

sip

newsletter

society for invertebrate pathology

Volume 17, Number 2
May 1985

SOCIETY FOR INVERTEBRATE PATHOLOGY

XVIII ANNUAL MEETING

HOLIDAY INN, SAULT STE. MARIE, ONTARIO, CANADA

AUGUST 4-8, 1985

FROM THE PRESIDENT

To maintain its vigour, the SIP must be an outward-looking Society. This should not be difficult, because these are exciting times. We can now tailor pathogens to forms that our experience suggests should be better agents for the microbial control of pests. Genetically manipulated strains of *Bacillus thuringiensis* (B.t.) have been designed with improved host range and/or improved potency against a particular key pest.

The high proportion of protein in the B.t. cell that becomes crystal toxin, and the great bulk of polyhedrin in the baculovirus inclusion body show that these pathogens have very powerful promoter sequences in their genomes. Such promoter sequences can be used in applications both within and outside invertebrate pathology. Insertion of genes for production of human beta interferon or of beta galactosidase into the "polyhedrin" region of the virus genome has resulted in high yields of these products when modified virus infects insect cell lines. Such research is most efficient when scientists outside invertebrate pathology co-operate.

This brings me to the point I really wish to make. We need to introduce these co-operating scientists to the SIP. This will become more important as their applications may race ahead of our Invertebrate studies. At the present time, when many members are thinking about the design of our next two SIP meetings, or about what papers they could give at these meetings, I appeal to members to bring in these scientists and their interests from other fields to broaden the outlook of our Society and hopefully encourage colleagues with varied interests to become members.

These are rather dramatic examples. Other aspects of Invertebrate Pathology, of course, also offer opportunities to involve the scientific world beyond the Invertebrates. For instance, knowledge of invertebrate defence mechanisms may lead to valuable comparisons. The protection of marine invertebrate fisheries make us in a sense "invertebrate doctors", which may have feed back to human medicine, also the ecology involved may have far reaching parallels and so on. Can you, in your field, introduce an "outside" interest?

Now on another topic. I have virtually completed filling the posts on our Boards and Committees, and feel that

you will probably wish to know who has kindly agreed to serve our Society, in addition to Council Members, for the current 2 years, with some comments on their backgrounds:-

Publications Board: Chair, J. Harker (USA, insects, microbial control), H. Burges (President, UK, insects, bacteria); T. Cheng (J.I.P. Ed., USA, marine); G. Wilson (Newsletter Ed., Canada, protozoa); J. Harshbarger (Vice President, USA, oncology); J. Fuxa (Treasurer, USA, insects, epizootiology).

Meetings Board: Chair, D. Roberts (USA, insects, fungi); R. Granados (USA, insects, viruses); D. Lightner (Marine interests).

Nominating Committee: Chair, Y. Tanada (USA, insects, viruses); H. Dulmage (USA, insects, bacteria), S. Sohi (Canada, insects, tissue culture); Anne Lackie (UK, all invertebrate groups, immunology, recognition); R. Milner (Australia, insects, fungi); W. Brooks (USA, protozoa).

Membership Committee: Chair, L. Lacey (USA, insects, bacteria); J. Fuxa (Treasurer, USA, insects, epizootiology); M. Trip (USA, marine); D. Pinnock (Australia, insects, bacteria); J. Pillai (New Zealand, insects, mosquito pathogens).

Auditors: S. Jaronski; J. Yoshino.

Founders Lectureship Committee: Chair, J. Briggs; P. Johnson; R. Granados; L. van der Geest.

Glossary Committee: Chair, M. Martignoni; L. Bailey; S. Feng; J. Harshbarger; P. Johnson; A. Krieg; C. Payne; H. Rossmore; A. Sparks; C. Vago; H. Welch.

Colour Slide Atlas Committee: Chair, R. Gaugler; E. Davidson; G. Poinar; D. Boucias; J. Maddox; C. Kawanishi; W. Brooks.

Culture Collection Committee: Chair, H. Burges; S. Jaronski; C. Payne; D. Boucias (to be confirmed).

Research Alliance Committee: Disbanded after reporting in 1984. Recommendations referred to Division of Microbial Control.

New Initiatives Committee: Because I wish to ensure that the SIP is progressive, I have secured the enthusiastic services of H. Kaya to chair a large committee that is being formed to consider present SIP activities and whether it should engage in new activities.

Archivist: W. Brooks.

Regional Correspondents of the Newsletter: K. Aizawa (Japan); H. Burges (UK); B. Gabriel (Philippines); R. Teakle (Australia); H. Wassink (Latin America); K. Soderhall (Scandinavia); C. Yamvriasis (Greece). The following have indicated to the Newsletter Editor that they will also serve:

S. Amonkar (India); J. Chadwick (Canada); R. Kenneth (Israel); J. Pillai (New Zealand); G. Riba (France).

I.U.B.S. Representative: J. Briggs.

Pacific Science Association Representative: J. Pillai.

Membership of I.U.B.S. Committee on Biological Monitoring of the State of the Environment: J. A. Couch.

Annual Meeting Programme Committee: 1985; Chair, T. Ennis has formed a committee of local workers: 1986; Chair, J. Vlask; Secretary, R. Samson; Treasurer, D. Peters; Members; W. Simons, L. van der Geest, P. Ramakers.

Dennis Burges.

ACTIVITIES
SOCIETY FOR INVERTEBRATE PATHOLOGY MEETING
SAULT STE. MARIE, ONTARIO, CANADA
AUGUST 3-9, 1985

PRE- AND POST- CONFERENCE ACTIVITIES

Sat. Aug. 3rd Fishing trip.

Paul Fast has offered to lead a fly fishing expedition to one of our local rivers. Participants will have an opportunity to buy a lunch and some local flies and then head to the site about noon with the intention of spending 8 to 10 hours or so on stream. There are no guarantees about the catch, but some good fishing is assured. Participants must bring their own gear. There will be a small charge to defray cost of a rental vehicle and gas. Participation will be limited; if you are interested, please drop Paul a line or phone him at 705 949 9461 (leave a message if he is out).

SIP NEWSLETTER

The SIP Newsletter is produced four times a year by the Society for Invertebrate Pathology. Annual dues (U.S. funds) in the Society are: regular members, \$11.00; and students, \$4.00. Members receive the 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, Dr. James R. Fuxa, Dept. of Entomology, Louisiana State University, Baton Rouge, Louisiana 70803-1710 U.S.A.

Council Officers of the Society are:

President	H. Denis Burges, England
Vice President	John C. Harshbarger, USA
Past President	Wayne M. Brooks, USA
Secretary	Elizabeth W. Davidson, USA
Treasurer	James R. Fuxa, USA
Trustees	John A. Couch, USA Brian A. Federici, USA John E. Henry, USA Hitoshi Watanabe, Japan

Send news items and other contributions to:

Gary G. Wilson, Editor
SIP Newsletter
Forest Pest Management Institute
Canadian Forestry Service
P.O. Box 490
Sault Ste. Marie, Ontario, Canada P6A 5M7

DEADLINE NEXT ISSUE: SEPT. 5, 1985.

Fri. Aug. 9th Tour north along Lake Superior.

Two outings will be offered, an athletic and strenuous one will be led by Paul Fast and less strenuous one by John Cunningham. Tours will leave the Holiday Inn at 9:00 am and return about 6:00 pm.

Paul's outing is for hikers and will involve a 7 mile circle hike of intermediate difficulty, in Lake Superior Park, about 80 miles north of Sault Ste. Marie. Hiking time is 4 to 6 hours depending on pace and rest stops. There are fine views, varying virgin forest and the trail leads to the lake shore and back. You must be used to walking this distance and must be equipped either with hiking boots or running shoes - no street shoes. Fit teenagers are welcome, but not children. A box lunch will be required and this can be obtained at the Holiday Inn. You should wear hiking clothes and a light jacket and we recommend you bring swim suits and a towel, which can be left in the vehicle during the hike. We plan to visit a beach on the return journey.

John's party will drive the same route as Paul's with spectacular views over Lake Superior, but will stop at the southern limit of Lake Superior Provincial Park. We shall scramble about half a mile to the lake shore to view the Agawa Indian pictographs. Running shoes are recommended and those who do not relish rough terrain can remain at the vehicle. A guided nature walk may be arranged with park officials. We intend to eat lunch at one of the restaurants along the way. Bring swim suits and towel; we shall stop at one of the many fine beaches along the way.

Please sign up for these activities at the registration desk. Paul's hike is limited to 12 people on a first-come, first-served basis. There will be a charge of \$10 Canadian per person for either trip to cover the cost of the rental vehicles and gas.

SOCIAL PROGRAM FOR DELEGATES

Sun. 4th Aug., 7-9 pm Mixer

There will be a free mixer for registered delegates and their spouses in the ballroom of the Holiday Inn. Finger foods, beer and wine will be served and we intend to supply sufficient food to satisfy appetites in lieu of dinner.

Tues. 6th Aug. Banquet

A cash bar will open at 6 pm in the ballroom of the Holiday Inn and dinner will be served at 7 pm. The main course is prime rib and wine will be provided. Entertainment will be provided. The cost is \$20 Canadian per person payable with your registration or tickets may be purchased at the Holiday Inn until 5 pm on Mon. 5th.

Wed. 7th Aug. 5 km Road Race and Barbecue

Both events will be held at Hiawatha Lodge on the outskirts of Sault Ste. Marie. Runners, race officials and those wishing to spectate will leave the Holiday Inn at 4:30 pm and the race will, hopefully, start at 5:00 pm. There are saunas and showers and the runners can freshen up and change before the barbecue.

Non-runners will leave the Holiday Inn at 5:30 pm. At the barbecue hamburgers, hot dogs, salad, soft drinks and lots of beer will be available. Cost is \$10 Canadian for adults and \$4.00 for children. This is payable with your registration or tickets can be purchased at the Holiday Inn until 5 pm on Mon. 5th. We shall also try to arrange to have volley ball nets set up at the park.

We wish to remind you that we are having souvenir T-shirts printed. They are available to non-runners as well as runners at a cost of \$8.00 Canadian. These T-shirts MUST BE ORDERED AND PAID IN ADVANCE. Remember to state the size - men's large, medium or small. We shall only print-up those which are ordered.

SPOUSES' PROGRAM

Mon. Aug. 5th Agawa Canyon Train Tour.

The Algoma Central Railway Station is close to the Holiday Inn. The train leaves at 8:00 am and returns about 5:00 pm. Cost is \$27 Canadian for adults, \$13.50 for children and free for children under 5. There is a dining car on the train or one can order a packed lunch from the Holiday Inn. Mrs. Ruby Burke has offered to accompany SIP members on this trip. Please sign up at the registration desk and we'll see you do not miss the train!

Tues. Aug. 6th Mackinac Island.

John and Jean Burke have offered their services as tour guides for this expedition. If you are not either an American or Canadian citizen, a US VISA IS REQUIRED. Vehicles will leave the Holiday Inn at 9:00 am and cross the International Bridge to Michigan. A 60 mile drive will take you to St. Ignace where you will get a ferry to Mackinac Island. It is a quaint spot with no motor vehicles, a reconstructed fort and the famous Grand Hotel. There are numerous souvenir shops, restaurants and other tourist attractions. You will have lunch on the island, but if you wish to dine in the Grand Hotel, a reservation is recommended. Incidentally, this establishment is now charging \$2.00 to enter the lobby as a deterrent to curious sightseers! There will be a charge of \$10 Canadian per person to cover the cost of rental vehicles, gas and ferry charges. We should be back at the Holiday Inn by 5:00 pm in plenty of time to spruce up for the banquet. Please sign up for this outing at the registration desk.

FREE TIME ACTIVITIES

On Wed. 7th Aug., prior to the 5 km road race and barbecue we are offering two concurrent tours, one to the Forest Pest Management Institute and the second to the Sea Lamprey Control Laboratory, the Canadian Lock (completed in 1895) and run by Parks Canada, and Whitefish Island. Please sign up for these tours at the registration desk, so we can organize transportation.

There are lots of things to do in Sault Ste. Marie and we feel that people will prefer to "do their thing" rather than be organized and regimented. There are boat tours of the American and Canadian locks which leave from a dock just east of the Holiday Inn. This tour is strongly recommended. The Ermatinger Old Stone House is less than a mile east of the Holiday Inn. It was built in 1814 by Charles Oakes Ermatinger, an eminent fur trader, for his Indian Princess wife. It has period furnishings and a cookhouse where visitors may sample authentic pioneer cuisine. There is a double decker bus tour of the city which takes about 2 hours and departs at a location close to the Holiday Inn.



A tour boat going through the Canadian locks. A span of the International Bridge can be seen in the background.



Sault Ste. Marie Civic Centre.



Georgian style stone house built by Charles Oakes Ermatinger in 1814 is the oldest house in northern Ontario. Most houses were built of wood and have not endured.

For shopping, there is a large mall very close to the Holiday Inn called the Station Mall. Another mall, the Cambrian Mall, is about 2 miles away and arrangements can be made to drive people there if there is sufficient interest.

POSITION AVAILABLE

ENTOMOLOGIST/FUNGAL EPIZOOTIOLOGIST. Forest Pest Management Institute, Sault Ste. Marie, Ontario. Available immediately, Ph.D. in entomology or an MSc in this field with related research experience including authorship of reports or papers equivalent to that normally obtained at the Doctorate level. To conduct research into the effectiveness of fungal pathogens as control agents for forest insect pests in nature, to contribute to the development of computer simulation models of host-pathogen interactions and to participate in the development of entomogenous fungi as practical biological control agents. For further details and application forms:

Contact - Gisèle Samson-Verrault
Room 1052
Sir John Carling Bldg.
Ottawa, Ontario
K1A 0C5

By 15 July/85

4th ICIP '86

GENERAL INFORMATION

The organising committee of the 4th International Colloquium on Invertebrate Pathology would like to welcome you to the Netherlands in 1986. The meeting, ICIP86, will be held in conjunction with the XIX Annual Meeting of the Society for Invertebrate Pathology from August 18-22 in "Koningshof" Congress Hotel and Meeting Centre in Veldhoven, near Eindhoven. The information provided in this and future Newsletters is intended to facilitate your planning and to make your stay at the conference and in the Netherlands most enjoyable.

THE ORGANISING COMMITTEE

The organising committee was formed by a number of Dutch invertebrate pathologists, that are members of the Working Party of Integrated Pest Control in the Netherlands. The committee is headed by Dr. Just Vlak, insect virologist at the Department of Virology of the Agricultural University in Wageningen. Dr. Rob Samson, mycologist at the Centraalbureau voor Schimmelcultures in Baarn, will be the Programme Chairman of the meeting. Dr. Dick Peters, insect virologists at the Department of Virology of the Agricultural University in Wageningen, is treasurer and responsible that financial ends meet. The organising committee is completed with Dr. Wilfried Simons, nematologist of the Private Agricultural College in Friesland, Dr. Leo van der Geest, insect pathologist at the Laboratory of Experimental Entomology at the University of Amsterdam, and Dr. Pierre Ramakers, entomologist of the Research Institute for Plant Protection.

The committee is further assisted by Mrs A.F.F. de Vries-Eras and her secretarial staff at the Department of Virology in Wageningen.

Please send all your correspondence regarding the PROGRAMME to: Dr. R.A. Samson, Program Chairman ICIP86, Centraalbureau voor Schimmelcultures, P.O. Box 273, 3740 AG Baarn, The Netherlands, Telephone 31-2154-11841.

Please send all your correspondence regarding the CONFERENCE to: Conference Office ICIP86, c/o Mrs A.F.F. de Vries-Eras, Department of Virology, Agricultural University, P.O. Box 8045, 6700 EM Wageningen, The Netherlands, Telephone 31-8370-8390, Telex 45015 and 45917.

ACCOMMODATION

Congress Hotel and Meeting Centre "Koningshof" in Veldhoven is a fully equipped, all-under-one-roof conference centre with exceptional meeting and recreational facilities. Koningshof is a former nunnary and is situated in a secluded area of 79 acres just outside Eindhoven. It combines the serene atmosphere of a monastery with all the modern comfort which makes this meeting an enjoyable experience. At least 350 delegates can be accommodated on the premises.

The hotel facilities include 178 single and 87 double bedrooms. Each room is provided with a shower, washstand and toilet, radio and direct dial telephone. The conference centre including the recreational facilities is at the disposal of the participants.

The board and lodging arrangements include 5 nights, Sunday August 17 through Friday August 22, 5 breakfasts, 5 lunches, 2 dinners, the banquet on Thursday evening, coffee and tea. Meal service will start with breakfast on Monday morning and will continue through tea on Friday, August 22. Wednesday afternoon there is a leisure programme at choice. Arrangements for accommodation and meals on Saturday August 16/Sunday August 17 and Friday evening August 22/Saturday August 23 are optional.

Other accommodation and eating facilities in the neighbourhood of "Koningshof" are scarce and, without own means of transportation, not advisable.

The all-inclusive rate for the accommodation, meals etc. will be approximately Dfl. 700 for single room and Dfl. 550 for double room accommodation.

The Congress Hotel and Meeting Centre "Koningshof" can be reached: Locht 117, POB 140, 5500 AC Veldhoven, The Netherlands, Telephone 31-40-537475, Telex 59278 kohofnl.



From left to right your hosts for the meeting: Dr. Pierre Ramakers, Dr. Rob Samson, Dr. Wilfried Simons, Dr. Leo van der Geest, Mrs. A. F. F. de Vries-Eras, Dr. Dick Peters and Dr. Just Vlak.

PROGRAMME

The provisional programme includes 15 symposia, 17 mini-symposia, about 30 contributed paper sessions, and poster presentations. In addition, there is ample opportunity for personal contacts and leisure during 30 min coffee and tea breaks, and 2 hour lunch and dinner breaks. The symposia aim at topics, themes and concepts of general interest, usually interdisciplinary programmed. The mini-symposia will contain topics of particular interest and will be mono- and disciplinary in nature. The majority of contributions by delegates can be accommodated in contributed paper sessions, that will be arranged according to topics of the symposia and mini-symposia, and under the headings of the various pathogen groups and organisms. Papers on both fundamental and applied aspects of invertebrate pathology are welcomed.

The symposia at present planned are:

1. Biological control of pests
2. Genetic improvement of insect pathogens
3. Biological control of vectors with microbials I
4. Biological control of vectors with microbials II
5. Defence strategies of invertebrates
6. Current status on the use of insect pathogens as biocontrol agents
7. Pathogens of terrestrial and marine invertebrates
8. Epizootiology and ecology of invertebrate pathogens
9. Biotechnology and production of insect pathogens
10. Insect control with nematodes
11. Registration of bio-insecticides
12. Molecular genetics of baculoviruses
13. Engineering and expression of bacterial toxins
14. Recent advances in microsporidology

The organizing committee is now in the process of appointing convenors of the symposia and mini-symposia. The speakers invited for the symposia will be asked to write a mini-review on their special subject. These contributions together with abstracts of papers in mini-symposia, contributed paper sessions and poster presentations will be included in the Proceedings, that will be available at the meeting.

REGISTRATION

The standard registration fee will be approximately Dfl. 200 and include the program book, the Proceedings, name badges, mailings and other expenditures.

There will be a reduced registration fee for students, but a proof of student status is required.

A letter of invitation from the organizing committee is available on request. There will be no financial aid supporting this invitation by ICIP86.

TRANSPORTATION

Royal Dutch Airlines (KLM) has been selected as official carrier for ICIP86. KLM offices all over the world will gladly assist participants to obtain all the information they may need about their traveling arrangements.

Eindhoven is easily reached by road, rail and air, being only 20 min by bus from the conference centre. Eindhoven is only 90 min by rail from central Amsterdam. Eindhoven Airport has direct flights to Amsterdam, Paris, Hamburg and London (Gatwick), but occasional services on Saturdays and Sundays. Special flights will be scheduled in case of sufficient interest. Bookings on these special flights should be made with KLM well in advance.



LEISURE AND WEATHER

The traditional 5 km SIP road race will take place on Tuesday morning at 7.00 am. Wednesday afternoon optional excursions will be organized. We expect to arrange a visit to sites of interest in the Netherlands.

There will be a special programme for accompanying persons depending on their number.

The weather conditions in August are usually good with an average temperature of around 20 degrees. It is suggested to bring a sweater and an umbrella, in case of chilly evenings and an occasional rain shower.

OTHER RELATED MEETINGS

From August 25 until August 29, 1986, the Third European Congress of Entomology will be held in Amsterdam. The major topics are: (i) Ecology of aquatic insects, (ii) Specific environmental adaptations in terrestrial insects, (iii) Theoretical and practical aspects of insect protection. Info: Congress Office Vrije Universiteit Amsterdam, P.O.B. 7161, 1007 MC Amsterdam, The Netherlands.

The XIVth International Congress of Microbiology will be organized in Manchester, England, September 7-13, 1986. Info: Congress Office XIV ICM, Mr. A.F. Yates, Trading Services, UMIST, P.O. Box 88, Sackville Street, Manchester M60 1Qd, England.

CORVALLIS LABORATORY MASS PRODUCES NEW INSECTICIDES

When the next outbreak of the Douglas-fir tussock moth is detected in forests of the western United States, forest managers should be better prepared to cope with it, thanks to development of a new insecticide - TM BioControl-1. The lethal ingredient in the insecticide is the nuclear polyhedrosis virus (Baculovirus subgroup A), which causes a fatal disease that contributes to the natural collapse of tussock moth outbreaks.

TM BioControl-1 is a natural, nonchemical means of insect control that is both effective and safe. It was developed during 15 years of research at the Forest Service's Forestry Sciences Laboratory (FSL), Pacific Northwest Station, in Corvallis, Oregon, and is now being mass produced in Corvallis for use in the next outbreak. By the fall of 1985, enough virus should be available to treat 200,000 acres of forest.

The Pacific Northwest Region of the Forest Service geared up to produce the virus in 1980 after a private company defaulted on the job because of costs and

difficulties associated with raising large numbers of insects. In addition to producing the virus, the goal is to develop suitable production techniques so the job can be done by private enterprise in the future.

The virus production work is directed by Don Scott of the Region's Forest Pest Management staff. Scott is an entomologist who gained his experience in microbial control while working for the Pacific Northwest Station in the mid 1970's. Microbiologist Mauro E. Martignoni of the Station's Forestry Sciences Laboratory in Corvallis, is technical adviser for the project. He is responsible for setting standards and monitoring product quality. Martignoni has directed most of the Station's basic laboratory work on the virus for the past 20 years.

Scott and his staff of eleven scientists and technicians are responsible for rearing the insects and propagating the virus. The work is done in four different laboratories, by separate staffs who follow rigid procedures to safeguard the insects from contamination by other disease organisms. Three laboratories are used for insect rearing and diet production. Those are located at the FSL in Corvallis. The fourth laboratory is devoted to virus propagation and is at the Corvallis airport.

Because the virus is produced in the bodies of infected tussock moth larvae, Scott's first job was to raise large numbers of tussock moths. Larvae collected from the forest could not be used because nothing was known about their genetic background and health. Fortunately, a starting colony was available from a disease-free strain developed by Martignoni and the biological laboratory technician Paul J. Iwai at the FSL in Corvallis. Scott and his staff have modified the rearing methods for purposes of mass production.

From an article by D. Bergstrom which appeared in "Forestry Research West", January, 1985.

INSECT PATHOLOGISTS VISIT CENTRAL UNIVERSITY OF VENEZUELA

Dr. Donald Jouvenaz from the Research Laboratory on Insects Affecting Man and Animals, U.S.D.A., Gainesville, Florida, visited the Agronomy Faculty of Central University of Venezuela in Maracay from January 7-9, 1985. Dr. Jouvenaz works on diseases of the imported red fire ant, Solenopsis invicta, a medical and agricultural pest affecting approximately one billion hectares in nine southeastern states. During his visit, Dr. Jouvenaz gave a lecture for the Department of Agricultural Zoology on "Diseases of Ants". From Venezuela he continued to Brazil to collect diseased ant pathogens and other natural enemies of Solenopsis invicta and related species. His stay in Brazil will be for about seven weeks, and research will be carried out in cooperation with EMBRAPA in Caceres, Mato, Grosso, near the Bolivian border.

From 14-16 of January, Dr. Randy Gaugler, Rutgers University, Department of Entomology and Economic Zoology, New Brunswick, New Jersey, also visited the Agronomy Faculty in Maracay where he gave a seminar for the Department of Agricultural Zoology on "The Biological Control Potential of Steinernematid Nematodes". Dr. Gaugler came to Venezuela via Panama where he has a project with the Panamanian Agricultural Research Institute IDIAP for the control of white grubs in corn with entomogenous nematodes Neoaplectana and Heterorhabditis.

Henri Wassink, Regional Correspondent.

Fairfax Biological Laboratory, Inc. of Clinton Corners, New York is celebrating its fortieth anniversary this year. The firm was established in 1945 by Anna and Howard Chittick for the purpose of making milky disease spore powder available to home owners in the eastern United States. The active ingredient in their powder is Bacillus popilliae, a specific control agent for use against the larval stage of the Japanese beetle. The firm is still using the process developed and patented by Samson R. Dutky of the USDA for producing this material. That is, Japanese beetle grubs, themselves, are the medium used for culturing the spores.

Fairfax spore powder is marketed under two labels, JAPIDEMIC and DOOM, although the contents of the packages are the same, i.e. 1×10^8 viable spores for each gram of powder. The DOOM trademark has been in continuous use since about 1895, while JAPIDEMIC has been registered for a little more than forty years.

Dr. Dutky's milky disease treatment has been given credit for the reduction of the Japanese beetle population in this country by many authorities. For those of you who are too young to remember the horrible Japanese beetle infestations of the 1920s and 1930s, you are referred to the National Geographic Magazines of July 1929 and August 1941.

Howard A. Chittick, Fairfax Biological Laboratory

SHORT COURSE ON PENAEID PRAWN DISEASES

Over the period 11-15 March 1985, the Central University of Venezuela organized and delivered a short post-graduate level course on penaeid prawn diseases for the benefit of Biologists from the General Directorate of Fisheries and Aquaculture of the Venezuelan Ministry of Agriculture and Breeding. This course was designed to familiarize these Biologists with the principal types of microbial and parasitic diseases likely to occur in species of penaeid prawns, thereby enabling the professionals concerned to act as Prawn Health Inspectors in the country.

Resolution No. 391 of the Ministry of Agriculture and Breeding, which became law on its publication in the "Gaceta Oficial" of the Republic of Venezuela dated 20 November 1984, makes it a punishable offence to introduce prawns of the species Penaeus japonicus, P. monodon, P. stylirostris and P. vannamei into Venezuela without prior authorization of the Fisheries Directorate. A prerequisite for introduction is a prawn health certificate issued by the exporting country, in accordance with norms laid down by the Fisheries Directorate of the Venezuelan Ministry of Agriculture and breeding.

The course itself was given in the Fish Pathology Section of the Faculty of Veterinary Sciences, Central University of Venezuela. Dr. Brian Austin, of the Department of Biological Sciences, Heriot-Watt University, Edinburgh, Scotland, acted as a Visiting Professor in the course, and provided specialist knowledge and experience on the isolation and identification of microbial pathogens from crustaceans and marine fish. Dr. Austin visited Venezuela under the auspices of the British Council and the Central University of Venezuela. Other teachers on the course included Dr. David Conroy, Professor and Head of the Fish Pathology Section, and Drs. Ascanio, Armas de Conroy, Sogbe, and Santacana, of the Faculty of Veterinary Sciences.

Henri Wassink, Regional Correspondent

Microbiologist Mauro Martignoni, Corvallis, recently received word that a publication of which he is co-author was translated into Chinese and published in Beijing in 1982. It is An Abridged Glossary of Terms Used in Invertebrate Pathology by Martignoni and Edward A. Steinhaus (1970 edition). According to Martignoni, the publication includes an introduction by the translators, Fang-Gui Yan and Zhi-He Guan, and the complete text in English as well as the Chinese translation.

HONEY BEE PATHOLOGY

A new book by L. Bailey, Honey Bee Pathology, published by Academic Press Inc. 1982, 130 pp., \$26.50 US. ISBN: 0-12-073480-X.

Dr. Bailey has provided a comprehensive account of all the important and common pathogens and diseases of this interesting and frequently misunderstood insect. Beekeepers and agricultural entomologists will find this book indispensable. The first volume in the English language to be devoted entirely to honey bee pathology, it will not only provide a valuable reference, but will also, by bringing the honey bee into the common fold of insect pathology, promote a dynamic and productive approach to honey bee pathology in the future. Invertebrate pathologists, entomologists in general, microbiologists, virologists, ecologists, and indeed anyone with a general grounding in biology will find much that is of interest.

Contents include: The Honey Bee, Viruses, Bacteria, Fungi, Protozoa, Parasitic Mites, Insect and Nematode Parasites, Disorders of Uncertain Origin and Non-infectious Diseases, The Treatment of Bee Diseases.

COLOR SLIDE ATLAS OF INVERTEBRATE PATHOLOGY

The Society for Invertebrate Pathology is offering a teaching slide set consisting of 200 2X2 color transparencies of invertebrate pathogens and diseases. The Atlas is arranged into five subject categories: Bacteria, Viruses, Fungi, Protozoa, and Nematodes. Some of the topics illustrated include pathogen life stages, gross pathology, histopathology, cultures, host response, and symptomatology. The slides are numbered, collated, and come with a complete syllabus. Each set is \$40 (U.S.) and is shipped postage paid. Overseas orders should add \$5 for airmail delivery. Make check or money order payable to the Society for Invertebrate Pathology. Orders should be submitted to: Randy Gaugler, Department of Entomology, P.O. Box 231, Rutgers University, New Brunswick, N.J. 08903.

FIRST INTERNATIONAL COLLOQUIUM ON
PATHOLOGY OF REPTILES AND AMPHIBIANS

These Proceedings, edited by C. Vago and G. Matz contain 50 contributions by international authorities on pathology of reptiles and amphibians. Major sections are: 1. Physiopathology, microbial and parasitic diseases; 2. Tumours and lesions of the integument; 3. Developmental abnormalities. These Proceedings (only 300 copies were printed) are dated 1983 but were printed until July 1984. For orders contact - Presses de l'Universite d'ANGERS, Bibliotheque Universitaire, Boulevard Lavoisier, 49045 ANGERS Cedex, France.

POSITION ANNOUNCEMENT
MARINE INVERTEBRATE IN VITRO SYSTEMS

A post-doctoral position (one year with possible renewal for additional year) is available at the Center for Marine Disease Control, Marine Research Laboratory, Battelle Northwest, Sequim, Washington. The successful candidate will be expected to conduct research programs to develop methods to initiate and characterize cell, tissue and organ cultures (primary and potentially continuous cultures) from selected marine invertebrate species. Applicants should possess demonstrated technical background and research aptitude in biochemistry, invertebrate physiology, and experience in cell and/or tissue culture. Applicants must possess U.S. citizenship.

Applicants should forward resume, technical reprints and statement of pertinent experience and objectives to: Dr. Ralph Elston, Center for Marine Disease Control, Battelle Marine Research Laboratory, 439 W. Sequim Bay Road, Sequim, WA 98382. The position is expected to be filled prior to July 1, 1985.

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OBITUARIES

Oleg Lysenko - (1931 - 1985)

It was a warm August day. It was a Friday. It was 1958. The First International Conference for Insect Pathology and Biological Control was to convene the following Monday. As one of the two Americans in Prague to participate in the Conference I was negotiating the 500 meters from the Hotel International to the structure housing the Institute of Entomology and the Insect Pathology Laboratory. Enroute I encountered Jaroslav Weiser accompanied by a smiling young man who had recently completed the doctorate and had entered the Insect Pathology Laboratory as a bacteriologist. I had a new friend who was enthusiastic and optimistic. It was my good luck that I accompanied Oleg Lysenko and Dr. Weiser to lunch in the canteen which served the personnel of the institutes of the Academy of Sciences. During my annual and biennial visits for the next 27 years, and visits of other persons in invertebrate pathology from throughout the world, lunch of soup and dumplings with Oleg was one of the events of the day, often in the company of his professional colleagues and research associates.

Maybe you were one of the fortunate to have your first walking and tram tour of Prague in the company of Dr. Lysenko. If you were without tram tickets, Oleg had the supply. In his incredible memory were the tram routes for Prague, and alternative public transport to assure your safe and rapid return to your hotel from a remote corner of the city. Ancient and modern history, folklore, and the stories of the consequences of the multicultural impact on his Motherland were some of his specialities.

Oleg was in attendance regularly, yet infrequently at International conferences of microbiology and insect pathology in eastern countries, Europe and North America. The results were productive collaboration with peers for investigations of bacteria associated with invertebrates, particularly insects. His intellectual and moral support in cooperative projects were evident in the socialist countries, the balance of Europe, the United Kingdom, Canada, and the United States. He applied his scholarship to continued service in the development of systems for increasing the accuracy of identification of bacteria. As a result of his efforts, Dr. Lysenko achieved a conspicuous position early in his career as a insect bacteriologist, systemist, and pathophysiologist, and provided leadership until his death on February 14, 1985. Dr. Lysenko was also a charter member of the Society for Invertebrate Pathology.

A principle service to insect pathology was the establishment and maintenance of the Culture Collection of entomogen-

ous bacteria in the insect pathology facilities of the Entomology Institute. The CCEB is a resource for science for which the Czechoslovak Academie of Sciences and the Institute of Entomology can be proud. The CCEB continues to be a significant international resource for invertebrate pathology. The maintenance and use of the CCEB in continuing the expansion of investigations of bacteria affecting invertebrates will be an appropriate working recognition of, and memorial for Dr. Lysenko. He published a biennial catalog of available isolates from the CCEB. His efforts were recently completed to develop the identification matrices for estimating the probability of identification of unknowns. The utility of the matrix principle is applicable to identification of other pathogens, e.g. the microsporidia protozoa. Originally, early in the 1960's Oleg used a manually operated punched card system. Within the past 5 years the system had been modified to be facilitated using a hand held programmable calculator (Hewlett Packard HP41-C). In collaboration with computer programmers, Dr. Lysenko has provided the basis for programs utilizing institutional computer resources affiliated with the Entomology Institute to further refine the identification systems. Within the latter months of 1984 and early 1985, partial support of the World Health Organization Special Programme provided a microcomputer system to be dedicated to use in computer assisted identification systems.

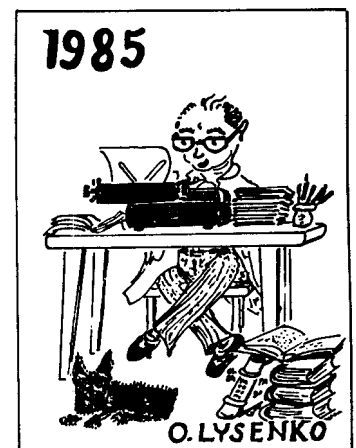
His death interrupts the development of identification matrices tailored to the invertebrate pathology needs. The essential loss is the motivation which characterized the effective scholarship of Oleg Lysenko.

At the time of his death an Annual Review was in press on the subject of bacteria, particularly non-spore forming bacteria, associated with insects. Further, a textbook of microbiology was near completion. It is expected that his colleagues and associates internationally will assume the responsibilities for the completion of this difficult task. The Institute of Entomology is scheduled to move to Budejovice in 1985. Dr. Lysenko had elected to transfer to the Institute of Microbiology and remain in Prague.

In addition to the extended family of friends, who shared on many occasions the country "cottage" with the children, grandchildren, canines and felines characteristic of the Lysenko clan, he is survived by his wife Alena, daughter Kathy, and son Ivan. Both children have assured the continuation of the Lysenko line with an array of grandchildren.

The card celebrating the new year will be missed. It was designed, executed, and annually revised by Oleg. It was a unique means to maintain those essential lines of communication with an international community. Pleasant memories were released with its seasonal receipt. Particularly recollected are Oleg's insatiable curiosity about new ideas and material items, and critical evaluation for their use to make all life more interesting; and he was a collector. Included were those items to maintain the operation of his laboratory, keyrings, bolo ties, the apparatus for improving the skill of fishermen (particularly his own skill), Agatha Christie mysteries, and the essential items to maintain the operation of his beloved VW bug.

Evidence suggests that there must be a grand plan in the universe for bacteriology and invertebrates. St. Peter has a challenge to meet the needs and tame the discussions



WITH ALL BEST WISHES

for Oleg

of the trio of Edward Steinhaus, Arthur Heimpel, and Oleg Lysenko.

John Briggs.

I have sad news for the community of insect pathologists. Our colleague and friend, Dr. Oleg Lysenko died on February 14, 1985 in Prague after a short illness. He graduated from the Biology Faculty of Charles University, Prague and was a member of the staff of the Department of Insect Pathology from 1954. He specialized from the beginning in microbial taxonomy and organized a collection of entomogenous bacteria (later CCEB) which was from its conception a depository for all new strains isolated and used in insect pathology and control. A series of his studies dealt with non-sporeforming bacteria as agents of septicemia in insects. His taxonomic study of Pseudomonadaceae produced a comprehensive study of their taxonomy, biochemistry and entomopathogenicity. These investigations led him to studies of their toxins and toxins of other bacteria (*Serratia*) and the interaction of these factors with host hemolymph. During the latter years he prepared the system of numerical taxonomy of entomogenous bacteria and computerized identification of new isolates.

More than 100 papers bear his name as author and co-author. From the beginning he was connected with all activities of insect and invertebrate pathologists, the first meeting in Prague in 1958, the founding of SIP and its Journal. He was a member of taxonomic commissions of International Congresses of Microbiology and participated in international projects with many colleagues as part of the WHO Collaborating Centre for Vector Pathology and in the permanent committee for microbial control of the International Organization for Biological Control, East Palaearctic.

His broad array of cooperations and his deep humanity together with the quality of his research and dedication to science gained him wide recognition and friendship throughout the international community of insect microbiologists.

Jaroslav Weiser

In Memorium - Edward I. Hazard (1935-1985)

As close friends and colleagues of Edward I. Hazard for the past 15 or so years, it is with deep regret that we report his death on April 8, 1985 of a heart attack in Lake Charles, Louisiana. Ed was born in Wilmington, Ohio on March 14, 1935. He graduated from Wilmington High School in 1953 after having been a student in the Capital Page School in Washington, D.C. where he was a page for the U.S. House of Representatives from 1950 to 1952. He received a B.S. in Biology from Wilmington College in 1957 and a M.S. in Entomology from Ohio State University in 1960. After an additional year of graduate study at O.S.U., Ed joined the U.S. Forest Service as a Research Entomologist in 1961. However, his career as a microsporidiologist and medical entomologist really began in 1963 when he joined the staff of the USDA Insects Affecting Man and Animal Laboratory at Gainesville, Florida. After joining the USDA, Ed undertook further graduate study under Dr. Jaroslav Weiser at the Czechoslovakian Academy of Sciences in Prague during 1966 and 1969. His graduate research dealt with the life cycles and systematics of microsporidia of the family Thelohaniidae, and although Ed never completed the formal requirements for the Ph.D. degree, the research intended for his dissertation was published in a series of pioneering papers in 1974 and 1975. During his tenure at the Gainesville lab from 1963 to 1981, Ed also published a number of other

significant revisions and descriptions of microsporidia from mosquitoes and other invertebrates. Additionally, he amassed a large collection of slides and specimens of hundreds of species of microsporidia and other pathogens from various groups of invertebrates. In 1981 Ed moved to Lake Charles, LA to become Research Leader of the USDA Gulf Coast Mosquito Research Laboratory.

At the Lake Charles laboratory Ed developed a research unit devoted primarily to the study of microsporidia of aquatic invertebrates. Under his direction, this laboratory was achieving international acclaim for their contributions to microsporidiology at the time of Ed's death. Much of this work by Ed and his colleagues was highlighted in the Presidential Address by one of us at the 17th Annual Meeting of the SIP at Davis, CA in August, 1984 (SIP Newsletter, Vol. 16(3) Sept. 1984). Two of several papers which are currently in press deal with such new microsporidian phenomena as gametogenesis and heteroecism (the latter in cooperation with A. W. Sweeney and M. F. Graham, colleagues from Australia). Hopefully, this important research program will continue through the efforts of Mr. Jimmy Becnel and Mr. Tokuo Fukuda, who are attempting to complete a number of other manuscripts on microsporidian morphogenesis and sexuality and the life histories of several species of polymorphic microsporidia of mosquitoes. Those of us who had the pleasure of visiting with Ed in Louisiana could not help but be impressed with the remarkable wealth of material pertaining to the microsporidia that resides in this laboratory. Bringing the research that Ed initiated to fruition through study of this important collection that he developed will likely result in many more significant contributions to our knowledge of the microsporidia.

On a more personal note, many of Ed's best friends were colleagues who shared his deep interest and commitment to the study of microsporidia and invertebrate pathology. Ed was a warm, generous, and self-effacing person always willing to aid newcomers to the field. His enthusiasm for the study of microsporidia was contagious and he was a stimulating influence on many established as well as new investigators. Ed made many friends throughout the world, either as a result of their having studied with him in Florida and Louisiana or as a result of several trips he made to other countries to study their microsporidian fauna. While he seldom sought the spotlight of attention, one could always find him surrounded by colleagues and friends at our annual meetings as they eagerly sought his advice or shared their mutual interest in the microsporidia over the spirits of George Dickel.

Ed is survived by his son, Allen, his mother, Elizabeth, and his special friend, Jana. He will be greatly missed by his family and his many friends and colleagues throughout the world.

W. M. Brooks
B. A. Federici

