



it has been approximately USA \$0.75 = Australian \$1.00 (or USA \$1.00 = Australian \$1.33).

The fees for the Colloquium — at Australian \$395 for regular members and \$250 for students (approximately USA \$300 and \$190, respectively) — is slightly higher than Dudley expected. It would have been about Aus \$60 less had an expected government grant been awarded — the grant fell victim to a recent government policy change toward convention support.

Considerable reduction in the normal charges of the Adelaide Convention Centre for use of their facilities were obtained through negotiation. The primary feature was our agreeing to take most of our meals at the Centre (SIP prefers to take meals at the meeting place, in any case, since this increases the opportunities for scientific and social interaction).

The fees include considerably more than a name tag. The major features are two dinners, four lunches, opening reception, morning and afternoon tea, a banquet (not at Convention Centre), some local transportation, and the published Proceedings of the Colloquium. Dudley estimates the food alone is valued at Aus \$150.

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### SIP NEWSLETTER

The SIP Newsletter is produced four times a year by the Society for Invertebrate Pathology. Annual dues (U.S. funds) for the Society are: regular members, \$15.00; and students, \$6.00. Members receive SIP Newsletter and a copy of the abstracts of all SIP Annual General Meetings free, whether or not they attend. Application forms for membership in the Society may be obtained from the Treasurer, Mr. Fredrick G. Kern, Cooperative Oxford Biological Laboratory, 18 South Morris Street, Oxford, Maryland 21654, U.S.A.

#### COUNCIL OFFICERS of THE SOCIETY ARE:

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Send News items and other contributions to:

*David Tyrrell, Editor*

SIP Newsletter

Forestry Canada/Forest Pest Management Institute

P.O. Box 490 Sault Ste. Marie, Ontario P6A 5M7

CANADA DEADLINE NEXT ISSUE: May 15, 1990.

Housing at the Colloquium can be very reasonable. One of the hotels adjacent to the Convention Centre is Aus \$54 for a single room, and a double or twin room is Aus \$68 (only \$34 per person which equals approximately USA \$26). These are full prices — there are no additional hotel taxes. Some members of the Organizing Committee stayed overnight there and Dudley advises me they found it “fully acceptable.” Other reasonable hotels are also available within walking distance (10–20 minutes) of the Centre. If you wish to spend more for housing, you will note that option is available too.

The deadline for abstracts for contributed papers and posters is April 13, 1990. This is the time they should arrive in Adelaide, so they should be mailed somewhat earlier. The template for preparing these abstracts was in the last Newsletter.

All in all, the Colloquium is coming together very well. The conveners of symposia (listed under “Scientific Programme” in the last Newsletter) have been invited, and these people now have arranged for their speakers. (A further listing of the symposia and other details follows these comments).

Turning to the enthusiasm of our members for this meeting that I mentioned earlier, I join you in this eager anticipation of an outstanding meeting. Your participation is needed, however, to bring the Colloquium to its full level of high promise. I hope to see you in Adelaide!

*Donald W. Roberts*  
President

P.S. Please send your fees and hotel reservations as soon as practicable. Preregistration for the recent (1989) College Park SIP meeting was only about one-half of that of final registration. This situation is very difficult (and discouraging) for the organizers because it makes estimating needs for the meeting nearly impossible. Also, please remember that early commitment usually affords the lowest prices and best schedules for airline travel.

### Vth INTERNATIONAL COLLOQUIUM ON INVERTEBRATE PATHOLOGY AND MICROBIAL CONTROL

The Vth International Colloquium on Invertebrate Pathology and Microbial Control will take place at the Adelaide Convention centre in Adelaide — the capital city of South Australia, from the 20th to the 24th of August, 1990.

The Convention Centre forms part of the Adelaide Plaza complex comprising of the Convention Centre, Exhibition Centre, the Festival Centre, the Casino and the Hyatt Regency Hotel. The Convention Centre is located beside the river Torrens and is close to both the business and shopping centres of the city. Also within easy walking distance are the University of Adelaide, South Australian Museum, Art Gallery, Parliament House, the Zoo and Botanical Gardens.

The city of Adelaide is surrounded by parklands which provide many recreational facilities including golf, tennis, running and walking tracks. The parklands and city of Adelaide also provide the venue each year for the Australian Formula One Grand Prix. Every other year

Adelaide hosts the Festival of Arts which accounts for South Australia being called the 'Festival State' of Australia.

South Australia is renowned as Australia's premiere wine State with over 100 wineries within an hours' drive of the city. The Barossa is the most famous of South Australia's wine districts. The region, settled in 1842, was established as a wine producing area when immigrants, largely of German descent, brought their wine-making skills with them. Their heritage is evident in the vineyards, wineries, Lutheran churches and bakeries which are common to this area.

The mid-Conference tour is to the Yalumba winery in the heart of the Barossa Valley. The tour will include wine tasting and lunch at the winery, and a demonstration of cooperage and viticultural practices.

For the adventurous (and weather permitting) we can offer a limited number of dawn flights by hot air balloon in the Barossa Valley, followed by a champagne breakfast. After the champagne breakfast, delegates would travel to the Yalumba winery to continue the winery tour with the other, earthbound, delegates. The hot air balloon flight and breakfast would cost an additional Aust\$225.00 per person and can be booked by sending a deposit of Aust\$75.00 directly to the Organising Committee. The deposit will be refunded if weather or other conditions prevent the operation of the balloon flight. The balloon flight is an add-on to the official Colloquium programme, and payments should not be sent to Elliservice.

#### **A word about the Registration Fee**

The Committee is very much aware of the concern of some SIP members over the Colloquium Registration Fee of Aust\$395.00. But please bear in mind that this fee includes the Reception, the Banquet, two Dinners, four Lunches and morning and all afternoon teas/coffees – together these would cost about Aust\$150.00, so that the nett Registration Fee would be only about Aust.\$245.00=approx. US\$184.00 for which delegates receive use of the Convention Centre auditorium and A/V facilities and meeting rooms, plus the Programme, Proceedings etc. We've kept the Convention Centre hire fee low by taking some of our meals there, which is why these have to be included in the Registration Fee.

#### **Late submission of posters**

The Organizing Committee recognizes that some members who may have wished to submit a paper did not do so because approval for their travel arrangements was not forthcoming by the April 13 deadline. They have therefore agreed to accept a limited number of late POSTER presentations. Since these will not appear in the official programme, presenters should also bring 50 copies of their abstract for distribution to interested persons. This extra space will be available at the discretion of the Committee, and the Committee reserves the right to allocate this space should the number of posters exceed the space available. If you intend to submit a poster under this arrangement, please inform the Organizing Committee as soon as possible.

#### **General Information**

There are a few points of information and reminders you should know:

1. Delegates from outside Australia will need a valid passport and visa, where applicable.
2. The Australian Department of Health requires proof of vaccination against certain diseases if visitors come from certain countries – please check to make sure your health documents are in order.

3. If you intend to hire a car, you must bring your driving licence – and remember to **DRIVE ON THE LEFT!**

4. There is no added-on sales tax or VAT in Australia – what you see on the price tag is what you pay.

5. There is **NO TIPPING** in Australia – minimum wage legislation exists in Australia – please do not tip your taxi driver or waiter/waitress etc.

6. Winter in Adelaide will be cool with showers, the Outback warm during the day with cool nights. So, please bring a woollen sweater and perhaps a light raincoat for Adelaide, and a wide-brimmed hat, sun screen and sensible footwear for the Outback.

7. On arrival at the Airport, look for the ICIP logo and information boards which will be in the arrival areas of the International, Australian Airlines, and Ansett Airlines terminals. We anticipate that we will be able to meet the most popular flights: in any event, a taxi to the city centre would cost only Aust.\$10.00 approximately.

### **ORGANIZED SYMPOSIA AND INVITED SPEAKERS FOR THE VTH INTERNATIONAL COLLOQUIUM ON INVERTEBRATE PATHOLOGY AND MICROBIAL CONTROL**

*(updated 4.4.1990)*

#### **Aquaculture**

Organizer: L. Owens

Speakers: I. Anderson; S.N. Chen; E. Miahle

#### **Bacterial Symbionts of Entomopathogenic Nematodes**

Organizer: R. Ackhurst

Speakers: N. Boemare; M. Brehelin; J. Ensign

Bacterial toxins – Mode of Action

Organizer: P. Marrone

Speakers: A. Aronson; B. Knowles; M. Wolfesberger

#### **Bacterial Control of Insect Vectors**

Organizer: E.W. Davidson

Speakers: B. Gallagher; S. Pantuwatana; M. Rifel

#### **Baculoviruses**

Organizer: J. Cunningham

Speakers: P. Entwistle; R.R. Granados; F. Moscardi

#### **Bee Diseases**

Organizer: D. Anderson

Speakers: Not available at present

#### **Biology of Microsporidia**

Organizer: R. Larsson

Speakers: E. Armstrong; T.J. Kurtti; A.H. Undeen

#### **Cell Culture**

Organizer: L. Owens

Speaker: S.N. Chen

#### **Codling Moth Granulosis Virus**

Organizer: J. Huber

Speakers: N. Crook & Winstanley;

L. Falcon; Fritsch; J. Huber; R. Jaques

**Commercialization of Insect Pathogens for Insect Control**

Organizer: K.D.Z. Sammuels

Speakers: W. Anderson; R. Daoust; K. Reichelderfer

**Computer Simulation/ Modelling of Epizootics**

Organizer: R.I. Carruthers

Speakers: not available at present

**Ecology/ Epizootiology of Insect Pathogens**

Organizer: J. Maddox

Speakers: not available at present

**Entomopathogenic Bacteria**

Organizer: H. de Barjac

Speakers: P. Baumann; B. Carlton

**Entomopathogenic Fungi**

Organizer: J. Drummond

Speakers: T.M. Butt; H.C. Evans  
& N. Hywel-Jones; A.P.J. Trinci

**Entomophthorales**

Organizer: R. Milner

Speakers: J. Eilenberg; R. Humber;  
N. Wilding

**Fungal Control of Insect Vectors**

Organizer: S.T. Jaronski

Speakers: S.T. Jaronski; J. Lord

**General Protozoa: Current Status as Insect Pathogens**

Organizer: W. Brooks

Speakers: W.M. Brooks; J.J. Jackson;  
G.A. Schaub; J.O. Washburn

**Marine Pathology**

Organizer: L. Owens

Speakers: J. Humphrey; D. Sutton

**Microbial Control of Agricultural Pests**

Organizer: R. Teakle

Speakers: J. Harper; C. Reichelderfer

**Microbial Control of Forest Pests**

Organizer: H. Evans

Speakers: J. Cunningham; P. Entwistle

**Microbial Control of Horticultural Pests**

Organizer: A.T. Gillespie

Speakers: J. Fransen; E. Moorhouse; G. Storey

**Microbial Control of Livestock Pests**

Organizer: D.J. Cooper

Speakers: D.J. Cooper; B. Mullins; K. Temeyer

**Microbial Control of Soil Pests**

Organizer: R.B. Coles

Speakers: C. McCoy; G. Storey

**Microbial Pathogenicity Factors**

Organizer: R. St. Leger

Speakers: D. Ellar; A.K. Chamley

**Molecular Biology and Genetic Manipulation of Invertebrate Pathogens**

Organizer: R.R. Granados

Speakers: R.R. Granados; L.K. Millar; D. Jarvis;  
S. Maeda; C. Gawron-Burke; F. Perlak; D. Millar

**Nematodes**

Organizer: R. Bedding

Speakers: not available at present

**Polydna Viruses**

Organizer: B. Vincent

Speakers: not available at present

**Recent Advances on Microsporidia Infecting Mosquitoes**

Organizer: A.W. Sweeney

Speakers: T.G. Andreadis; G. Avery;  
J.J. Becnel; A.W. Sweeney

**Sex Ratio and Incompatibility Organisms**

Organizer: L. van der Geest

Speakers: A.A. Hoffman; R. Stouthamer; J. Warren

**ELECTION OF SIP OFFICERS/1990-1992**

The slate of nominees for the offices of the SIP council for the 1990-1992 term (1990-1994 in the case of the Trustees) is given below. The biographies of the nominees are given following the slate.

The ballot and the envelopes for the return of the ballot are enclosed with this issue of the Newsletter. Please fill in the ballot paper and seal it in the envelope marked **BALLOT. DO NOT MARK ANYTHING ON THIS ENVELOPE.** Place the ballot envelope in the second envelope addressed to the Secretary of the Society, Dr. R.S. Anderson, write your name on the reverse side of the envelope and mail in time to ensure receipt by **JUNE 1 1990.**

**SLATE OF NOMINEES**

**PRESIDENT**

*E.W. Davidson*

**VICE-PRESIDENT**

*C.C. Payne*

*D.E. Pinnock*

**SECRETARY**

*R.A. Humber*

*L.L. Lacey*

**TREASURER**

*C.F. Reichelderfer*

**TRUSTEES**

*J. Huber*

*T. Iizuka*

*N.A. Ratcliffe*

*G.G. Soares*

## BIOGRAPHIES

### PRESIDENT

*Elizabeth W. Davidson*

**Education:** B.Sc. 1964, Mount Union College, Ohio; M.Sc., 1967, Ohio State University; Ph.D., 1971, Ohio State University.

**Born:** 1942

**Experience:** NIH Postdoctoral Fellow in Acarology, Ohio State University, 1972; Instructor, University of Rochester, NY, 1973; Faculty Research Associate, Arizona State University, 1973–1986; Associate Research Professor, Arizona State University, 1986 – present; Visiting Scientist, Monash University, Melbourne, Australia, 1980; Visiting Scientist, University of Zurich and ETH–Zurich, Switzerland, 1987.

**Membership:** SIP member since 1968; Local Arrangements Chairman, 1974; Nominating Committee, 1977; Chairman, Safety Working Group, 1980–1983; Chairman of Publications Board 1983–84; Microbial Control Division, 1984 – present; Foreign Travel Committee, 1986; Chairman, Endowment Committee, 1986–90; Ad Hoc Committee for the Journal of Invertebrate Pathology, 1987; Secretary, SIP, 1984–1986; Vice-President, SIP, 1988–1990. Entomological Society of America. Sigma xi. American Mosquito Control Association. Society of Vector Ecologists. Editorial Board, Journal of Invertebrate Pathology (1983–1987). Ad Hoc Reviewer, Journal of the American Mosquito Control Association, Journal of Medical Entomology, Canadian Journal of Microbiology, Journal of Economic Entomology. WHO Special Programme for Research and Training in Tropical Diseases, Scientific Working Groups and Consultations, 1978, 1981, 1982, 1985; NIH–Tropical Medicine and Parasitology Ad Hoc Panel, October, 1986. Environmental Protection Agency Biotechnology Science Advisory Committee, Subcommittee on Definition of Pathogen, Washington, DC., February, 1987.

**Interests:** Microbial control of vector insects, with emphasis on *Bacillus* pathogens of mosquitoes. Pathogenesis and mode of action of bacterial diseases. Safety of insect pathogens for nontarget organisms. Insect cell culture.

### VICE PRESIDENT

*Chris C. Payne*

**Education:** B.A. 1968, D.Phil. 1971, M.A. 1973 (University of Oxford).

**Born:** 1946.

**Experience:** Postdoctoral Fellow, University of Otago, New Zealand, 1972–73; Senior Scientific Officer, NERC Unit of Invertebrate Pathology, Oxford, U.K. 1973–77; Head of Insect Virus Section and later Head of Entomology and Insect Pathology Department, Glasshouse Crops Research Institute, Littlehampton, U.K. 1977–1987; Foundation Fellow, International Centre for Insect Physiology and Ecology, Kenya, 1982; Head of Crop and Environment Protection Division and Head of Station (East Malling), AFRC Institute of Horticultural Research, 1987–present.

**Membership:** Member of Society of Invertebrate Pathology since 1977; Joint organizer of IIIrd International Colloquium of Invertebrate Pathology, Brighton, U.K. 1982; Chair, Microbial Control Division 1983–84; Member of the Membership Committee 1983–84; Trustee,

1986–90; Member of the Association of Applied Biologists, Society for General Microbiology, Institute of Biology and Institute of Horticulture. Member, Invertebrate Virus Subcommittee of International Committee for Taxonomy of Viruses 1978–present (Chair, 1984–87); Founder and Convenor, IOBC/WPRS Study Group on Insect Pathogens and Insect–parasitic nematodes 1985–89. Member Editorial Board of Intervirology (1977–85), Journal of Invertebrate Pathology (1979–82), Virology (1983–85), Entomophaga (1986–present), Journal of General Virology 1979–present (Editor 1983–86). Founding editor in chief of Biocontrol Science and Technology (new journal to be launched in 1991). **Interests:** Microbial pathogens of insects, particularly insect viruses. Biological control of arthropod pests in horticultural ecosystems.

*Dudley E. Pincock*

**Education:** HEC Microbiology Brunel University, U.K. B.Sc. (Special Hons) Entomology and Applied Zoology, Imperial College, University of London, U.K. ARCS Entomology and Applied Zoology, Royal College of Science, Imperial College, University of London, U.K. Ph.D. Insect Pathology, University of London, U.K. DIC Insect Pathology, Imperial College, University of London, U.K.

**Experience:** 1965–68 Demonstrator, Imperial College, University of London, U.K. 1968–78 Assistant Professor, then Associate Professor of Entomology and Associate Insect Pathologist in the Agricultural Experiment Station, University of California, Berkeley, U.S.A. 1979–present Reader, then Professor of Entomology, University of Adelaide, Australia.

**Memberships:** Charter Member of the Society for Invertebrate Pathology, Trustee, Society for Invertebrate Pathology. Member of the Australian Entomological Society. Member of the Entomological Society of America. Member of the South Australian State Government Biotechnology Committee. Member of the Board of Directors of Luminis Pty Ltd, the Venture Development Company of the University of Adelaide.

**Interests:** Research and teaching in the microbial control of insect pests, nuclear biology and biochemistry of *Bacillus* entomotoxins, large scale production and formulation of microbial critical agents, registration and safety of microbial control agents, modelling of microbial control systems.

### SECRETARY

*Richard A. Humber*

**Education:** A.B. 1969 (Stanford University), M.S. 1970 (University of Washington), Ph.D. (University of Washington).

**Experience:** Postdoctoral Fellow, University of Maine, Orono, 1976–1978; Postdoctoral Fellow, Cornell University (Ithaca, NY) 1978–1979; Research Associate, Boyce Thompson Institute (Ithaca, NY) 1979–1982; Microbiologist/Insect Mycologist, USDA Agricultural Research Service (Ithaca, NY) 1982 – present; Adjunct Associate Professor (Plant Pathology, Cornell University) 1988 – present.

**Memberships:** Society for Invertebrate Pathology (since 1969), Local Committee for Ann. Mtg. 1983, Culture Collection Committee (1987 – present), Chair Ad Hoc Journal Advisory Committee (1986–87), Mycological Society of America, Culture Collection Committee (chair,

1988–1989); USDA–ARS Microbial Biocontrol Working Group Working Group; International Society for Evolutionary Protistology; Society of Sigma Xi; MacIntosh Computer Users Group (MUGWUMP; Cornell University): Secretary 1985–1987. Editorial Boards: Journal of Invertebrate Pathology 1985–1987; Mycologia 1988 – present.

Interests: Systematic, organismal, and developmental biology of the fungal pathogens of insects, mites, spiders, nematodes, and other invertebrates. Problems of collecting, culturing, preserving germplasm of entomopathogenic fungi and of other microbes; microbial germplasm collections are too often underappreciated by scientific administrators despite their utility as potential sources of biocontrol agents or of compounds with medicinal or other commercial uses. Rising concerns about large–scale organismal extinctions and habitat destruction should address losses of potentially useful microbes as well as of the more conspicuous plants and animals.

**Objectives:** To assure that the Society for Invertebrate Pathology continues to serve the diverse interests of its international membership and the advancement of all aspects of invertebrate pathology and its allied disciplines.

*Lawrence A. Lacey*

**Education:** A.A. (1971), Biology, Chabot College, Hayward, California; B.A. (1973), Biology, California State University, Turlock, California; M.S. (1975) Medical Entomology, University of California, Riverside; Ph.D. (1978), Medical Entomology, Insect Pathology, University of California, Riverside. Certificate of Merit (USDA, ARS, 1983); H.S. Smith Award in Biological Control (Biological Control Division, University of California, Riverside, 1977).

**Born:** 1946

**Experience:** Research Entomologist, Japanese Beetle Control Program, Terceira, Azores, Portugal, International Activities Program, USDA, ARC. October 1989–present; Vector Biologist, Vector Biology and Control Project (USAID), Medical Services Corporation International, Arlington, VA.; (Feb. 1986–Sept. 1989); Research Entomologist, Insects Affecting Man and Animals Research Laboratory, USDA, ARC, Gainesville, Florida. (Mar. 1981–Feb. 1986); Consultant, World Health Organization, Onchocerciasis Control Program, Volta Basin, West Africa. (July–Nov. 1980); Assistant Professor, Instituto Nacional de Pesquisas da Amazonia, Manaus, Brazil. (Feb. 1978–Apr. 1980); Research Assistant, Department of Entomology, University of California, Riverside, (1973–1977).

**Membership:** American Mosquito Control Association American Society of Tropical Medicine and Hygiene; Entomological Society of America (Microbial control division, chair–elect (1984), chair (1985); representative of section C to the editorial board of the Journal of Medical Entomology; Pacific Coast Entomological Society; Society for Invertebrate Pathology (Membership committee, chair (1984–1986) and member (1984–1989); Endowment committee member (1989–present); Safety committee, chair (1984–1988); Microbial control division, secretary (1984–1986); member at large (1989–present) (Society of Vector Ecologists; Sigma Xi; s–135 working group in microbial control participant since 1982.

TREASURER

*Charles F. Reichelderfer*

**Education:** Ph.D. 1968. University of California, Riverside

**Born:** 1937

**Experience:** Assistant Professor, Department of Entomology, University of Maryland, College Park, MD, 1968–1974. Associate Professor, 1974–present. Fulbright Fellow, NERC, Institute of Virology, Oxford University, 1975–76.

**Membership:** Entomological Society of America, Society for Invertebrate Pathology, Co–Chairman, XXII Annual Meeting.

Interests: In vivo production of foreign proteins via recombinant insect viruses. Fate of applied *Bacillus thuringiensis*. Genetics of *B. thuringiensis* toxins.

TRUSTEE

*Jurg Huber*

**Education:** M.S. (Biology) 1967: Swiss Federal Institute of Technology, Zurich (ETHZ) Ph.D. (Insect Pathology) 1973: Department of Entomology, ETHZ.

**Born:** 1944

**Experience:** 1973–present. Research Scientist: Federal Biological Research Centre for Agriculture and Forestry, Institute for Biological Pest Control, Darmstadt, Germany F.R. Since 1989: acting Director of this Institute.

**Membership:** Society for Invertebrate Pathology; Swiss Entomological Society; Treasurer, International Organization for Biological Control/West Palaearctic Regional Section (IOBC/WPRS) (since 1989); Convenor, IOBC/WPRS Working Group on Insect Pathogens and Insect Parasitic Nematodes (since 1989)

Interests: Practical use of viruses for control of insect pests in agriculture and forestry; production, registration and commercialization of microbial and viral pesticides.

*Toshihiko Iizuka*

**Education:** 1955–1959 Hokkaido University; Agricultural Biology; B.Sc. 1959. 1959–1961 Hokkaido University; Agricultural Biology; M.D. 1961. 1961–1965 Hokkaido University; Agricultural Biology; Ph.D. 1965

**Born:** 1937

**Experience:** 1966–1984 Assistant Professor. 1984–1988 Associate Professor. 1988–present Professor. 1979–1980 Visiting Researcher. at Insect Pathology Laboratory USDA, ARS, Beltsville, MD, USA (one year). 1983 Visiting Researcher Great Lakes Forest Research Centre, Sault Ste. Marie, Ontario, Canada (3 months).

**Membership:** Society for Invertebrate Pathology. International Organization for Biological Control of Noxious Animals and Plants (IOBC). Society for Sericultural Science of Japan. Society for Applied Zoology and Entomology. Society for Molecular Biology of Japan. Society for Electron Microscope of Japan.

*Norman Arthur Ratcliffe*

**Education:** B.Sc., Ph.D., 1961–67, Department of Zoology, University College of Swansea. D.Sc. awarded 1984 at above institution.

**Born:** 1942

**Experience:** Cancer Research Campaign Research Fellow. Department of Microbiology, University of Birmingham, 1967–69. University of Birmingham Research Fellow, 1969–70. Lecturer in zoology, University of Leicester, 1970–71. Lecturer, Senior Lecturer, Reader and Full Professor, Department of Zoology, University College of Swansea, 1971–present day. Leader of Biomedical and Physiological Research Group 1985 to present day in School of Biological Sciences, University College of Swansea. Co-organizer Dev. Comp. Immunol. Meeting in Swansea 1982 and of Int. Symposium of Soc. Exptl. Biol. in Manchester, 1986. Author/Editor of 150 papers, books, reviews, etc. including *Invertebrate Blood Cells* Vols. 1 and 2. 1981 and *Vertebrate Blood Cells*, 1988. Reviewer for numerous journals and granting agencies throughout the world such as SERC. NSF. NIH. NERC. EEC. etc.

**Membership:** Editorial Board *J. Invertebr. Pathol.* Editorial Board *Dev. Comp. Immunol.*, Fellow *Inst. Biol.*, Cell Biology Committee of Soc. Exptl. Biol. (UK), Member of Int. Soc. Dev. Comp. Immunol., Royal Microscop. Soc., Brit. Soc. Parasitology and British Soc., Cell Biol., Fellow Royal Ent. Soc. for 15 years. Science and Engineering Research Council Fellowships Committee etc.

**Interests:** Invertebrate immunity particularly cellular defense reactions and mechanisms of non-self recognition. Ambition is to increase the awareness of the granting/government agencies as to the importance of research into invertebrate pathology/immunity.

*George G. Soares, Jr.*

**Education:** B.A. (Biological Sciences), 1969, Rutgers College, New Brunswick, N.J.; M.S. (Entomology), 1973, Rutgers University; Ph.D. (Entomology), 1979, University of California, Berkeley, California.

**Born:** 1947.

**Experience:** Microbiologist, Warner-Chilcott Pharmaceuticals, Morris Plains, N.J.; IPM Specialist, John Muir Institute, Washington, D.C.; NSF Post-doctoral Fellow, U.S.–France Exchange of Scientists Program, La Miniere, France; Visiting Scientist, University of Florida, IFAS, Agricultural Research and Education Center, Lake Alfred, FL.; Director of Entomology, Mycogen Corporation, San Diego, CA.; Science Fellow and Manager of Kubota/Mycogen Biopesticide Collaboration, Mycogen Corporation.

**Membership:** Society for Invertebrate Pathology, Entomological Society of America, California Association of Pest Control Advisors, Cousteau Society, Audobon Society.

**Interests:** Insect pathology (particularly bacterial and fungal entomopathogens), biological control, integrated pest management, insect rearing, sustainable agriculture.

**Objectives:** Contribute through research and development activities to the development of efficacious, selective and environmentally compatible biological pesticide products and strategies; help facilitate the development of agricultural systems and practices that have minimal

negative impact on the environment; gain the knowledge and experience that can maximize these contributions.

## MICROBIAL CONTROL NEWS

The SIP Microbial Control Division is sponsoring this section which features short news items on microbial control. If you have any information which you would like to contribute under this heading, please submit one or two paragraphs to the Newsletter Editor or Mark Goettel, Chairman, Microbial Control, Division, P.O. Box 3000 Main, Lethbridge AB, Canada, T1J 4B1, (FAX 403-382-3156).

### Workshop of Biological Pest Control in Canada

The Alberta Environmental Centre is organizing a workshop on biological control in Canada, to be held in Calgary on 11 – 12 October, 1990. It will cover biological control of pests in the broadest sense, including insect pests, weeds and plant diseases. The program will include review papers, a poster session and panel discussions on current issues. We hope to attract a wide attendance including not only researchers but also producers, extension staff and decision-makers. The workshop immediately follows the annual meeting of the Entomological Society of Canada in Banff.

For further information, please contact Dr. A.S. McClay, Alberta Environment Centre, Bag 4000, Vegreville, Alberta T0B 4L0. Tel. 403-632-6761; Fax. 403-632-5475.

### Field trials of *Metarhizium anisopliae* and *Beauveria bassiana* against *Chalcodermus* weevils in Brazil

Scientists from the Empresa Brasileira de Pesquisa Agropecuaria (EMBRAPA) Centro Nacional de Pesquisa de Arroz e Feijao, Goiania, Goias, and Boyce Thompson Institute, Ithaca, NY are investigating the potential of *Beauveria bassiana* and *Metarhizium anisopliae* for control of *Chalcodermus bimaculatus* (Coleoptera: Curculionidae), the principal pest of cowpeas (*Vigna unguiculata*) in northeastern Brazil. Field applications have targeted the highly susceptible larval stage. Conidia in aqueous suspension are sprayed onto the surface of the soil around the base of cowpea plants when the pods begin to mature and the weevil larvae start to emerge from seeds. Inoculation occurs when larvae drop to the ground and burrow into the fungus contaminated soil to pupate. Small-scale field trials conducted during 1988 and 1989 revealed that both fungi are about equally effective and that applications over the range of 250 to 2000 g/ha produce similar results. Approximately 20–50% of the initial inoculum persisted (remained viable) in the soil for up to two weeks after application and 30% of larvae released onto the soil 10 days post-application succumbed to infection. Screenhouse tests indicate that the fungi are active against weevil larvae in soil with a moisture level as low as 10% of saturation. The use of fungi for control of this difficult pest problem is being further investigated as one possible component of an IPM system, especially in concert with cultural control practices. The weevil tends to exhibit a markedly sedentary habit, indicating that prophylactic applications of these control measures might reduce local populations over successive plantings within a single growing season or over successive growing seasons.

Project personnel include Eliane Quintela of EMBRAPA/CNPAP and Stephen Wraight and Donald Roberts of Boyce Thompson Institute. This research is supported by the USAID Bean/Cowpea Collaborative Research Support Program.

*Don Roberts and Steve Wraight,*  
Boyce Thompson Institute, Ithaca, NY

### **Evaluation of *Beauveria bassiana* for gypsy moth control**

An conidial preparation of *Beauveria bassiana*, produced by Mycotech is being tested for gypsy moth control. Application methods and formulations suitable for residential and commercial application markets in urban and suburban areas are being evaluated. A series of laboratory trials conducted by Alan Iskra with the Appalachian Integrated Pest Management Project, Morgantown, West Virginia tested "barrier" treatments. Logs approximately 1m long x 10cm diameter were treated with a suspension of conidia. After the logs dried, larvae were placed on one end of the log and exposed by walking along the length of the treated section. After one pass or a one hour exposure, larvae were removed and held on artificial diet or on foliage in screen cages. This simulates a treatment in which the trunk and limbs may be sprayed from the ground. Dose rates of  $10^6$ ,  $10^7$  &  $10^8$  conidia per inch of log surface and 1st to 4th instar larvae were tested. Fourth instar larvae showed reduced mortality. Conidia treated shelter bands are currently under laboratory study. Older larvae seek shade and will shelter under burlap placed around tree trunks. In initial tests 80% mortality compared to control was obtained with 4th instar larvae exposed to treated burlap for 16 hrs. Infected larvae show reduced mobility, stop feeding in as little as 48-60 hrs after exposure and die in 5 - 10 days. Controlled humidity experiments indicate that humidity is not a factor in infection. In field trials, the lower 2 m of tree trunks were sprayed and larvae were collected from the top of the sprayed zone at 2 days post spray. These larvae showed 63% mortality.

*Cliff Bradley,*  
Mycotech BioProducts, Butte, MT

### **AUSTRALIAN** (Pronounced "Strine")

Although knowledge of spoken English is useful for communicating in Australia, the visitor quickly realizes that English alone is not adequate to comprehend local citizens. Australia, after all, is an island nation with very independent thinking and often somewhat irreverent people. The result is a very colorful dialect with numerous unique phrases and definitions of some words which are quite different from those assigned to the same words in other English-speaking nations. One complication in trying to fathom the language is that not all people living in Australia were born there. For example, two well-known insect pathologists, Dudley Pinnock and Richard Milner, were raised in England. If you find their Australian easy to understand, it is because they hardly use the language. Australian television airs large doses of American shows; so, fortunately for us, the Australian citizen generally does not have difficulty understanding foreigners speaking their versions of English.

It is not too early to start thinking about your trip to Australia in August to attend the Vth International Colloquium on Invertebrate Pathology in Adelaide. With this in mind, the following lesson on the Australian idiom is presented for your study. The material is basically lifted (with deletion of expressions too strong for our family-style SIP Newsletter) from the booklet "G'day! Teach Yourself Australian in 20 Easy Lessons" by Colin Bowles (Angus & Robertson Publ., Ltd., London. 1986. 118 pp.). The choice of material is based on my brief (3 month) experience living in Australia in 1985. The Australians take great pride in their language, and I delight in the imaginative changes and additions they have made to the Mother Tongue. Accordingly, this lesson is intended to inform the reader about Australian and to have fun with it—but certainly not to make fun of it. Since Anthony Sweeney, an Australian insect pathologist who was born and raised near Sydney, is convinced that any glossary of Australian phrases prepared by a Yank will be "all stuffed up"; we will expect corrections and added material from him for the next Newsletter.

### **Expressing Preferences and Opinions**

It is in expressing preferences and opinions that the Australian language best demonstrates its colorful aspects.

A person who is extremely stupid is the biggest galah this side of the Black Stump (the Black Stump being a mythical post somewhere out in the bush that marks the last outpost of civilization before the Great Culchral Desert - when you're this far away, you're not within coo-ee).

Blokes who are not all that bright are boofheads, drongos or mugs, and if you suspect their grip on reality is tenuous, they're not the full quid, they're a shingle short or they've got kangaroos in their top paddock. If you also suspect that this condition is due to long periods of isolation or too much sun, you'll say they've "gone troppo".

A bloke who doesn't seem to know what he's about doesn't know if he's Arthur or Martha. Everything he does is all over the place like a mad woman's custard. This can be a temporary or a permanent condition.

### **Rafferty's Rules.**

If a person is a clown, they're a bit of a dag. If clothes or decor are a bit tacky or poorly chosen, they're daggy. If something is in poor taste, it is a bit off, or a bit rough, and if it's very good it's magic, top stuff or mint, but often beaut or ripper.

### **Diction.**

Australian speech is about economy and brevity. The secret of good Australian diction is to speak as fast as possible, slurring, or avoiding altogether, the more common words, and never enunciating syllables. Try not to open the mouth. For example, if you are going to ask someone if they are going to have a shower, you don't say: "Are you going to have a shower?" Correct Australian is: "Yagunna avashowr?" "Why don't you" must be pronounced "Whinecha", or "Wadoanacha". "Why didn't you" becomes "Wadincha". "What does he" becomes "Wotssy" or even "Wossy".

The last example above is a case of the disappearing "do". The verb "to do" is cumbersome and has largely been obliterated from the language without in any way affecting meaning. For example: "Do you want a



drink?" becomes "Jerwannadrink?" "Did you go to the beach?" becomes "Jergoda the beach?" "Did you hear about Gary?" becomes "Jerebout Gazza?" "I didn't know it was raining" becomes "I dint note was rainin."

As a general rule, remember that if a "d", "t" or "g" comes at the end of a word, with a consonant in front of it, it ceases to exist. Example: "It's yaw shout. I gotta las roun."

Note: There are only 25 letters in the Australian alphabet. The aspirate "h" is never used. Thus the famous Australian directive "Pull your head in" is spoken as "Pullyeredin". And the pronoun "he" becomes simply "e" or "y". For the sentence "He won, didn't he?" say "E won, dinty?"

The rapid-fire speech pattern does not hold true for short sentences. The trick is that all Australian sentences are the same length, so that a sentence of 20 words has the same duration as one with only two. If you want to say "fair go" for example, you should take approximately five seconds over it.

Finally, remember that inflection and stress are always on the last syllable of any speech, and the pitch rises as if you were asking a question.

## Vowels.

The peculiarities of Australian vowel production become more noticeable as you move away from urban areas into the country. Accents become broader and harsher. "I" sounds become "oi" and "I like" becomes "Oi loike". "Off" becomes "orf", "salt" becomes "solt" and "shower" broadens into "share". For example, if a farmer comes down from the country to spend a few days at Bondi, has a swim and wants to have a shower to get the salt off, he will say: "Oi reckon oil avashare nare and getta solt orf." Another feature of the broader rule accent is that "u" sounds have a tendency to become "ar". "Stuck" becomes "stark". In the bush you will also hear "day" pronounced "die".

That gives you a general grounding on Australian. Good luck.

## Vocabulary.

### A bit of a worry

Something perturbing or suspect. A useful expression, covering a lot of territory; anything from the threat of nuclear annihilation to a person's taste in music can be a bit of a worry.

### Arvo

Afternoon.

### Back of Bourke

In the middle of nowhere. Bourke is a town in New South Wales standing right on the edge of the Culchral Desert, which is a barren waste extending from Bourke in the east, to Perth in the west.

### Barbie

Barbeque.

### Beaut

Very common Australian expression for anything that is very good.

### Blowies

The infamous Australian sheep blowfly (*Lucilia cuprina*) otherwise known by entomologists as "Lucy."

### Bonza

Great, excellent.

### Breckie

Breakfast. Note: Shortening and addition of "ie" is done with many common words.

### Bizzo

Business

### Buckley's

If you have a Buckley's chance, you have no chance whatsoever (also heard as: "You've got two chances – none and Buckley's.").

### Chook

Chicken.

### Fair dinkum

The absolute truth.

### Galah

A derogatory term. A galah is a native pink and grey parrot noted for its raucous cry while hanging upside down from telegraph wires.

### Give it a punt

Give it a try (also "give it a burl").

### Like a stunned mullet

With an unintelligent expression on the face.

### Mozzies

Mosquitoes.

### Pommies

Those of British extraction. This is not a derogatory name. Thought to be derived from 'prisoner of his/her majesty' in the days when Australia became a British penal colony, the American colonies having been barred to them by an unfortunate little altercation in 1776)

### Sammie

Sandwich. (See "breckie.")

### Short of the readies

Short of money.

### Stuff all

Nothing.

### Stuff up

Make a mistake.

### Tea towel

Dish cloth.

### The missus

My spouse. In correct Australian, the words "missus" and "wife" are always preceded by "the", never by a possessive pronoun.

### To cop out

To back out after agreeing to take part in; or to take the easy way out. Also used as a noun.

### Tomato sauce

Tomato ketchup. Popular in Australia because of its ability to mask the flavor of meat pies.

### To shout a beer

To buy a beer (for someone else). Used as either a verb or a noun, "shout" is one of the most important words in the Australian language. Those visitors who haven't time to master the language as a whole will be well-received if they learn only the phrase "My shout" and use it as often as possible.

### Tub

A shower.

### Vegemite

Black paste eaten on bread reputedly made from dead wombats and liquid

bitumen but is probably a mixture of yeast and salt. Addictive to Australians, but to no other race. (Don – you obviously are unaware of the closely related British product Marmite which is about to be unleashed on an unsuspecting American public – editor)

*Donald W. Roberts*

### Situation vacant

Postdoctoral position: Research – developing entomopathogens for biocontrol of thrips on sugar maple. Experience in laboratory rearing, pathology and soils preferred. Two year programme, option for renewal. Available immediately. Contact: Bruce L. Parker, Entomology Research Laboratory, Spear Street, South Burlington, Vermont 05403. Phone (802) 658 4453. The University of Vermont is an affirmative action/equal opportunity employer.

### Notice of forthcoming meetings

The Entomological Society of America has issued an invitation to other societies to co-sponsor events at its Annual Meeting to be held in New Orleans, Louisiana, December 2–6, 1990. The theme of this meeting is 'Interactions'. A symposium tentatively entitled 'Molecular interactions between insect pathogens and their hosts', convened by Brian Federici, will be jointly sponsored by SIP and ESA. The symposium topic was generated by individuals who are members of both Societies. Section C of the ESA is chaired by SIP member Bob Granados.

### B.t. 91

#### FIRST ANNOUNCEMENT

A meeting will be held in Oxford, U.K. 28th – 31st July, 1991, encompassing all aspects of current work on *Bacillus thuringiensis*.

For preliminary details, please contact:

*Philip F. Entwistle*

Institute of Virology and Environmental Microbiology,  
N.E.R.C.

Mansfield Road, Oxford OX1 3SR,  
U.K.

### Request for copies of Colloquium Proceedings

The Entomology Library of the University of Minnesota needs to acquire a copy of the proceedings of the 2nd (1978) and 3rd (1982) International Colloquiums on Invertebrate Pathology to add to its collection. If any member has copies of either or both of these proceedings that they are willing to donate or sell to the Library, please contact:

St. Paul Campus Libraries: Acquisitions  
ATTN: Beth Wolszon  
University of Minnesota  
1984 Buford Avenue  
St. Paul, MN 55108 USA



### OBITUARY DR. KURT PURRINI

Kurt Purrini died in June 1989 after an illness of some months duration. When critically ill he was flown from Tanzania to West Germany and died in hospital a few days later.

Of Albanian origin, Kurt grew up and was educated in Yugoslavia. After graduating in Entomology his interest was drawn towards insect pathology and his first publications were on protozoan parasites of insects collected from old mills in Yugoslavia which he studied from 1972–5 while at the Landwirtschaftliche Hochschule Prishtina, Kosova. During this period he also studied parasites of forest lepidoptera and was in close contact with Dr. Jaroslav Weiser at the Institute of Entomology in Prague. After leaving Yugoslavia, Kurt spent some time in Dr. Weiser's laboratory where his interests in insect pathology were consolidated. He later worked at the Institute für Angewandte Zoologie, University of Munich and then at the Institute für Forstzoologie, University of Göttingen.

Kurt spent a few weeks in my laboratory before going to the University of Göttingen and I met him again in Tanzania, when he was working on the control of Rhinoceros beetle in the National Coconut Development Programme under a technical cooperation scheme provided by Deutsche Gesellschaft für Technische Zusammenarbeit (GZT). He was most helpful to Judith Pell and me when we visited Muheza, Tanzania in 1985 in providing transport to help us collect mosquito larvae infected with microsporidia. After a brief transfer, Kurt returned to Tanzania where he contracted his final illness.

Although almost all his publications dealt with the development of protozoan parasites of insects and mites, his interests were more broadly based and included studies of bacterial and virus strains infecting insects. Although his career in insect pathology was cut short by his untimely death, he had made his mark in the field of insect pathology and his ebullient personality will be sorely missed at scientific meetings.

*Elizabeth U. Canning*

### Apologies

Credits for the photographs of the Annual meeting in Maryland which appeared in the preceding two issues were unfortunately omitted. The photographs were the work of Toshio Iizuka and Bill Martin.

*Editor*

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