratory, USDA, Phoenix, Az. Feeding response of neonate
pink bollworms to extracts and components of cotton.
- 3:50 ZIMMACK, H. L. Ball State University, Muncie, Ind. How
efficiently do we screen for insect pathogens?
- 4:10 GINGRICH, R. E. and C. C. BARRETT. Livestock Insects
Investigations, USDA, Kerrville, Tx. Acquired host resistance
to the myiasis-producing larvae of a rodent bot fly.

Program
Continued from page 3

- 4:30 REICHELDERFER, C. F. University of Maryland, College Park.
Some immunological aspects of polyhedral protein.
- 4:50 SORENSEN, ANN. University of California, Berkeley.
Preliminary studies on coverage and efficacy of insect pathogens following field application.

WEDNESDAY MORNING, JUNE 19

Concurrent Sessions 12, 13, 14

SESSION 12. Virus Characterization Workshop. M. D. SUMMERS and T. W. TINSLEY, presiding.

- 9:00 Occluded Viruses.
- 9:30 Insect Pox Viruses.
- 10:00 Non-occluded Viruses: Insects and other invertebrates.
- 10:30 RECESS.
- 11:00 OVERVIEW AND OPEN DISCUSSION.

SESSION 13. Current Research on Microsporida. JOHN HENRY, presiding.

- 9:00 Invited Paper: WILSON, GARY. Insect Pathology Research Institute, Sault Ste. Marie, On. Studies on N. fumiferanae, a microsporidian parasite of the spruce budworm Choristoneura fumiferana.
- 9:30 Invited Paper: KELLEN, W. R. Stored-Products Insects Research Branch, USDA, Fresno, Ca. Protozoa in granivorous insects.
- 10:00 GAUGLER, R. R. and W. M. BROOKS. North Carolina State University, Raleigh. Sublethal effects of infection by Nosema heliothisis in the corn earworm, Heliothis zea.
- 10:20 RECESS.
- 10:40 HARLAN, D. P. Bioenvironmental Insect Control Research Laboratory, USDA, Stoneville, Ms. A microsporidian of Tabanus subsimilis (Diptera: Tabanidae) from Mississippi.
- 11:00 STRETT, D. A. St. Mary's City, Md. A new species of Nosema (Microsporida: Nosematidae) in the white pine weevil Pissodes strobi (Peck).
- 11:20 FOWLER, J. L. South Gate, Ca. Microsporida from some Brazilian mosquitoes.

SESSION 14. Invertebrate Immunology: Cellular Immunity and Phagocytosis. EDWIN L. COOPER, presiding.

- 8:40 Invited Paper: COOPER, E. L. University of California, Los Angeles. Cellular immunity and recognition in invertebrates.
- 9:10 STEWART, J. E., M. M. ZWICKER, and B. ARIE. Fisheries and Marine Service, Halifax Laboratory, NS. Induction of resistance in the lobster, Homarus americanus.
- 9:30 PRICE, C. D. and N. A. RATCLIFFE. University College, Swansea, Glamorgan, Wales, UK. A reappraisal of insect hemocyte classification by the examination of a large range of insects.

- 9:50 RATCLIFFE, N. A. and C. D. PRICE. University College, Swansea, Glamorgan, Wales, UK. Problems in integrating light and electron microscopical observations of insect hemocytes.
- 10:10 RECESS.
- 10:30 ROWLEY, A. and N. A. RATCLIFFE. University College, Swansea, Glamorgan, Wales, UK. Studies on in vitro phagocytosis in insects.
- 10:50 FARRENS, BERNICE, G. SIMMONS, and M. WHIPPLE. University of San Diego, San Diego, Ca. Immune responses in Tenebrio molitor with special reference to the induced parasite Tetrahymena pyriformis.
- 11:10 PATERSON, W. D. and J. W. STEWART. Fisheries and Marine Service, Halifax Laboratory, NS. Phagocytosis as a cellular immune response mechanism in the American lobster (Homarus americanus).
- 11:30 ROUSE, A., K. SMITH, and M. R. TRIPP. University of Delaware, Newark. Humoral and cellular responses of blue crab (Callinectes sapidus) to a bacterial vaccine.

WEDNESDAY AFTERNOON, JUNE 19

Concurrent Sessions 15, 16, 17

SESSION 15. Invertebrate Immunology (continued): Cellular Immunity and Phagocytosis. EDWIN L. COOPER, presiding.

- 1:30 UNESTAM, T. Uppsala Universitets Institution for Fysiologisk Botanik, Uppsala, Sweden. On cuticular resistance to fungal invasion in crayfish.
- 1:50 ANDERSON, R. S. Sloan-Kettering Institute for Cancer Research, Rye, NY. Phagocytosis of foreign particles by Otala lactea hemocytes.
- 2:10 COWDEN, R. R. and S. K. CURTIS. The Albany Medical College of Union University, Albany, NY. Coelomocytes' participation in wound repair in a marine polychaete.
- 2:30 BAYNE, C. J. Oregon State University, Corvallis. A novel response of Helix tissues on encountering colloidal carbon.

SESSION 16. Vector Workshop. DON ROBERTS, presiding.

1:30 Workshop begins.

SESSION 17. Working Group on Safety of Microbial Control Agents. MARSHALL LAIRD, presiding.

1:30 Discussion begins.



Continued on page 5

WEDNESDAY EVENING, JUNE 19

SESSION 18. Discussion Group on Pathobiology Education. ALBERT SMITH,
presiding.

8:00 Discussion begins.

THURSDAY MORNING, JUNE 20

Concurrent Sessions 19, 20, 21, 22

SESSION 19. Invertebrate Immunology (continued): Humoral Immunology.
HARRIETTE SCHAPIRO, presiding.

9:00 Invited Paper: SCHAPIRO, HARRIETTE C. California State
University, San Diego. Humoral immunity in invertebrates.

9:30 BOMAN, H. D., INGRID NILSSON, K. PAUL, and T. RASMUSON.
University of Umeå, Umeå, Sweden. An inducible cellfree anti-
bacterial reaction in haemolymph of Samia cynthia pupae.

9:50 BAKULA, MARION. St. Louis University, St. Louis, Mo.
Antibacterial activity in Drosophila melanogaster.

10:10 RECESS.

10:30 ORLOB, G. D. and ALICE CHEUNG. University of Toronto,
Toronto, On. Immunity of a non-host caterpillar to a nuclear
polyhedrosis virus.

10:50 SCHAPIRO, HARRIETTE C. California State University,
San Diego. Protection of the American lobster, Homarus
americanus, against gaffkemia.

SESSION 20. Spontaneous Disease in Invertebrates. PHYLLIS
JOHNSON, presiding.

9:00 MIX, M. Oregon State University, Corvallis. The
"neoplastic" disease of Yaquina Bay (Oregon) bivalve
mollusks: Current status, theoretical considerations and
a look back.

9:20 RICHARDS, C. S. National Institutes of Health, HEW,
Bethesda, Md. Abnormal pseudobranch growths of Biomphalaria
glabrata.

9:40 JOHNSON, P. T. Biological Laboratory, USDC, Oxford,
Md. Abnormal blue crabs from Delaware Bay.

10:00 FEIGENBAUM, D. University of Miami, Miami, Fl.
Parasites of the commercial shrimp, Penaeus vannamei Boone
and Penaeus brasiliensis Latreille.

10:20 RECESS.

10:40 NARASIMHAMURTI, C. C. Andhra University, Waltair,
India. The morphology, life-cycle, and histopathology of
an eimeriid coccidian, Aggregata kudoj n. sp. from Sepia.

11:00 RICHARDS, C. S. National Institutes of Health, HEW,
Bethesda, Md. Bacterial infection of a planorbid snail.

11:20 COUCH, J. A. Gulf Breeze Environmental Research
Laboratory, Gulf Breeze, FL. An enzootic nuclear polyhedrosis
virus disease of shrimp and its possible chemical enhancement.

11:40 CUNNINGHAM, P. A. and TRIPP, M. R. University of Delaware,
Newark. Localization of mercury in tissue and cells of the
oyster, Crassostrea virginica.

SESSION 21. Information Retrieval Workshop. M. E. MARTIGNONI,
presiding.

9:00 Workshop begins.

SESSION 22. Comparative and Invertebrate Pathology. Submitted
papers (continued). F. D. STEWART, presiding.

9:00 IGNOFFO, C. M., D. L. HOSTETTER, and M. SHAPIRO.
Biological Control of Insects Research Laboratory, USDA,
Columbia, Mo. Efficacy of insect viruses propagated
in vitro.

9:20 MAZZONE, H. M., G. TIGNOR, and R. E. SHOPE. Forest
Insect and Disease Laboratory, USDA, Hamden, Conn. Studies
to determine whether a serological relationship exists between
arboviruses and nucleo-polyhedrosis viruses of the gypsy
moth (Porthetria dispar, L.) and the European pine sawfly
(Neodiprion sertifer, Geoffrey).

9:40 SMIRNOFF, W. A. Laurentian Forest Research Centre,
Ste. Foy, Quebec. Test of the specificity of viruses from
the most serious forest pests in Canada.

10:00 BIEVER, K. D. Biological Control of Insects Research
Laboratory, USDA, Columbia, Mo. The use of dehydrated diets
and low temperature to stress the appearance of subacute
granulosis infection in Pieris rapae.

10:20 RECESS.

10:40 HARRAP, K. A., and J. S. ROBERTSON. Commonwealth Forestry
Institute, Oxford, England. Antigens and polypeptides of
some baculoviruses isolated from the Noctuidae.

11:00 GRANADOS, R. R. Boyce Thompson Institute for Plant
Research, Yonkers, NY. Comparative studies on the structure
and assembly of invertebrate and vertebrate poxviruses.

11:20 RINDERER, T. E. and W. C. ROTHENBUHLER. Ohio State
University, Columbus. Mortality responses of resistant,
susceptible and commercial lines of the honey bee to a non-
occluded virus.

11:40 WAGNER, G. W. and J. D. PASCHKE. Purdue University,
West Lafayette, Ind. Characterization of the "cores" of
mosquito iridescent virus.

THURSDAY AFTERNOON, JUNE 20

Concurrent Sessions 23, 24

SESSION 23. Comparative and Invertebrate Pathology. Submitted
papers (continued). CLAYTON MCCOY, presiding.

1:30 GILLIAM, MARTHA, L. J. WICKERHAM, H. L. MORTON, and
R. D. MARTIN. Bee Research Laboratory, USDA, Tucson, Ariz.
Yeast isolated from honey bees, Apis mellifera, treated
with 2,4-D and antibiotics.



- 1:50 MCCOY, C. W. and J. C. ALLEN. University of Florida, Lake Alfred. Influence of the fungal pathogen, Hirsutiella thompsonii in controlling the citrus rust mite in integrated systems.
- 2:10 SPRENKEL, R. K., J. VAN DUYN, and W. M. BROOKS. North Carolina State University, Raleigh. The effects of certain cultural practices on incidence of Spicaria rileyi as a pathogen of lepidopterous pests of soybeans.
- 2:30 RECESS.
- 2:50 GIEBEL, P. E. and A. J. DOMNAS. University of North Carolina, Chapel Hill. Trehalase/trehalose metabolism in Culex pipiens quinquefasciatus infected with Lagenidium giganteum.
- 3:10 AGUDELO, F. University of California, Berkeley. Infectivity of the entomogenous fungus Paecilomyces farinosus to noctuid larvae.
- 3:30 FEDERICI, B. A. and D. W. ROBERTS. Boyce Thompson Institute for Plant Research, Yonkers, NY. Evidence that the zoospore may not be the infective unit for fungi of the genus Coelomomyces.
- 3:50 GRONER, A. and E. MÜLLER-KÖGLER. Institut für Biologische Schädlingsbekämpfung, Darmstadt, Germany. Production of resting spores of Entomophthoraceae.
- 4:10 SCHABEL, H. G. University of Wisconsin, Stevens Point. Scanning electron microscopy of Metarrhizium anisopliae on Hylobius pales.
- SESSION 24. Comparative and Invertebrate Pathology. Submitted papers (continued). C. F. REICHELDERFER, presiding.
- 1:30 MARSCHALL, K. J. UN/SPC Rhinoceros Beetle Project, Apia, Western Samoa. Investigations on the use of Rhabdionvirus oryctes as an autocidal means to control rhinoceros beetles, Oryctes rhinoceros.
- 1:50 ZELAZNY, B. UN/SPC Rhinoceros Beetle Project, Apia, Western Samoa. Transmission of Rhabdionvirus oryctes in populations of the Indian rhinoceros beetle (Oryctes rhinoceros).
- 2:10 PAYNE, C. C. (To be presented by J. S. ROBERTSON). Commonwealth Forestry Institute, Oxford, England. Characterization of a virus from Oryctes rhinoceros.
- 2:30 REED, D. K. and P. R. DESJARDINS. Boyden Entomology Laboratory, USDA, Riverside, Ca. Virus-like particles associated with healthy and diseased citrus red mites.

- 2:50 RECESS.
- 3:10 STEWART, F. D., P. V. VAIL, and A. J. MARTINEZ. Western Cotton Research Laboratory, USDA, Phoenix, Ariz. Electron microscopic study of the nuclear polyhedrosis virus of the alfalfa looper Autographa californica, in a cabbage looper, Trichoplusia ni cell line (TN-368).
- 3:30 BELL, C. D. and G. B. ORLOB. University of Toronto, Toronto, On. Serological studies on the components of a nuclear polyhedrosis virus of the cabbage looper, Trichoplusia ni.
- 3:50 HAMM, J. J. Southern Grain Insects Research Laboratory, USDA, Tifton, Ga. Comparative pathogeneticity of a nuclear polyhedrosis virus of Heliothis armigera for Heliothis zea and Spodoptera frugiperda.
- 4:10 NORTON, P. W. and R. A. DICAPUA. University of Connecticut, Storrs. Serological cross-reactivity between nuclear polyhedrosis viruses infecting the gypsy moth, Porthetria dispar, and the European pine sawfly, Neodiprion sertifer. I. Hemagglutination by polyhedral inclusion body protein from P. dispar.
- 4:30 DICAPUA, R. A. and P. W. NORTON. University of Connecticut, Storrs. Serological cross-reactivity between nuclear polyhedrosis viruses infecting the gypsy moth, Porthetria dispar, and the European pine sawfly, Neodiprion sertifer. II. Detection of interspecies cross-reacting viral antigens by immunodiffusion.
- 4:50 GARD, I. University of California, Berkeley. Natural insect populations as disseminators of nuclear polyhedrosis viruses.



ADVISORY GROUP MEETS

An Expert Advisory Group on the Role of Pathogens, Parasites and Predators in Tsetse Control met at the Memorial University of Newfoundland, St. John's, Newfoundland, 25-29 March 1974.

The Advisory Group met to consider the status of our knowledge of the diseases and natural enemies of tsetse flies; to discuss ways in which existing information is being augmented through the activities of national institutions and international bodies. A report was prepared for the International Development Research Centre, Ottawa, on relevant research needs and priorities with particular respect to the range of candidate biological control agents, the feasibility of their mass production, and the various steps towards their field trial against tsetse and their eventual incorporation in practical integrated control programmes.

Participants included individuals from eleven countries and representatives from the World Health Organization, the U.S. Environmental Agency, and the Commonwealth Institute of Biological Control. Dr. A. M. Jordan (England) was elected Chairman, Dr. S. M. Toure (Senegal) was elected Vice Chairman, and Dr. Reto Engler (USA) was elected Rapporteur. Dr. M. Laird served as Scientific Secretary for the Advisory Group.

REPORT, ANNUAL AIBS GOVERNING BOARD MEETING

WASHINGTON, D.C.; 6-8 MARCH, 1974

Among the many items discussed during the three-day meeting were the following:

1. Change in composition of the Governing Board

In an effort to strengthen the Governing Board and to improve communication with the Adherent Societies the following amendment to the constitution was passed:

Article IV. Section 3.

To promote effective and responsible Governing Board leadership from the biological societies, each Adherent Society shall be represented on the Board by one Society member who shall be the Society's President-Elect or President, at the discretion of the Society, when beginning service on the Board and who shall serve a single three-year term. A Society which cannot follow this provision or finds it inappropriate may ask the Executive Committee of the Institute to approve seating another elected Society officer or member of the Society's governing body.

The rationale was that the President (or other executive member) of a society can speak with more authority than current members can and thus the business of AIBS can be handled more expediently and authoritatively. This new membership will be phased in over the next year.

2. Public Responsibilities Office

The 1974-75 budget provides \$40,000 for hiring an Associate Director for Public Responsibilities and Secretary. This action was urged at the 1973 meeting and the 1974 meeting of the Public Responsibilities study section set about writing a job description for this person. Tentatively the duties will be:

- a. To make AIBS and its capabilities known to the federal agencies, legislature and others on the Washington scene.
- b. To help educate legislators about the biological implications of impending legislation by directing them to appropriate expert witnesses, etc.
- c. To facilitate discussion of important national topics by expert biologists so that they can develop in-depth arguments on these issues. If there is consensus in the biological community, on a particular issue, this will be made known to key legislators.
- d. To facilitate communication between AIBS and adherent societies.

The thorny problem of the source of authority for the Public Responsibilities officer and to whom he answers, was not resolved fully. It was suggested a small (4-person) permanent Public Responsibilities committee be appointed by and chaired by the President of AIBS and that suggestion is under advisement.

It is likely that AIBS will have a functional "man-on-the-Hill" very soon and hopefully the voice of Biology will be heard in legislative and bureaucratic halls.

3. NSF Funding for 1974-75

Eloise Clark, Director, Division of Biological and Medical Sciences, NSF, spoke about the funding picture for 1974-75. The basic funding problem encountered by biologists for the last few years will be the same, but there will be one important difference. Office of Management and Budget has recommended an additional \$15-16 million for "energy related" research. NSF interprets that broadly and it seems likely that a good deal of basic biological research will be funded on this basis.

M. R. Tripp
SIP Representative to the
AIBS Governing Board



NEW ZEALAND JOURNAL OF ZOOLOGY

A new quarterly journal will be published by the Information Service of the New Zealand Department of Scientific and Industrial Research in February 1974. The New Zealand Journal of Zoology will be edited by J. G. Gregory, assisted by C. T. Duval.

The Journal will cover original research in all branches of zoology, including animal ecology and animal behavior and will contain zoological papers that would previously have appeared in the New Zealand Journal of Science. More specifically, it will contain papers dealing with ecology, physiology, systematics, faunal relationships, morphology, histology, cytology, animal and insect pathology, entomology, nematology, protozoology, soil biology, biological control, laboratory pesticide studies, animal and insect biochemistry, diet studies.

Papers pertinent to New Zealand and associated territories may be submitted to: The Editor, N.Z. Journal of Zoology, Information Service, DSIR, Private Bag, Wellington, New Zealand.

Subscriptions (NZ\$6 per year) should be sent to: Publications Officer, Information Service, DSIR, Private Bag, Wellington, New Zealand.



ANNOUNCEMENT

Dr. A. M. Heimpel has several copies available of the Proceedings of the IV International Colloquium on Insect Pathology, 25-28 August 1970. Copies may be obtained at a cost of \$10.00 by writing to Dr. Heimpel at: Insect Pathology Research Laboratory, Plant Industry Station, USDA, Beltsville, Maryland 20705 USA.

REPORT OF THE AUDIT COMMITTEE

Financial Statements of the Treasurer for the calendar year 1973 were examined by an Audit Committee and were found to be in order. The Audit Committee, Dr. Leonard Goldberg and Dr. Louis A. Falcon, reported to the Council in February 1974.

SUSTAINING MEMBERS

We are pleased to welcome as sustaining industrial members of the Society for Invertebrate Pathology:

*Nutrilite Products Inc.
Sandoz-Wander Inc.*

INFORMAL ACTIVITIES

Continued from page 1

leaving campus at 5:00 A.M. and returning in time for breakfast. It will be cool then, and we can observe desert plants and wild animals before the heat of the day. Please write me if you are interested and we will arrange a morning for the hike.

There are many other exciting things for you and your family to enjoy in the Phoenix area. Be sure to check at the AIBS family entertainment booth in the Memorial Union when you arrive for other suggestions. Babysitting service will be available through this booth.

CURRENCY

May I suggest that our guests from outside the U.S. arrive with a small amount of U.S. funds in cash or U.S. traveler's checks. The Valley National Bank, located three blocks from campus, will exchange foreign currency, but local businesses will not. If you arrive on Sunday you may experience some difficulties in paying for food and lodging with non-U.S. currency or traveler's checks.

USDA WESTERN COTTON RESEARCH LABORATORY

Following the SIP sessions there will be a tour of the U.S. Department of Agriculture Western Cotton Research Laboratory (Friday, June 20, 1974). This laboratory is engaged in major research on the biological control of cotton pests. This tour will not be announced in the AIBS literature. If you wish to visit the Cotton Lab, Please send the form below to Dr. Elizabeth W. Davidson.

Please return this form before June 1, 1974 to:
Dr. Elizabeth W. Davidson, Local Arrangements
Division of Agriculture
Arizona State University
Tempe, Arizona 85281

I am interested in touring the USDA Western Cotton Research Laboratory on Friday, June 20, 8:30 A.M. until 12:00 noon.

Name: _____

Address: _____

*Elizabeth W. Davidson
Local Representative*

JOHN R. OLIVE
1916-1974

On Saturday morning, March 30, Dr. John R. Olive, Director of the American Institute of Biological Sciences, died in Arizona. Dr. Olive was visiting the Arizona State University in preparation for the forthcoming annual AIBS meeting.

Dr. Olive joined the AIBS staff in 1959 as Deputy Executive Director. On May 3, 1963, Dr. Olive was appointed the Executive Director by unanimous vote of the Governing Board. His title was later changed to Director, the position he held until his death.

Dr. Olive was born in Richmond, Ohio, in 1916. He obtained his bachelor of science and master of science degrees at Ohio State University, and his doctorate in zoology from the same institution in 1949. From 1946 until 1948 he was an instructor at Ohio State University. In 1949 Dr. Olive began a long association with the Colorado State University reaching the rank of professor. In 1959, he became an Assistant Director for Biology at the Colorado State University Research Foundation. On June 2, 1972, Dr. Olive received an honorary doctor of science degree at the spring commencement of Colorado State University. A very special honor, this was one of the few honorary doctor of science degrees conferred by this university.

From 1949 through 1959, Dr. Olive's research activities included: potential productivity and energy budgets of high mountain lakes; the use of artificial fertilizers to increase productivity of mountain lakes; studies of structure and populations of plankton in high altitude lakes; vertical migration of plankton populations in mountain lakes.

For the many years he was associated with the AIBS, Dr. Olive was a good friend and provided enthusiastic support for all of us interested in invertebrate pathology. His encouragement to the individuals interested in the development of new scientific societies played an important role in the success with which the founders of the Society for Invertebrate Pathology served the international community by their action in 1967. The AIBS has provided an organizational structure for the development and operation of many scientific groups whose activities contribute to invertebrate pathology: protozoology, parasitology, phytopathology, and ecology. Dr. Olive's personal research interest in aquatic ecology and his presence on the Washington scene confirmed his personal observation that the point in history was at hand when a Society for Invertebrate Pathology could contribute significantly to biology generally.

Management of a multidisciplinary organization to speak for biology in Washington, D.C. was at best a difficult and thankless task. In recent years his leadership has been evident in the stability and growing visibility of AIBS as the voice for biology. The elected officers in AIBS have each assumed responsibility for the scientific posture of AIBS, however the fine hand of John Olive is evident in the responsible and active role of AIBS in an advisory capacity in the nation's capitol, in each state, and in the United States Committee for the International Union of Biological Sciences.

SIP NEWSLETTER EDITOR

*Beatrice A. Weaver
c/o Department of Entomology
The Ohio State University
1735 Neil Avenue
Columbus, Ohio 43210*