



NEWSLETTER

society for invertebrate pathology

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November 1994

MONTPELLIER HOSTS OVER 600 PARTICIPANTS

The VIth International Colloquium on Invertebrate Pathology and Microbial Control in conjunction with the 27th SIP Annual Meeting and the 2nd International Conference on *Bacillus thuringiensis* was held at Le Corum in Montpellier, France, August 28 to September 2, 1994. More than 600 persons from 55 countries attended, including 110 students and over 90 companions.

The scientific program comprised five morning plenary sessions held in the main auditorium. A total of 19 symposia focusing on different aspects of invertebrate pathology and microbial control followed the plenary sessions. Twenty-six concurrent contributed paper sessions were organized. The scientific program was completed by a workshop on Application Technology of Microbial Control sponsored by the Microbial Control Division and a workshop on Cellular and Molecular Biology of Microsporidia in Cell Culture sponsored by the Microsporidia Division.

There were 459 papers presented including 20 Plenary session papers, 102 Symposium papers, 10 Workshop papers, 166 contributed papers and 161 Posters. Proceedings and Abstracts, printed as two volumes, were provided to the registrants at the meeting. Information on ordering these will be published in the next Newsletter.

Student Awards: There were 26 oral presentations (contributed papers) and 42 poster presentations considered for the student presentation contest. The Student Contest Committee consisting of Jim Harper (Chair), Chris Payne, Jurg Huber, Wayne Brooks, Norman Crook, David Ellar, Ralph Ellers, Eva Franken, Peter Krell, Marnix Peferoen and Paul Scotti selected the winners.

Poster Presentations:

First place: Gert B. Jensen of the National Institute of Occupational Health, Department of Toxicology and Biology, Copenhagen, Denmark for the poster entitled "The genetic basis of the aggregation system in *B. thuringiensis* subsp. *israelensis* is located on a large plasmid." Co-authors were Hanneh Bendixen, Andrea Wilcks and Susanne S. Petersen.

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Deadline for the next Newsletter is January 15, 1995.

Don't Forget to Pay Your 1995 Dues

Dues notices for 1995 were mailed out by FASEB this Fall. To ensure that your membership remains current and that you continue receiving the Newsletter, please don't forget to return your notice with payment before the end of the year. **The next issue of the Newsletter will be sent only to paid up members.** Lapsed memberships require further action which only ends up costing the Society needlessly. Also please make a special effort to contribute to the Endowment Fund. If you haven't yet received your 1995 notice or have misplaced it, please contact FASEB as soon as possible .

The Editor

Second place: Lidia M. Fiuza of CIRAD-BIOTROP, Montpellier, France for the poster entitled "Binding of δ -endotoxin from *Bacillus thuringiensis* to the midgut brush border of the striped stem borer (*Chilo suppressalis*)." Co-authors were N. Michaux-Ferriere, R. Frutos, A. Boets and J. Van Rie.

Oral presentations:

First place: Karen Girard of the Department of Biology, School of Biological Sciences, Southampton, United Kingdom for the paper entitled "Species specific resistance in aphids to infection by *Verticillium lecanii*." Co-author was Christopher W. Jackson.

Second place: Jacqueline Scheepmaker of DLO-Research Institute for Plant Protection, Wageningen, The Netherlands for the paper entitled "The use of nematodes to control the mushroom sciarid (*Lycoriella auripila*) and the mushroom phorid (*Megasella halterata*)." Co-authors were F.P. Geels and Peter H. Smits.

Social Events: The meetings started with a mixer sponsored by the City of Montpellier on Sunday, 28 August. Following this warm (actually very warm!!) welcoming party, an excursion took place on Wednesday to the medieval city of Aigues-Mortes, the Roman coliseum at Nimes and to Pont du Gard where the 5-K race took place. Over 550 members and their companions attended the excursion and enjoyed medieval architecture, engine breakdowns, Roman monuments, a Mediterranean summer storm, scenery and a picnic in a local gymnasium. Miraculously, no one fell off the Pont! The social program ended with an extravaganza at the Abbey of Valmagne, 30 km west of Montpellier where over 600 members and companions attended the Renaissance-style banquet in the 13th - 14th century abbey. This event will not be soon forgotten by those who attended.

5-K Race Winners: The traditional 5-K race took place at the Pont du Gard; 69 members participated in the race. Winners were:

Rob Vantol (men under 40)
Anthony Barker (men above 40)
Alan Cameron (men walker)
Susanne Vestergaard (women)
Peggy Andreadis (women walker)

The complete results will be published in the next newsletter.

SIP NEWSLETTER

Published by the Society for Invertebrate Pathology

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Submissions to the following sections are solicited:

Forum: More substantial articles on current issues of concern, limited to approximately five pages.

Letters to the Editor: Issues of concern can be brought up here.

Microbial Control News: Information on new discoveries, "News Releases", formation of companies etc. pertaining to microbial control.

We also depend on our members to supply us with information for the following sections: **Obituaries, Member News (Retirements, Awards, Promotions), Members on the Move (New addresses), Positions Available/Wanted, Meeting and Workshop Announcements, and other News Items.**

Send all submissions directly to the Editor in Lethbridge. Submissions via EMail or on computer disk (WP or ASCII) make our lives much easier and save on costs. Please include a hard copy of any text sent via computer disk.

Deadline for the next Newsletter is January 15, 1995



5-K Race at Pont du Gard

The meetings were supported by donations from the following:

Public donors

District of Montpellier
Gard General Council
INRA
Languedoc-Roussillon Regional Council
University of Montpellier

Private donors

Abbott Laboratories
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EcoScience Laboratories Inc.
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Entotech Inc.
Mycogen Corp.
Proteine Performance
Sandoz Crop Protection

Appreciation is extended to our sponsors, to the members of our Program and Local Arrangements Committees and to the many volunteers who made the meetings such a success.

Roger Frutos,
For the Organizing Committee

**1995 ANNUAL MEETING, CORNELL UNIVERSITY
ITHACA, NEW YORK, JULY 16-21, 1995**

The 28th Annual Meeting of the Society for Invertebrate Pathology in 1995 will be hosted by the Boyce Thompson Institute, USDA's Agricultural Research Service, and Cornell University in Ithaca, New York. The meetings will take place on the Cornell University campus. Arrangements have been made for housing in townhouses and dormitories on the Cornell campus. Several hotels will also service the conference.

Ithaca is located at the southern tip of Cayuga Lake in the center of New York State. The city is serviced by a newly constructed airport (USAir and Continental). Air service is also conveniently available through Syracuse, NY, a one-hour drive through a beautiful region.

Ithaca is a popular resort area with many unique attractions. Within 5 miles of campus are four state parks. Ithaca is famous for its various gorges and falls, one of which is taller than Niagara Falls. The parks contain more than a hundred miles of hiking trails. Cayuga Lake provides a wonderful opportunity for boating and fishing. Ithaca is a cultural center for central New York providing a wide variety of events throughout the summer.

The banquet will be held at the Lake Watch Inn (previously the North Forty) which catered the banquet in 1983. The banquet dinner will feature an invertebrate theme. Vertebrate specials will also be available. Musical entertainment, dancing and suitable libations (even martinis for Terry) will follow the dinner.

The scientific program will feature plenary sessions, symposia, contributed papers, poster sessions, and evening workshops. Ideas for symposia and workshops should be submitted as soon as possible. Comfortable meeting rooms have been reserved within the Cornell School of Veterinary Medicine, and both Boyce Thompson Institute and the USDA ARS laboratories are just across the street.

Stay tuned for full details in the next two Newsletters. We look forward to hosting you all in Ithaca! (Answer to the quiz in the last issue: The Roman numeral for the last meeting held in Ithaca in 1983 was XVI.)

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**MINUTES OF 1994 BUSINESS MEETINGS
Le CORUM CONFERENCE CENTRE
MONTPELLIER, FRANCE**

Minutes of the 27th Annual SIP Business Meeting

The 27th Annual Business Meeting was called to order by President Chris Payne at 2:08 p.m. on September 1, 1994. Dr. Payne began the meeting by thanking the Local Organizers for their dedicated efforts to organize a scientifically stimulating and well organized meeting. It was noted that good organization was especially important this year due to this also being an International Colloquium on Invertebrate Pathology in conjunction with the Second International Conference on *Bacillus thuringiensis*. Dr. Payne also thanked industrial and local French governmental sponsors that contributed to the meeting.

The minutes of the 26th Annual Meeting in Asheville, North Carolina were accepted (motion by Dr. A. Wood and seconded by Dr. B. Davidson).

The only issue arising from the last business meeting was consideration as to whether deceased members are eligible for Honorary Membership in the Society. This issue will be referred to Council.

C. Payne delivered the President's Report highlighting several issues. Firstly, Chris summarized the results of the election of new officers to Council and reported that the Teller's Committee (C. Payne, T. Butt and N. Crook) had completed their duties. Secondly, Chris reviewed progress made during the last two years, including: strengthening the financial status of the Society (all remaining money from the Asheville, Heidelberg and Veldhoven meetings has been received by the SIP Treasurer); strengthening the links between applied and classical studies in invertebrate pathology and studies employing modern biological techniques, i.e. molecular biology (one example of this was the choice of Dr. Lois Miller as this year's Founders Lecturer); and a truly excellent SIP Newsletter, thanks to the efforts of the Editors, M. Goettel and B. Davidson.

Dr. Max Bergoin, Chairman of the Local Arrangements Committee, reported that 575 participants were registered (at the start of the meeting) from 55 countries. The excellent attendance was linked to good publicity for the Meeting. Dr. Bergoin thanked the Executive Committee for their tremendous assistance to organize this truly international meeting. Max reported that the meeting would cost approximately 1 million French Francs (just under \$200,000) and that registration fees, seed money provided by Council and contributions from both industry and local regional groups should be sufficient to cover costs. The scientific program included 5 Plenary (19 papers), 19 Symposia (102 papers), 26 contributed Paper sessions (183 papers) and 155 Posters for which a total of 453 proceedings and abstracts were received. Max also reviewed the comprehensive social program, including the many optional tours and the mixer, Wednesday afternoon tour, 5K race and BBQ and banquet included as part of the registration package.

Dr. Alan Wood reported on the local SIP Meeting to be held from July 16-21, 1995 on the Cornell University Campus and at the Boyce Thompson Institute in Ithaca, New York. Dr. Wood will serve as Local Arrangements Committee Chairman while Dr. John Vandenberg will be the Chair of the Local Program Committee. Dr. Wood indicated that first rate facilities are available with excellent audiovisual capabilities in the north end of the Cornell Campus. It is a very scenic area with many parks and fine restaurants. Student housing, including dormitories and townhouses, will also be available as well as numerous local hotels and motels for accommodations.

The 1996 SIP Meeting will be held in Segovia, Spain, about 80 Km northeast of Madrid from September 1-7. Dr. Candido Santiago-Alvarez will be the Local Arrangements Committee Chairman. Dr. Alvarez pointed out that this site was selected due to cooler temperatures during the summer period than in Madrid or other Spanish locations. Dr. Alvarez noted that 1 auditorium with a capacity of 350 people and 5-6 smaller rooms holding 80-100 participants were available. Costs should be low in Segovia which is a historic town still harboring Roman ruins. Dr. Alvarez pointed out other historic sites in Segovia and indicated that numerous good restaurants and hotels were available for meeting participants.

The 1997 SIP Meeting will be held in Banff, Alberta, Canada, while Council has now approved the site for the 1998 VII International Colloquium on Invertebrate Pathology as Sapporo, Japan.

Dr. H. Kaya in his Treasurer's Report indicated that Council in 1993 voted to change the fiscal year in order that a complete financial statement would be available at future Annual SIP Executive Council Meetings. The old fiscal year was from August 1 to July 31 of the following year. The new fiscal year will run from May 1 in a given year to April 30 of the following year. As of April 30, 1994, Dr. Kaya reported that assets were \$118,282, including general Society Operating funds (ca. \$106,000) and funds in Divisions of Microsporidia and Microbial Control and Endowment Fund. Money was also returned from several previous meetings strengthening our financial position. Funds returned included \$18,398 from the Veldhoven Meeting, \$10,504 from the Heidelberg Meeting and \$18,343 from the Asheville Meeting, totalling \$47,245 of added revenue to our general operating funds. Sales from abstracts and proceedings of the Adelaide Meeting of about \$1,000 should also be returned in the next fiscal year. Dr. Kaya indicated that operating expenses were \$22,574 in 1993/1994 while revenues exceeded \$73,000, due primarily to the return of money from previous meetings (see above) and the sales of slide atlases. The proposed budget for the 1994-1995 fiscal year is expected to lead to a deficit of over \$20,000 due to high costs for proceedings and abstracts and increased costs for FASEB mailing and postage and the need to provide seed money for future meetings. The current registration fees are still \$ 30 full members and \$ 15 student members and will not be raised this year. Harry pleaded for members to pay dues upon receipt of first notice mailed in September/October to save the Society mailing charges.

Dr. M. Klein, Chairman, reported that the Microbial Control Division met on Tuesday evening (August 30th). Attendance was low due to four concurrent sessions at this time. A new subcommittee, chaired by J. Siegel, on Safety of Microbial Control Agents was formed. Only 50 copies of the slide atlas remain. Hugh Evans was elected as the new Member-at-Large. The Division has ca. \$5,000 in its account. The Division Report can be found following this report.

Dr. Leah Bauer, Secretary, provided a short Microsporidia Division Report, since the Division's Business Meeting only took place following the General Business Meeting. Apologies were made that A. Cali, Division Chair could not be present at this meeting. The Division Report can be found following this report.

Dr. Anne Hajek will organize a new slide set sponsored by the Society, that will be sold to the membership. It will be on general Invertebrate Pathology.

Dr. W. Gelernter of the Membership Committee reported that there were 834 paid members compared to 727 last year. This represents an approximate increase of 15% in the membership, the majority coming from Western Europe, the Middle East and Latin America. Approximately 45% of the membership is from outside North America and members come from 52 different countries. Membership forms are presently provided in four different languages. The membership list was sent out with the last Newsletter.

Dr. Mark Goettel reported that 122 pages, including 5 supplements in three (3) Newsletter issues were published since the last Meeting. Mark requested that E-mail address changes be sent to him. The Newsletter cost about \$ 12 per member.

Reports from both the Founders Lecture, Dr. R. Daoust Committee Chair, and Endowment Committee, Dr. G. Soares, Chair, were accepted by Dr. Payne as submitted and not presented here due to limitations on time. A copy of this report can be obtained from Chairpersons. (Editor's note: these reports can be found on pages 12 & 16 in this newsletter.)

In other business, Ole Skovmand pointed out that the *Bt. kurstaki* standard is no longer available. Dr. Skovmand also indicated that a strong Bt contingent from Wuhan, China proposed that the next International Bt Conference be held there (1996). The 1996 SIP Meeting will be in Segovia, Spain. This issue generated considerable discussion with Drs. Federici, Crook, Burges and others recommending that the III International Conference on *Bacillus thuringiensis* be held jointly with the SIP Annual Meeting in Segovia, Spain as was the case with the II Conference in Montpellier.

Dr. D. Burges made the suggestion that the last day of future Meetings (Fridays) be extended to a full-day due to the number of concurrent sessions. Many members supported this proposal, but some were concerned it could disrupt travel schedules for participants coming from distant locations. Regarding the issue of a Btk standard, Dr. Burges suggested that the standard must either be dropped or standards should be produced for all commercially-available serotypes. A motion was made that this issue be referred to the Microbial Control Division.

Several future meetings were announced including the IOBC Working Group on Biological Control the 2nd to 3rd weeks of September in Europe (contact P. Smits, the Netherlands) and the COST 8119 Workshop in May 1995 on application technology for entomopathogenic nematodes

in Italy (contact R. Ehlers, Germany). Dr. Ehlers pointed out that this working group's proposal for funding by the European Union for 5 more years was accepted.

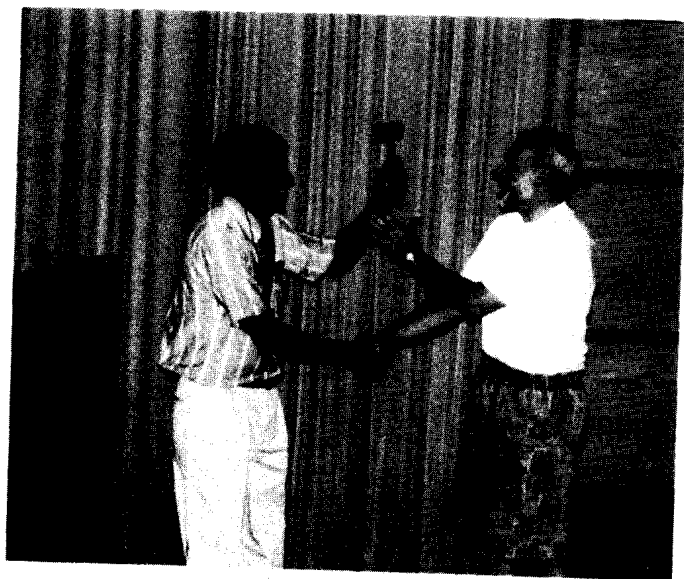
Several individuals raised the concern that the abstracts of future meetings should be mailed to the membership prior to the meeting. Dr. Goettel indicated that abstracts are normally sent in the June Newsletter and this will probably be done in 1995. N. Crook raised the concern that mailing out abstracts prior to the meeting would mean abstracts would need to be sent in earlier.

President C. Payne executed the transfer of power to the newly elected Officers of the Society. Dr. R. Granados took over as President. Dr. Payne also thanked outgoing officers; Dr. B. Davidson, past-president; Dr. R. Daoust, Secretary; and Drs. T. Iizuka and G. Soares, Trustees.

Dr. R. Granados commented on numerous items including his excitement about the newly elected Council members and the good increase in membership, especially from outside North America. As President, he will work to include more non-U.S. members in committees and will put a column in upcoming Newsletters. He will also work on By-Law revisions, a new membership drive and will set up a Strategic Management Committee, that Dr. L. Lacey will chair.

A motion to close the Meeting at 3:25 p.m. was made by Dr. Burges and seconded by J. Cunningham.

Respectfully submitted by R.A. Daoust, Secretary



Bob Granados takes control of the gavel from Chris Payne



SIP Council Members Change at Montpellier

From left to right: Outgoing Past-President, Betty Davidson; Incoming Trustee, Mark Goettel; Outgoing President, Chris Payne; Incoming President, Bob Granados; Outgoing Secretary, Richard Daoust; Treasurer, Harry Kaya; Incoming Secretary, Wendy Gelernter; Incoming Vice-President, Brian Federici; Outgoing Trustee, Toshi Iizuka; Incoming Trustee, Isabelle Thiery; Trustee, Lerry Lacey (Missing are Outgoing Trustee, George Soares and Trustee, Robert Anderson).

Minutes of the Division on Microsporidia Business Meeting



The meeting was called to order by Vice-chair Tim Kurtti on 1 September 1994.

Old Business: The Vice-chair solicited any old business from the meeting participants.

The balance of Division accounts, as reported by Harry Kaya, at the SIP Business Meeting is \$568.

Al Undeen requested recipients of "Methods in Microsporidiology" review and return his first draft as soon as possible since a second draft is now almost complete, and only one review was returned. The manual is planned for completion for the S-240 Southern Biocontrol Workshop in 1995.

New Business: Vice-chair Kurtti, initiating the first agenda item on new officers, nominated Lee Solter to serve as Vice-chair. This nomination was seconded by Undeen, and

approved with consent by those present. In addition, Leah Bauer agreed to serve as secretary for another year.

Discussion then focused on a possible workshop topic for the 1995 SIP Annual Meeting in Ithaca. Jaroslav Weiser suggested the need for discussion on evidence of speciation, type specimen materials and sites of deposition. Liz Canning added that minimal requirements for genera descriptions should be defined as well. Wayne Brooks noted that John Vandenberg, SIP Program Chair, requested the Division sponsor a Symposium for the 1995 Meeting in Ithaca. Ted Andreadis suggested the impact of microsporidia on host population dynamics, perhaps divided into various systems: agricultural, aquatic, forestry, stored grain. Brooks recommended we include all protozoans. The Vice-chair recommended that Solter, as new vice-chair, should continue the planning for a workshop and a symposium.

Louise Malone announced a post-doctoral position in her laboratory, and the secretary agreed to forward the announcement for publication in the next Newsletter.

The meeting was adjourned by Vice-chair Kurtti.

Respectfully submitted by Leah S. Bauer, Secretary

Minutes of the Division on Microbial Control Business Meeting

The meeting was opened at 7:40 p.m. on August 30 by President Klein. Approximately 25 members were in attendance. The minutes were read by Secretary Vandenberg and accepted by the membership. The annual report was summarized. We have 380 members, up 30 from last year.

Mark Goettel reported on the Safety Subcommittee. Fifteen people met in Asheville; it was decided that no position paper on safety issues would be developed. Instead, the focus of a topic for this year's meeting was narrowed and the 'Safety of Exotic Fungi' symposium resulted. Goettel proposed the Division convene a standing committee on safety. Discussion of this issue followed, including topics on the scope of the proposed committee, linking the committee to activities of regulatory agencies, and distribution of safety information through the SIP newsletter. President Klein will solicit interest in the committee through this newsletter. A motion to establish a Safety Working Group, define its mission in writing, and distribute that to the SIP Executive Committee was passed.

Joel Siegel expressed interest in helping organize the group and in defining its mission. Input may be sent directly to him.

Secretary Vandenberg gave an update on the Division Slide Set. A total of 42 sets have been sold within the past year. Since only about 50 slide sets remain, and orders continue to trickle in, it was decided not to advertise further. There remain only 9 complete copies of original and supplements of the Directory of Industries involved in microbial control. There are no further plans to reproduce these when the supply is exhausted.

The Division's Workshop and Symposium at the 1994 meeting were discussed. Both were well attended, but it was noted that since so few were present at the business meeting, it might be useful to combine the business meeting with a workshop, as was done in 1993. Ideas for Division-sponsored workshops and symposia for 1995 were discussed. Ideas will be forwarded to the 1995 program chair.

Suggestions were solicited by President Klein on the use of Division funds. Various ideas were discussed but no decisions were made. Joel Siegel gave an update on recent articles on Bt safety. The articles implied that Bt is not as safe as many members probably feel it is. Information requests on these articles and suggested responses should be directed to Joel Siegel.

A vacant slot for at-large member resulted in two nominations, Lerry Lacey and Hugh Evans. After discussion, Hugh Evans was elected. Names of possible Founders' Award nominees and lecturers were discussed. A motion to suggest two different names to the SIP Founders' Award Committee was passed.

The meeting adjourned at 9:05 p.m.

John D. Vandenberg
Secretary/Treasurer

EDITORIAL

Is SIP Truly an International Organization?

Mark Goettel
Newsletter Editor

In several of this year's annual reports, (published herein) the matter of the international nature of our organization is

brought to our attention. The Membership Committee reports that "We remain a truly international society with members from 52 countries, and with over 45% of the membership outside North America." Most significant increases in membership were seen from countries outside of North America. However, a Society's nature is not only reflected by the composition of its membership, but also by the composition of its elected representatives. The President reports "I received from several quarters some expressions of concern regarding the international character of the Society..." Some of the concern is "about the 'All American' composition of the next squad," i.e. the nominees for Council. In fact, 3 of the 4 nominations for trustees were non-North American. Nevertheless, one cannot dispute the "North American" predominance on Council during the life of the Society (for a history of the Society and a complete listing of the past Officers, see Betty Davidson's article "Historically Speaking" published in Vol. 26, No. 2 of the Newsletter). In his report, the President reminds Council that "the Society is indeed international and should seek to reflect in its executive an appropriate spread of international interests."

The Nominating Committee is charged with the responsibility to nominate suitable candidates willing to stand for election. A Nominating Committee is appointed by the President. It consists of a Chairperson and two or more members and the immediate Past President. As the Chairperson of the past Nominating Committee points out in his annual report, "The nomination of candidates for office in our Society raises many delicate issues which must be managed with sensitivity and wisdom." Several members of past Nominating Committees have informed me that one of the most difficult tasks the Committee has is to find nominees who are willing to serve. They assure me that they try to ensure that nominees reflect not only our international, but also our interdisciplinary nature. Not an easy task! But then of course, one way to help the Nominating Committee is to make it known to them that you are willing to serve your Society. I'm sure it would be much appreciated.

It seems that our founding members envisioned the difficulties that could arise as our Society grew. In our Constitution they enshrined the provision for the establishment of "Branches." Article VI, Section 2 of our Constitution states "Branches may be established on the basis of geographic contiguity for the purpose of holding meetings, presenting papers, conducting conferences, and stimulating interest in invertebrate pathology." Would establishment of Branches help the international character of our Society? It would certainly help the Society grow in

countries with a large population of non-English speaking scientists. Is it time to establish a Brazilian Branch, for instance? Letters to the Editor are welcomed.

ANNUAL REPORTS

Presidents's Report, 1994

During the year I kept in touch with the organisers of the Montpellier Colloquium. They must be congratulated for their success in attracting a large number of registrants and we look forward to a stimulating scientific and social programme of events over the next week.

I organized the Ballot for SIP Officers and Honorary Members and chaired the tellers committee which included Norman Crook and Tariq Butt. One issue arose during the nomination and ballot procedures. I received from several quarters some expressions of concern regarding the international character of the Society, that can best be expressed by quoting from a letter that I received from a European member: "Recently, I received the SIP Newsletter with the nominations for Society for Invertebrate Pathology offices for the next two years. I think we should be all very happy that so many busy colleagues find it important enough to serve as officers in the Society. They are all excellent and fine individuals, paying service to the Society in many capacities in the past. However, I would voice some (small) concern about the 'All American' composition of the next squad. I think it very important to maintain the international character of our Society. This objective is well served if this international character is reflected in the Executive Committee of the Society. I do not know how the nomination procedure is, but there could be a stronger strive to maintain an international spread throughout the Society."

I think that this is a timely reminder to Council that the Society is indeed international and should seek to reflect in its executive an appropriate spread of international interests. The large number of scientists who have registered to attend the Montpellier Colloquium points to the strong base of interest in Invertebrate Pathology/Microbial Control within Europe. However, I suspect that SIP membership in Europe is not as strong as it should be and there may be further scope during and after the Montpellier meeting to attract new members.

A second item that I would like to draw to the Council's attention following the Ballots is the delightful letter that I

received from Mauro Martignoni following his election as an Honorary Member (Editors note: see page 32). I feel that it sums up all that is good about the Society and the area of science that the Society covers.

Other issues that arose during the year included the provision of expenses to the Founders lecturer. I would like to recommend that the Council approve the future provision of reasonable travel expenses in addition to the lecturer's fee of \$500 and a waived registration fee. For the 1994 lecturer, Lois Miller, I took a unilateral decision that she should receive sufficient funds to finance a return economy air fare between the U.S.A. and Montpellier.

During my two years as SIP President, I have been particularly pleased with progress in three areas:

- * The financial position of the Society - this is now on a sounder footing under the careful stewardship of Harry Kaya and following receipt of the surpluses made by conference organisers in Veldhoven, Heidelberg and Asheville.
- * The Society is strengthening its links with 'modern' biology as evidenced by the themes of the Founders Lecture this year and the fact that the Second International Conference on *Bacillus thuringiensis* is part of the Montpellier colloquium.
- * The Newsletter is probably now in better shape than at any time thanks entirely to the efforts of Mark Goettel and Betty Davidson.

Nonetheless, I am very conscious that my own contribution to Society affairs has been seriously inhibited by the demands of my job. I think that there is a useful lesson to be learnt here for the future. An active President in my view is likely to be one who is closer to the science and who has the time to devote to developing the scientific and social base of the Society.

I am most grateful to all members of Council for their support and hard work over the last two years. I would also like to highlight and acknowledge the tremendous efforts made on the Society's behalf by those members who are prepared to take on the responsibilities and hazards of organising our conferences. Without their help, the Society would not be in the shape that it is in today.

Prof. Chris Payne
August, 1994

Treasurer's Report, April 30, 1994

In 1993, Council voted to change the fiscal year so that the complete financial statement would be available at the Annual SIP Executive Council Meeting. The old fiscal year went from August 1 in a given year to July 31 of the following year. The new fiscal year is from May 1 in a given year to April 30 of the following year. This allows Council to have a clear understanding of the financial condition of the Society at the end of a fiscal year (see Exhibit A and B). However, the financial statement does not account for funds spent in the current fiscal year.

<u>SOCIETY FOR INVERTEBRATE PATHOLOGY</u>					<u>EXHIBIT A</u>
<u>BALANCE SHEET</u>					
<u>APRIL 30, 1994</u>					
	<u>Society</u>	<u>Microsporida</u>	<u>Microbial</u>	<u>Endowment</u>	<u>Total</u>
	<u>Operations</u>	<u>Division</u>	<u>Control</u>	<u>Fund</u>	
		<u>Division</u>	<u>Division</u>		
<u>ASSETS</u>					
Cash - Checking Accounts	\$ 94,283	\$ 560	\$ 5,464	\$ 5,375	\$ 105,682
Advances For Future Meetings (Note A)	<u>12,600</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>12,600</u>
Total Assets	<u>\$ 106,883</u>	<u>\$ 560</u>	<u>\$ 5,464</u>	<u>\$ 5,375</u>	<u>\$ 118,282</u>
<u>LIABILITIES AND FUND BALANCE</u>					
Liabilities:					
Accounts Payable	\$ 3,475	\$ -	\$ -	\$ -	\$ 3,475
Total Liabilities	<u>3,475</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>3,475</u>
Fund Balance:					
Fund Balance - Beginning of Year	51,916	388	2,419	5,329	60,052
Current Year Net Income (EXHIBIT B)	51,492	172	3,045	46	54,755
Fund Balance - End of Year	<u>103,408</u>	<u>560</u>	<u>5,464</u>	<u>5,375</u>	<u>114,807</u>
Total Liabilities and Fund Balance	<u>\$ 106,883</u>	<u>\$ 560</u>	<u>\$ 5,464</u>	<u>\$ 5,375</u>	<u>\$ 118,282</u>

SOCIETY FOR INVERTEBRATE PATHOLOGY
STATEMENT OF REVENUE AND EXPENSE
FOR THE PERIOD MAY 1, 1993 THROUGH APRIL 30, 1994

EXHIBIT B

<u>REVENUE</u>	<u>Society Operations</u>	<u>Microsporida Division</u>	<u>Microbial Control Division</u>	<u>Endowment Fund</u>	<u>Total</u>
Slide Sales	-	-	-	-	-
Membership Dues (Note B)	\$ 23,865	\$ -	\$ 2,630	\$ -	\$ 2,630
Annual Meeting Income (Note C)	47,245	172	748	-	24,785
Contributions	134	-	-	-	47,245
Dues Handling Fees	312	-	-	245	379
Interest	1,746	-	49	-	312
Miscellaneous Income	464	-	40	128	1,923
Total Revenue	<u>73,766</u>	<u>172</u>	<u>3,467</u>	<u>373</u>	<u>77,778</u>
<u>EXPENSE</u>					
Addressing, Mailing and Shipping	4,816	-	25	-	4,841
Printing and Composition-Meeting Program	3,706	-	-	-	3,706
Newsletter	5,085	-	-	-	5,085
Supplies and Duplicating	1,226	-	381	-	1,607
Honorarium - Founders Lecturer	500	-	-	-	500
Accounting Services	3,000	-	-	-	3,000
Dues Processing Fees	3,158	-	-	-	3,158
Telephone	88	-	16	-	104
Credit Card Charges	730	-	-	-	730
Miscellaneous	265	-	-	-	292
Total Expense	<u>22,574</u>	<u>-</u>	<u>422</u>	<u>27</u>	<u>23,023</u>
Net Revenue Before Fund Transfers	51,192	172	3,045	346	54,755
Transfers Between Funds	300	-	-	(300)	-
Net Revenue After Fund Transfers (Exhibit A)	<u>\$ 51,492</u>	<u>\$ 172</u>	<u>\$ 3,045</u>	<u>\$ 46</u>	<u>\$ 54,755</u>

SOCIETY FOR INVERTEBRATE PATHOLOGY
NOTES TO THE FINANCIAL STATEMENTS
FOR THE PERIOD MAY 1, 1993 THROUGH APRIL 30, 1994

Note A: Advances For Future Meetings

"Advances For Future Meetings" consists of the following:

Banff Meeting - 1997	\$ 2,000
Montpellier Meeting - 1994	7,000
Spain Meeting - 1996	3,600
	<u>\$12,600</u>

Note B: Membership Dues

Membership dues revenue represents amounts collected during the current period for the calendar year 1994 and 1993. Dues have been collected from the following membership categories:

	<u>Society Operations</u>	<u>Microsporida Division</u>	<u>Microbial Control Division</u>	<u>Total</u>
Full Member (735 @ \$30)	\$22,050	-	-	\$22,050
Student Member (110 @ \$15)	1,650	-	-	1,650
Microsporida Member (86 @ \$2)	-	172	-	172
Microbial Member (374 @ \$2)	-	-	748	748
Miscellaneous 1993 Amounts	165	-	-	165
	<u>\$23,865</u>	<u>\$ 172</u>	<u>\$ 748</u>	<u>\$24,785</u>

Note C: Annual Meeting Income

Annual Meeting Revenue is recognized as income at the time it is received. Revenue amounts received during the period of May 1, 1993 through April 30, 1994 is as follows:

1986 Amsterdam Meeting	\$ 18,398
1992 Heidelberg Meeting	10,504
1993 Asheville Meeting	18,343
	<u>\$ 47,245</u>

PROPOSED BUDGET FOR SIP FOR 1994-1995

EXPECTED REVENUES					
	Society Operations	Microsporidia Division	Microbial Control	Endowment	Total
Membership (n) dues:					
Full (750) at \$30	22,500	----	-----	-----	22,500
Student (100) at \$15	1,500	----	-----	-----	1,500
Microspor Div 90 at \$2	----	180	-----	-----	180
Micro Cont Div 380 at \$2	----	----	748	-----	748
Interest Income	5,000	----	200	200	5,400
Total	29,000	180	948	200	30,328
ESTIMATED EXPENSES					
	Society Operations	Microsporidia Division	Microbial Control	Endowment	Total
Addressing, Mailing & Shipping					
Newsletter*	3,200	----	-----	-----	3,200
Dues, Ballots, etc.	2,500	100	400	-----	3,000
Prog. & Abstracts**	8,000	----	-----	-----	8,000
Composition & Printing					
Newsletter (3 issues)	6,000	----	-----	-----	6,000
Proceedings***	8,000	----	-----	-----	8,000
Office Supplies & Copying	2,300	----	-----	-----	2,300
Acting Services (FASEB)	3,500	----	-----	-----	3,500
Founder's Lecture+					
Travel	800	----	-----	-----	800
Subsistence	600	----	-----	-----	600
Honorarium	500	----	-----	-----	500
Miscellaneous	200	----	-----	-----	200
Student Awards	550	----	-----	-----	550
Dues Processing (FASEB)	4,000	----	-----	-----	4,000
Telephone	100	----	-----	-----	100
Credit Card Charges	800	----	-----	-----	800
Miscellaneous	350	----	-----	-----	350
Foreign Membership**	----	----	-----	210	210
Total Expected Expenses#	41,400	100	400	210	42,110
Net Revenue	(12,400)	80	448	(10)	(11,782)
Cash Outlay, Future Meetings: Seed Money###	10,000	----	-----	-----	10,000
Net Cash Increase or (Decrease)	(22,400)	80	448	(10)	(21,782)

*Addressing, mailing, and shipping costs were \$4,816 from May 1, 1993 to April 30, 1994. For 1994-1995, I have projected a total for this item of \$5,700 (Newsletter and dues, ballots, etc. combined).

**I have left a large amount for the mailing of the program and abstracts for the Montpellier meeting. It is not clear whether the funds generated from the meeting will pay for this or whether the program and abstracts will be distributed at the meeting to attendees only. It is possible that this money may not be spent.

***The mailing and printing of the proceedings are assumed to be high because a larger volume is expected in association with the 6th ICIP meeting. This cost may also be absorbed by funds generated from the meeting. However, I have budgeted for this item in anticipation that the Society may be asked to pay a portion or all of the expenses. I may not have budgeted enough for this item, but I have no guidelines to follow.

+Expenses for the Founder's Lecturer are low (for the 6th ICIP) but are based on the premise that the honoree and lecturer will be from Europe. If I am incorrect in this assessment, the budget MUST be increased substantially, especially for air travel.

++Support for membership for scientists in some countries is provided by the interest generated from the Endowment Fund. I project that seven scientists can be supported in the 1994/1995 fiscal year.

#Note that our estimated expenditures far exceed our expected income. Even if I remove the \$16,000 for the program and abstracts (mailing and printing) and proceedings and include the outlay for future meetings, we will be in deficit spending. However, our financial health is excellent as long as we can be profitable from our annual meetings.

###There is also a continuing need to provide "seed" money for future meetings. Although the 1995 meeting in Ithaca does not require funds at this time, Spain (1996) and Banff (1997) meetings may need additional support. Funds may be also needed for the 1998 meeting.

Revenues for 1993-1994 totaled \$77,778 (Exhibit B). The majority of the income was from past meetings (1986 Veldhoven - \$18,398 and 1992 Heidelberg - \$10,504). The 1993 Asheville meeting was highly successful scientifically and financially with \$18,343 added to the SIP treasury. The seed money of \$3,000 provided to the organizers was never spent and is accounted in the total funds from the meeting.

Membership dues exceeded our projection with 735 full members paying \$22,050 and 110 students contributing \$1,650.

Expenditures for 1993-1994 totaled \$22,574 and are itemized in Exhibit B. Major expenditures include addressing, mailing and shipping (\$4,816), costs associated with printing for the Asheville meeting (\$3,706), SIP Newsletter (\$5,085), supplies and duplicating (\$1,226), and FASEB associated service costs (\$6,158). Another major expenditure which has not yet been subtracted and listed under Assets (Exhibit A) is the outlay of funds for future meetings (\$12,600). This expenditure becomes accountable after the meeting is held.

The bottom line is that the SIP has \$94,283 in the Society Operations. The Council should consider investing some of the funds (\$50,000) into one or several long-term interest bearing accounts to make the money work for us. A "high risk" investment (mutual funds) generally brings higher returns, but the down side is the lack of security. A "safe" investment would be a certificate of deposit or Treasury notes invested over several months so that the maturation date would vary and the treasury would be more fluid. Currently, the funds are in checking accounts which traditionally provide the lowest interest rates. This investment issue needs to be discussed and a decision made in Montpellier.

The proposed budget for 1994-1995 is presented. I believe that this is self explanatory. The only concern is the uncertainty of the income or liabilities from the Montpellier meeting.

Harry Kaya, Treasurer

Site Selection Committee Report

The confirmed and tentative sites for SIP meetings through 1998 are as follows:

Year	Site	Dates	Status
1995	Ithaca, N.Y.	July 16-21	Confirmed
1996	Segovia, Spain	Sept. 1-7	Confirmed
1997	Banff, Alberta	Aug. 24-30	Confirmed
1998*	Sapporo, Japan	Aug. 23-28	Tentative

*International Colloquium

Brian A. Federici, Chair

Founders Lecture Committee Report

The 1993 Founders Lecture, honoring Dr. John Couch, was presented by Dr. Howard Whisler at Asheville, North Carolina at the XXVIth Annual Meeting of the Society for Invertebrate Pathology on Monday, August 2 at the Opening Plenary Session. The Founders Lecture Committee convened on August 5, 1993. Members present were Dr. Tony Sweeney, Chairman, Dr. Richard Daoust, Dr. Clay McCoy and Dr. Carlo Ignoffo. Dr. Bob Granados, while no longer a voting member of the committee, was also invited to attend the meeting due to his valuable experience as a previous member and chair of the committee. It was agreed that the position of Chairman for 1994 should rotate to Dr. Daoust.

Throughout the course of the SIP Meeting, committee members spoke to members at large and canvassed the membership to submit recommendations and nominations for the 1994 Honoree and Lecturer. After considerable discussion, it was unanimously agreed that the Honoree would be Professor Constantin Vago, formerly of the University of Sciences, Montpellier, France. Dr. Vago, an internationally renown scientist, has been a major contributor, with more than 400 scientific publications, to the field of invertebrate pathology. In particular, Dr. Vago has made significant contributions to the field of insect virology and has influenced the careers of many invertebrate pathologists throughout his distinguished career. Dr. Vago is an Honorary member and was the 1987 "Founders Lecturer" of the Society. His selection was deemed most appropriate and in keeping with the tradition of choosing an Honoree from the area in which the Annual Meeting was to be held.

It was also unanimously decided to offer the honor of Lecturer to Dr. Lois K. Miller of the University of Georgia. Dr. Miller is well known in the field of insect baculovirology and, therefore, an excellent choice to honor Dr. Vago's work. In over 100 refereed publications

concerning the molecular biology of insect baculoviruses, she has explored both basic baculovirus genes, and applied research, developing baculoviruses as gene expression vectors and improving the properties of the viruses as insect pest control agents.

Both Dr. Vago and Dr. Miller have accepted the honors as "Honoree" and "Lecturer", respectively.

The text of Dr. Alain Vey's 1992 Founders Lecture honoring Dr. Erwin Muller-Kogler at the Heidelberg Meeting was published in the March 1994 issue of the *Journal of Invertebrate Pathology (JIP)*. The text of Dr. Howard Whisler's 1993 Founders Lecture honoring Dr. Couch was published in the May 1994 issue of *JIP*.

Richard A. Daoust, Chairman
Founders Lecture Committee

Report of the Representative for the International Union of Biological Sciences (IUBS)

The contact of the SIP, as an international organization, with the IUBS is by the activities of the Society serving as the Commission on Invertebrate Pathology as an element in the IUBS. Unfortunately, most of the communications from IUBS and other elements in the enormous bureaucracy of international scientific societies are routed through the Presidents of Societies associated with IUBS. Until recently, the Society lacked a permanent address through which communications could be directed to a sitting President. The IUBS must be notified officially by the Society for Invertebrate Pathology to confirm our permanent address for the SIP and the Commission. The FASEB should be instructed to forward, without delay, communications from IUBS to the President or the President's designee.

A current case of delayed response by the SIP to an IUBS request is the invitation for attendance in an International Forum. The Forum entitled: "Biodiversity, Science and Development-Towards a New Partnership" will be convened at UNESCO Headquarters in Paris on 5-9 September 1994. In addition to the second circular for the Forum sent to Don Roberts ("President of the Society for Invertebrate Pathology"), an invitation was extended, dated 16 June 1994, to Don Roberts from D.L. Hawksworth (International Mycological Institute) for a member of the Society to attend an IUBS/IUMS (International Union of Microbiological Societies) Biodiversity Task Force. Don Roberts, in an informal note attached to the letter, asked me to advise him

if I would represent the SIP. I have advised Don Roberts that it was not my intention to participate.

Of course, no funds are available from the organizing committee of the Task Force to support an SIP representative. Although we may be cynical as individuals concerning the social value of participating in international bureaucratic events, the letter from Professor Hawksworth identifies an important responsibility for the SIP. This is an invitation to express the SIP interest in the issues of biodiversity, particularly associated with invertebrates and microorganisms. In addition, the SIP can be prepared to join forces "...in regard to identifying future international programs for which funding might be sought."

Although the Society has initiated few applications for funds to support SIP activities, there are funds available on a competitive basis for biodiversity conservation interests. For example, the United States/ Asian Environmental Program (USAEP), administered in part by elements of the World Wildlife Federation and the US Agency for International Development (USAID), is accepting applications and has funded a few biodiversity projects in Southeast Asia. Personally, I am only aware of those projects in Indonesia. At the very least, the SIP could consider co-sponsorship with another organization for educational programs, particularly Seminars, Workshops, or Short Courses in the area of microbiology and invertebrates.

In closing and in summary, the Society must notify the international community of our permanent address, and advise FASEB the routing of materials sent to the sitting President of the Society for Invertebrate Pathology. In addition, without a mandate to do so, I have suggested to Don Roberts that he respond to the letter from Professor Hawksworth, accepting the opportunity to have a representative from SIP. I only trust that Council will ask an individual or individuals to participate in the IUBS/IUMS Task Force Inaugural Meeting. Note that the meeting is scheduled 18.30 hours (6:30 pm) on 6 September 1994, following the close of the SIP Meeting in Montpellier, France on 2 September 1994.

All of the activities of the Society for Invertebrate Pathology are the activities of the IUBS Commission on Invertebrate Pathology. As such, the Society has the benefits of a mantle of a Non-Governmental Organization (NGO) in matters concerning international policies in biology, public health and the general welfare of humanity. We can once again extend our appreciation to Professor Vago, who, as a major international figure in the sciences for suggesting the

responsibility, and developing the opportunity for the SIP to serve as a Commission in the IUBS.

Old birds never know when to get off of the perch. It is appropriate to have another individual assume the diffuse activities as the Representative of the SIP to the IUBS. The individual can serve as the Designee for the President of SIP to compile materials from IUBS and respond to the President with recommendations for action.

John D. Briggs
SIP Representative to IUBS

Report of the Nominating Committee August, 1994

The Nominating Committee is composed of the following Members: Professor Robert S. Anderson, Professor Elizabeth W. Davidson, Dr. Jurg Huber, and Professor Dudley Pinnock, Chair.

The Committee is charged with the responsibility to nominate suitable candidates willing to stand for election to the offices of Vice President, Secretary, Treasurer and Trustees of the Society.

Two meetings of the Nominating Committee were convened during the Society's 1993 Annual Meeting at Asheville, N.C., USA.

During the first meeting, the Committee discussed at length the roles and duties of the various officers of the Society, and was able by unanimous agreement to produce a draft short list of potential candidates for each of the above offices. All of these potential candidates were members of the Society in good standing, and, in the opinion of the Committee, would serve the Society well, if elected.

On behalf of the Committee, the Chairman then approached each of these potential candidates individually to discuss the duties of the corresponding office and to seek his or her consent to stand as a candidate for election. Dr. Thiery was not present at Asheville, and was contacted by telephone and fax.

It is most encouraging to report that almost all of the potential candidates so approached were pleased to stand for election, and most said they appreciated the confidence placed in them by the Committee.

At a second meeting of the Committee, a slate of candidates consenting to stand for the various offices was drawn up. This slate received the unanimous approval of the Members of the Committee, and the Chairman then moved, and the Committee resolved *nem. con.*, that this slate of candidates be recommended to the Executive Council of the Society.

After the Asheville meeting, a revision of the slate was made necessary to accommodate the late withdrawal of one candidate. A final slate was then circulated by fax to all Committee Members, and on receipt of their unanimous approval, the slate was faxed to the Secretary of the Society.

The recommended slate of candidates is:

for Vice President*	Dr. Brian A. Federici, Dr. Lawrence A. Lacey**.
for Secretary:	Dr. James J. Becnel, Dr. Wendy D. Gelernter.
for Treasurer:	Dr. Harry K. Kaya. (to run unopposed)
for two Trustees:	Dr. David J. Ellar, Dr. Mark S. Goettel, Dr. Anthony W. Sweeney, Dr. Isabelle Thiery

* The nomination for President is, *ex officio*, the Vice President currently in office.

** Larry is currently a Trustee, and so would resign if elected to higher office.

On behalf of the Committee, Betty Davidson kindly volunteered to arrange for the candidates' biographical data to be published in the Newsletter, and these appeared in the October, 1993 issue. The election of candidates to office was conducted by a postal ballot of all members of the Society early in 1994.

The nomination of candidates for office in our Society raises many delicate issues which must be managed with sensitivity and wisdom, and I wish to express my sincere thanks to Betty, Bob and Jurg for the time, careful thought and cooperative spirit which they brought to this task.

Respectfully submitted on behalf of the Nominating Committee

D.E. Pinnock, Chairman

Report of the Local Program Committee, Montpellier

The meeting will be held in the Convention Center Le Corum located in the heart of Montpellier. Two large auditoriums (745 and 318 seats), 5 smaller rooms (2 of 140 and 3 of 80 seats), and a 600 sq.m. hall for posters, exhibition and coffee breaks have been reserved.

The Colloquium was advertised by the sending of the "First Announcement brochure" either through the SIP Newsletter or to non SIP members : over 500 brochures were sent by mail or distributed at different meetings. Further information was provided through the March and June 94 SIP Newsletters. Registration forms were provided in the March Newsletter.

As of June 28, the number of registrants has reached the impressive figure of 587. The registrants belong to the following categories: 268 SIP members, 147 non SIP members, 95 students and 77 accompanying persons. 55 countries are represented.

Call for symposia, contributed papers, posters, has been very successful thus far. We have received 435 abstracts distributed in plenary sessions (15), symposia (94) contributed papers (142), student competition contributed papers (27), posters (110) student competition posters (39) and workshop papers (7). The abstracts will be printed in 2 books and distributed along with the briefcases at the registration desk.

The oral presentations will be distributed in 5 plenary sessions (morning 8:30-10:30 with no concurrent session), 19 symposia (mornings and afternoons) 30 contributed paper sessions (essentially afternoons and Monday, and Tuesday evenings), and three workshops (Monday and Tuesday evenings). All the student competition papers have been scheduled before the banquet. There will be only one poster session on Wednesday morning but the posters will be on display during the 5 days of the meeting. In addition, a workshop on *B.t.*, the SIP Executive Council and Business Meetings, the Microbial Control Division and the Microsporidia Division meetings have been scheduled.

Due to the cost of handling registration by private conference organizers (about 250 FF/person), the job was done by two local "volunteers". The registrants had to take care of their own accommodation. A list of hotels nearby Le Corum were given along with the registration forms. We took care of the student residence rooms (150 reserved).

A welcome desk will be opened at the Montpellier airport and Montpellier train station on Saturday and Sunday, Aug 27 and 28.

The social program will include (1) the mixer on Sunday evening at Le Corum, (2) the Wednesday afternoon excursion (visit of Aigues Mortes, Nimes coliseum and Pont du Gard). The 5 km Race will take place at the end of the excursion (around 6-7 pm) and will be followed by a BBQ on the shore of the Gardon River (3) the Banquet will be held on Thursday night at the Valmagne Abby, about 30 km from Montpellier.

For handling of financial matters, an account has been opened at the Credit Agricole Bank. The largest expenditure was the renting of Le Corum (around 400,000 FF), which includes coffee breaks, slide projectors etc. and the social program: mixer, excursion and banquet (around 400,000 FF). The registration fee was kept to a rather low level: 1400 FF for SIP members, 1600 FF for non SIP members and 800 FF for students, taking in account that it includes all the social events.

The SIP treasurer made us an advance of 61,523.50 FF for reservation of Le corum. State and local funds were received from the following to support the above mentioned costs: INRA, University of Montpellier, District and Region. We also received the sponsoring of the following private companies: Ecogen, BioSys, Sandoz Agro, Mycogen, EcoScience, Entotech, Abbott, Becker, Crop Genetics, Ciba-Geigy and Dupont.

Respectfully submitted,

F. Cousserans
R. Frutos
L. Lacey
M. Bergoin, Chair

Report of the Student Contest Judging Committee

The Student Presentation Contest for 1994 was characterized by very stiff competition. A field of 26 oral and 42 poster presentations presented the judging team with a formidable task. The Student Contest Committee consisted of Jim Harper (Chair), Chris Payne, Jurg Huber. Because of the large number of entries, overlapping of scheduled presentations on the program, and diverse subject matter, additional judges were used to provide equitable review of each presentation. The following persons participated as judges of either posters or paper

presentations: Wayne Brooks, Norman Crook, David Ellar, Ralph Ellers, Eva Franken, Peter Krell, Marnix Peferoen and Paul Scotti.

Presentations were judged for organization, balance, quality of delivery, quality of research, visual aids, ability to field questions, adherence to time limits, and overall preparation. Posters were judged for organization, completeness, visual aids, general impact, and clarity.

Winners selected by the judges were as follows:

Poster Presentations:

First place: Gert B. Jensen of the National Institute of Occupational Health, Department of Toxicology and Biology, Copenhagen, Denmark for the poster entitled "The genetic basis of the aggregation system in *B. thuringiensis* subsp. *israelensis* is located on a large plasmid." Co-authors were Hanneh Bendixen, Andrea Wilcks and Susanne S. Petersen.

Second place: Lidia M. Fiuza of CIRAD-BIOTROP, Montpellier, France for the poster entitled "Binding of δ -endotoxin from *Bacillus thuringiensis* to the midgut brush border of the striped stem borer (*Chilo suppressalis*)." Co-authors were N. Michaux-Ferriere, R. Frutos, A. Boets and J. Van Rie.

Oral presentations:

First place: Karen Girard of the Department of Biology, School of Biological Sciences, Southampton, United Kingdom for the paper entitled "Species specific resistance in aphids to infection by *Verticillium lecanii*." Co-author was Christopher W. Jackson.

Second place: Jacqueline Scheepmaker of DLO-Research Institute for Plant Protection, Wageningen, The Netherlands for the paper entitled "The use of nematodes to control the mushroom sciarid (*Lycoriella auripila*) and the mushroom phorid (*Megasella halterata*)." Co-authors were F.P. Geels and Peter H. Smits.

Both first place winners received a certificate and a cash prize value of \$100. Both second place winners received a certificate and a cash prize value of \$75.

Respectfully submitted,

Jim Harper (Chair), Chris Payne, Jurg Huber

Endowment Committee Report

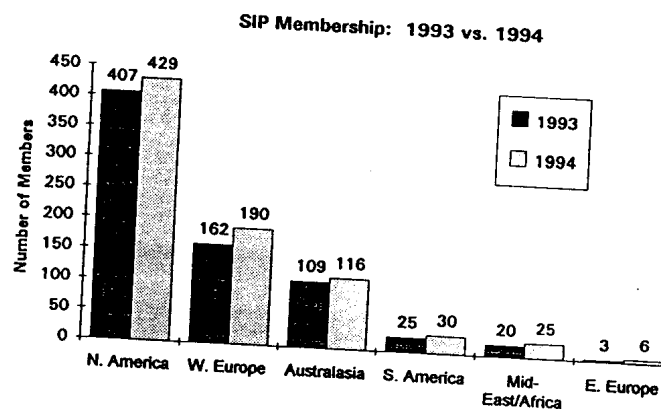
For 1994 two colleagues were nominated for endowed membership. Donations to the endowment of \$245 were received for the 1993 calendar year. The fund currently has a balance of \$5,323. The endowment is being invested in a Money Market Savings Account. This is a very safe and conservative account, but consequently provides only the lowest possible return on investment. The current earnings are only 2.45%. A long term investment like the endowment should have some percentage - probably somewhere between 25 and 50% - placed in a mutual fund that can provide more aggressive long term growth. It is recommended that Council consider authorizing a restructuring of the endowment investment portfolio to include an equity component that can provide for greater long term growth.

We will take the opportunity of the ICIP in Montpellier to publicize the Endowment and solicit donations. We will also encourage all members to nominate colleagues for endowed memberships.

L. Lacey
T. Poprawski
G. Soares, Chairman

Membership Committee Report June 20, 1994

Composition of SIP Membership: Membership in the SIP has risen slightly with 796 members as opposed to 727 in 1993 (a 10% increase). We remain a truly international society, with members from 52 countries, and with over 45% of the membership from outside North America. During 1994, significant increases in membership were seen in Western Europe (up 17%), Middle East/Africa (up 25%) and South America (up 20%) (see charts).



SIP Membership: June, 1994

Location	1993	1994	% Change	Location	1993	1994	% Change
United States	361	380	5	Australia	28	27	
Austria	2	3		B. Solomon Is.	1	1	
Belgium	4	6		Ceylon	1	1	
Denmark	5	5		China	13	10	
Finland	3	4		French Polynesia	1	1	
France	34	43		India	1	1	
Greece	0	1		Indonesia	1	1	
Ireland	1	2		Japan	39	46	
Italy	5	8		Mauritius	1	1	
Netherlands	7	10		New Zealand	6	10	
Portugal	5	7		Philippines	4	3	
Spain	5	6		Reunion	1	1	
Sweden	7	9		W. Samoa	1	0	
Switzerland	6	8		Singapore	4	4	
United Kingdom	65	67		S. Korea	1	2	
W. Germany	13	11		Taiwan	4	3	
W. Europe	162	190	17	Thailand	3	4	
Canada Total	46	49	7	Australasia	109	116	6
Czechoslovakia	2	3		Argentina	3	5	
Hungary	1	1		Brazil	12	12	
Poland	1	1		Colombia	1	1	
USSR	1	1		Costa Rica	1	2	
Eastern Europe	3	6	100	Dominican Rep	1	1	
Egypt	3	4		Mexico	8	8	
Israel	11	11		Venezuela	1	1	
Jordan	1	1		S. America	25	30	20
Kenya	1	2		TOTAL ALL	726	796	10
Niger	1	2					
South Africa	2	3					
Turkey	2	2					
Middle East/Africa	20	26	25				

Activities during 1993/94:

A mailing was sent in December, 1993, to 312 non-members, mostly from Europe and South America, soliciting their participation in the 1994 Colloquium as well as their membership. The mailing list was developed from lists of participants at recent invertebrate pathology-related meetings. We hope that the modest rise in SIP membership was partly due to this mailing.

Membership forms were translated into Spanish and Portuguese, thanks to the efforts of members Juan Jose Garcia and Roberto Pereira. A French form is in the process of being translated.

SIP information and membership forms were distributed at several professional meetings.

A one-page description of the SIP was updated. This is used to provide background information for potential members.

Suggested activities for 1994/95:

Begin a campaign to send articles, letters to the editor, etc. to professional journals which outline the purpose, benefits and activities of the SIP.

Conduct 1-2 mailings based on contributors to JIP who are not members and participants in invertebrate pathology related meetings.

At Annual Meetings, continue to provide scientists interested exclusively in *Bacillus thuringiensis* (or other current issues) a forum for presentations and discussion. This can be accomplished by scheduling Bt presentations within a two day period -- either at the beginning or the end of the SIP meetings. This type of arrangement will avoid the possibility of separate SIP and Bt meetings (which we have seen in the past) and will increase participation in the society's number one fund-raiser -- our annual meetings.

Increase SIP profile (and thus membership) by becoming officially involved (through publications, speeches, interaction with government agencies, etc.) in contemporary issues such as:

1. Safety of microbial pest control agents
2. Management of resistance to *Bacillus thuringiensis*
3. Lobbying for increased state and federal funding of invertebrate pathology research

The Membership Committee: The Membership Committee for 1994/95 consists of Lerry Lacey, James Becnel, Robert Anderson, Harry Kaya and Wendy Gelernter.

Submitted by Wendy Gelernter

Newsletter Report

Three issues of the Society for Invertebrate Pathology Newsletter comprising a total of 122 pages were produced in the 1993-94 year. The Newsletter provided members with information on meetings, candidates for office, meeting and committee reports, positions available, obituaries, and member address changes. Features included editorials, letters to the editor and microbial control news. In addition to 72 pages of Newsletter text, there were 5 supplements comprising of 50 pages which included a questionnaire for a world database on insect pathogens, a list of recently published books on insect pathology, a supplement to the Directory of Industries Involved in the Development of Microbial Control Products, a registration package for the Montpellier meetings and a Membership Directory.

Text was prepared in Lethbridge, but printed and mailed by FASEB in Maryland. We appreciate the excellent cooperation of FASEB in producing our Newsletter. We also wish to thank Mary Sonntag whose expertise with

desktop publishing contributed significantly to the appearance of the Newsletter.

We are grateful to all members who contributed material to the Newsletter this year, and encourage any member to send news of interest to the Society.

Financial Report, July 1993 - August 1994

Expenses at Arizona:

Phone, photocopying, courier:	\$142.57
Bank service charges:	32.90
Total expenses	<u>\$175.47</u>
Interest	2.49
Net costs	<u>\$172.98</u>

Expenses at Lethbridge:

Desktop specialist	\$542.11
Postage	41.04
Stationary & Misc.	<u>132.82</u>
Total expenses	<u>715.97</u>

Expenses at FASEB:

	Vol. 25(3) (42pp)	Vol. 26(1) (36pp)	Vol. 26(2) (44pp)
Printing	\$1,599	\$1,399	\$2,182
Mailing	1,284	853	1,017
Programming	<u>0</u>	<u>0</u>	<u>325</u>
TOTAL	<u>\$2,883</u>	<u>\$2,252</u>	<u>\$3,524</u>

Total cost of Newsletter (3 issues): \$ 9,548

Cost per member based on 793 current members: \$ 12.04

Mark S. Goettel, Editor

Elizabeth W. Davidson, Assistant Editor

Division of Microbial Control, Annual Report, 1994

1993 Annual Meeting: The Division held its annual meeting at Asheville North Carolina in conjunction with the XXVIth Annual Meeting of the Society for Invertebrate Pathology. The meeting was called to order by Chair Michael McGuire on 2 August at 1930 with approximately 130 people present. The 1993 annual report was summarized and approved by the members. It was noted that there were 315 members in the Division at that time. Members were encouraged to attend the Division Symposium "Use of Microbial Insecticides in Crop Protection" organized by George Soares, and the Division Workshop "Recent Activities in

Product Registration" organized by Michael McGuire and Ann Hajek. The Workshop following the Division business meeting was very well attended and ended with a mixer serving the refreshments left from the Society mixer the previous night. Michael Klein assumed the chairmanship of the Division with Ann Hajek selected as Chair-Elect and John Vandenberg elected Secretary/Treasurer. Jane Drummond and Ramon Georgis were reelected as Members-at-Large.

Activities: The committee chaired by Wendy Gelerntner established at the 1992 annual meeting to explore the publication of a document on standardization was dissolved due to lack of concern about this issue.

Mark Goettel was appointed to chair a new committee to investigate the pros and cons of creating a Division document on host range and safety of microbial control agents. This 15 member committee recommended the process be started by the Division sponsoring a symposium on safety at the ICIP in Montpellier. In addition to this symposium, the Division will also sponsor a workshop at Montpellier on Application Technology for Microbial Agents.

The Directory of Industries Involved in the Development of Microbial Control Products was first published by the Division in December 1991 and sent to all members of the Division. Supplement 1 was published in January 1992 and Supplement 2 followed in February 1994. The Directory and its supplements are available from the Division Secretary/Treasurer.

The Division continues to offer the Slide Atlas on Microbial Control for \$50 (\$55 overseas mailing). Expenses of the atlas have been met and funds from the remaining sales will go to the Division account. There is considerable interest in another atlas on basic insect pathology to be produced and distributed by the Division or the Society.

Microbial Control News continues to be a significant portion of the SIP Newsletter. The Division appreciates the efforts of Mark Goettel in seeing that this section is successful, and we encourage all Division members to submit appropriate information.

Membership and Finances: There are now 380 members in the Division at the end of the fiscal year. This is an increase of 30 members from last year.

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Funds on hand May 1, 1993 (Division checkbook) \$1526.49

Revenues

Dues	748.00
Directory (5)	25.00
Slide Atlas (50)	2,630.00
Interest	49.00
Misc.	<u>15.00</u>
Total	3467.00

Expenses:

Postage	25.00
Supplies and Duplicating	381.00
Misc.	<u>16.00</u>
Total	422.00

Funds on hand April 30, 1994

Division checkbook	\$4370.51
FASEB	<u>1089.00</u>
Total	5459.51

Guidelines for suggested uses of Division funds are being formulated.

Mike Klein, Chairperson
Division of Microbial Control

Microsporidia Division Annual Report, 1994

The Microsporidia Division held its Annual Business Meeting at the XXVIth Annual Meeting for Invertebrate Pathology in Asheville, North Carolina on 3 August 1993.

The Division Meeting was opened by the Chair, Ann Cali, at 1230, with 27 members in attendance. The minutes of the 1992 Meeting were read by Secretary Leah Bauer and approved by the members present.

Old Business: Chair Cali and Ted Andreadis requested updated budget information, which was unavailable at the Meeting. The Chair also suggested that Division membership be indicated on the next SIP membership list. There was general consensus that the secretary discuss the feasibility of this idea with Mark Goettel.

New Business: The chair discussed potential changes in the SIP Bylaws by the division committee, however, no consensus was reached on these changes and their impact on the Division. However, the Chair noted that our division often lacks representation on the program committee, resulting in minimal input on selection of symposia topics and scheduling of microsporidia talks. It was noted that the Division typically prefers the informal workshop rather than a symposium, and the pros and cons of each format were discussed.

Discussion focused on workshop topics for the 1994 XXVIIth Annual Meeting and International Colloquium in Montpellier, France. Tim Kurtti's suggestion of "*in vitro* culture of microsporidia in cell culture" was readily accepted with Kurtti serving as the organizer.

Al Undeen solicited additional input into his upcoming manual entitled "Methods in Microsporidiology" sponsored, in part, by S-240 Southern Biocontrol Workshop. There was general discussion on the usefulness of such a manual for researchers and students, particularly for in human medicine. Sara Lanka provided an update on David Onstad's data base.

The Division-sponsored workshop, entitled "Biological Significance of Spore Polymorphism in Microsporidia", was convened by moderator Tim Kurtti. Speakers were H. Iwano, L. Sealer and J. Maddox, and J. Becnel.

The meeting was adjourned by Chair Cali.

Leah Bauer, Secretary
Microsporidia Division

MICROBIAL CONTROL NEWS

Bees Used to Disseminate NPV to Control Corn Earworm

WASHINGTON, Oct. 24--A typical worker honeybee flies 500 miles and can search thousands of flowers for pollen and nectar that it carries back to the beehive. Now U.S. Department of Agriculture scientists are using these female bees to drop something off during their travels--an environmentally friendly virus that kills crop pests.

Scientists with USDA's Agricultural Research Service have patented a device that dusts honeybees with a virus-talc powder mixture when they leave the beehive. As the bees buzz from flower to flower, the virus and powder rub off their feet and legs and onto the blossoms.

The virus is harmless to honeybees, but knocks down populations of corn earworms that cause millions of dollars in damage to crops, said John Hamm of the agency's Insect Biology and Population Management Research Laboratory in Tifton, Ga.

The virus-dusting device was developed by the late agency entomologist Harry Gross, agency technician Raydene Johnson and beekeeper J.C. Walters. The patent, number 5,348,511, was issued on Sept. 20.

"Field studies show that the bees do a great job of carrying the virus from one crimson clover flower to another," Hamm said. "They're really ideal carriers because they work hard and visit so many plants." A bee has a foraging life among flowers of 15 to 20 days--until the wings fray and wear out.

Hamm, who worked with Gross and cooperators on the biocontrol field studies, said the virus killed from 74 to 87 percent of corn earworm larvae in crimson clover fields where the bees carried the nuclear polyhedrosis virus (NPV). That's compared to only 11 - 14 % mortality in fields where bees were not used.

"The studies were done only with NPV and corn earworms, but the beehive device can be used with any biocontrol agent that doesn't harm the bees," he said. That's the case with NPV, which attacks only corn earworms and tobacco budworms and does not hurt bees or other beneficial insects. ARS scientists at Beltsville, Md., have tested NPV in mice and rats and have found no evidence of toxicity, Hamm said.

The dusting device fits on the bottom of a standard beehive. It allows the bees to enter unobstructed. But when they leave the hive, they are forced to walk over a pan as they exit. Scientists put a mixture of NPV and talc powder in the pan, so the bees' legs and feet are covered with the mixture.

Eric H. Erickson, who heads the ARS Honey Bee Research Lab in Tucson, Ariz., said the new device is timely and "definitely should be pursued. It should be especially appealing to beekeepers who rent their bees for pollinating crops."

John Hamm, Entomologist
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THE DIRECTORY OF INDUSTRIES INVOLVED IN THE DEVELOPMENT OF MICROBIAL CONTROL PRODUCTS

Supplement No. 2 was mailed to all SIP members with the February Newsletter (vol. 26, no. 1, 1994). This supplement contains updated information and new listings. The original directory (1991) has been sold out.

We are planning to publish an updated version or a third supplement, depending on the need, in January, 1995. **Deadline for submission of updates or new listings is 30 December, 1994.** If you have new products not listed in the original Directory or in the Supplement, or if there have been changes, please inform me. We would like to make the Directory as current and comprehensive as possible.

The Editor

Mycogen to Test Bioinsecticides, Insect-Resistant Corn Plants Under Experimental use Permits Issued by EPA

May 5, 1994 Mycogen Corporation plans to begin testing new environmentally compatible biological insecticides and insect-resistant corn plants within the next few weeks under Experimental use Permits (EUP) granted by the U.S. Environmental Protection Agency (EPA), according to Mycogen Chairman, President and CEO Jerry Caulder.

Caulder said the testing approvals will help Mycogen to expedite development and registration of additional biological crop protection alternatives.

"We are seeing much more rapid response to our requests for regulatory action from the EPA's Office of Pesticide Programs since the Clinton Administration announced its pesticide reform initiative last year," Caulder noted. "Before there can be a meaningful change in pesticide usage, farmers need access to a wider array of alternative products, and there seems to be a real commitment to promoting development of those options."

Caulder said the insect control agents in both the bioinsecticides and insect-resistant corn plants Mycogen will be testing are protein biotoxins derived from *Bacillus thuringiensis* (Bt), microorganisms that occur naturally in soil. He said Mycogen has identified and catalogued thousands of Bt strains, and has applied for or been issued U.S. patents on 29 of the 46 known Bt biotoxins.

Under the bioinsecticide EUP, Mycogen will be permitted to test combinations of four Bt biotoxins for which extensive individual toxicology and environmental evaluations already have been conducted. All of the biotoxins will be genetically engineered, using Mycogen's proprietary CellCap^R encapsulation system. Three genetically engineered CellCap products, MVP^R, M-PerilTM and M-Trak^R already have been registered by the EPA for commercial sale.

The permit authorizes tests to control caterpillars in more than 20 crops, including alfalfa, cotton, tree fruit, grape and berry vines, melons, lettuce, strawberries, sugar beets and tomatoes. Mycogen has applied for state testing permits in the seventeen states in which it plans to conduct tests on more than 3,000 acres in 1994, and again in 1995.

"This EUP gives us the flexibility to test a number of biotoxin combinations concurrently, instead of having to come in for a new EUP each time we change the formulation," Caulder said. "That should help us to get new products into the marketplace a lot faster."

Mycogen will test genetically engineered insect-resistant corn plants under an EUP that originally was approved for its corn development collaborator, Ciba Seeds, in 1993, and was extended in April to cover both Ciba's and Mycogen's 1994 testing programs. Caulder said Mycogen will plant a total of approximately 40 acres of test plots in the corn belt and Puerto Rico.

"The number and breadth of these testing programs and regulatory milestones is indicative of the progress we're making," Caulder said. "Each of these technologies -- microbial and genetically enhanced plants -- offers safe, effective biological alternatives to chemical products that have dominated the crop protection industry."

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Microbial Pesticides; Experimental Use Permits and Notificaions

A notice, published in the **Federal Register** vol. 59, No. 169, 40 CFR Part 172, promulgates an amendment to the Experimental Use Permit (EUP) regulations for pesticides that was proposed on January 22, 1993. These regulations clarify the circumstances under which an EUP is presumed

not to be required and implement a screening procedure that requires notification to EPA before initiation of small-scale testing of certain microbial pesticides. This notification scheme implements provisions of the EPA policy statement published in the **Federal Register** of June 26, 1986, with modifications.

Dates: This final rule is effective October 31, 1994.

For further information contact: Evert K. Byington, Chief, Science Analysis and Coordination Staff, Environmental Fate and Effects Division (7507C). Environmental Protection Agency, 401 M St., S.W., Washington, DC 20460. Tel: (703-305-6307).

EPA Takes Action on Biotechnology Rules

Thursday, August 25, 1994 The U.S. Environmental Protection Agency is proposing a regulation for screening certain new biotechnology-produced microorganisms under the Toxic Substances Control Act (TSCA). The Agency is also finalizing a regulation governing the small-scale field testing of certain biotechnology-produced pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

"These biotechnology rules meet the Clinton Administration's commitment to protect public health and the environment, while making economic sense for the rapidly developing biotechnology industry," said Carol M. Browner, EPA Administrator. "Genetic engineering offers great potential for pollution prevention by providing substitutes for traditional chemicals that may pose greater risks to health and the environment."

The proposed regulations under TSCA would require companies which manufacture, or researchers who develop, microbial products using biotechnology subject to TSCA (for example, certain industrial and environmental uses) to obtain EPA review prior to the use of the products in commerce, or testing in the environment. Specifically, the TSCA proposed regulations:

Put in place EPA's program for microbial products of biotechnology under TSCA by establishing procedures specifically tailored to micro-organisms for research and development (R&D) testing and commercial uses.

Continue to focus the Agency's regulatory attention on those microbial products of biotechnology, which warrant greater scrutiny - those most likely to display

new traits or characteristics and whose behaviour thus is less predictable.

Establish abbreviated reporting specifically for R&D activities and offer several exemptions for certain R&D activities using microbial products the Agency judges to be low risk.

Streamline the reporting program for commercial uses of microorganisms and offer several exemptions for certain commercial uses of microbial products the agency judges to be low risk.

Incremental costs industry-wide for complying with the proposed TSCA rule have been estimated by EPA to range between \$890,000 and \$2.2 million in year one and between \$56,000 and \$460,000 in year five as industry becomes more familiar with the provisions.

The final regulations under FIFRA governing the small-scale (less than 10 acres) testing of genetically engineered pesticides modifies EPA'S experimental use permit regulations to require that certain microbial pesticides be submitted to EPA for a 90 day screening to determine whether an experimental use permit is necessary for small scale testing. Generally, the new rule requires notification in those cases when the pesticide's pesticidal activity has been enhanced or imparted by the introduction of genetic material. Previously, a notification and review was required for a much broader range of microbial pesticides.

The TSCA proposed biotechnology rule and certain support documents are being made available electronically. These documents may be accessed through Internet at: gopher.epa.gov. The Agency is interested in receiving feedback on the use electronic media in this way from persons who have obtained these documents electronically (address feedback on obtaining the documents only to Juanita Geer, 202-260-1532; FAX: 202-260-1657).

See the following article for further details on the FIFRA regulations. Full texts of the regulations are expected to be published in the Federal Register during the week of August 28.

Al Heier
United States Environmental Protection Agency
Communications, Education and Public Affairs (1703)
Tel.: 202-260-4374

Final Rule on the Testing of Microbial Pesticides

EPA is publishing a final rule that amends the Agency's experimental use permit regulations and modifies prior policy regarding small scale testing of microbial pesticides. (Microbial pesticides consist of microorganisms such as bacteria, fungi, viruses, or protozoans used to control pests.) The rule will codify existing policy that requires notification to the Agency prior to initiating small-scale tests in the environment with certain genetically modified microbial pesticides.

This rule will reduce the regulatory burden of testing microbial pesticides compared to existing policy, while preserving sufficient federal oversight to prevent unreasonable adverse effects from testing of microbial pesticides. Based on a number of years of experience, EPA believes that many microbial pesticides and other biological pest control agents are less hazardous than traditional chemical methods of pest control, and this rule represents one of a number of steps that the Agency is taking to encourage their development and use.

This fact sheet provides a summary of the final rule *Microbial Pesticides; Experimental Use Permits And Notifications*. For more details, please refer to the Federal Register Notice that EPA expects will be published during the week of August 29, 1994. The final rule addresses comments to the proposed version of this rule that was issued in January 1993 (58 FR 5878). In summary, the major features of the rule include:

EPA must be notified before initiation of small-scale testing of certain microbial pesticides.

Microbial pesticides subject to the notification requirements are those that EPA believes have the greatest potential to pose risks to people or the environment, or those where sufficient risk information and knowledge are lacking. Several straightforward criteria are used to define these pesticides.

Once a notification is received, EPA must review it within 90 days to determine whether or not to require an experimental use permit before small-scale testing may begin, based on the potential for unreasonable adverse effects.

Background: Experimental Use Permits: EPA regulates the use, sale and distribution of pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Development of a new pesticide typically entails conducting

a series of progressively more extensive tests, beginning with initial laboratory screening and culminating with large outdoor tests under actual use conditions. EPA regulates testing under section 5 of FIFRA, which provides for issuance by the Agency of experimental use permits (EUPs) for the testing of new pesticides or new uses of registered pesticides. (EPA also has authority to regulate unregistered pesticides under section 3(a) of FIFRA.) EPA will issue an EUP only if it determines that the testing will not cause unreasonable adverse effects to the human health of the environment. An EUP authorizes limited use of a pesticide under controlled conditions.

In most cases, EPA regulations (found at Title 40 of the Coded of Federal Regulations [CFR] part 172) require that EUPs be obtained only in the case of large-scale field tests. Large-scale tests include any terrestrial application to more than 10 acres of land or any aquatic application to more than 1 surface acre of water. EPA has generally presumed that smaller-scale experiments are sufficiently well-controlled and therefore do not require EUPs.

EUPs For Microbial Pesticides: EPA recognizes that microbial pesticides differ from conventional chemical pesticides in that they may have the capability to reproduce in the environment, and in some cases may pose different risk considerations than those associated with other pesticides. Therefore, the Agency is amending part 172 to require notification of the Agency prior to initiation of small-scale testing in the environment of certain microbial pesticides so that EPA may determine whether these tests should be conducted under an EUP. This rule codifies the notification provisions of the Agency's policy statement of June 26, 1986 (51 FR 23302), but with modifications to the scope of pesticides subject to the requirement.

Notification Scope For Genetically Modified Microbial Pesticides: Prior policy specified that EPA be notified prior to small-scale testing of *all* genetically altered and nonindigenous microbial pesticides. The final rule limits the notification requirement to a smaller group of microbial pesticides. The Agency's goal in delineating the scope of the notification requirement is to identify those microbial pesticides having the greatest potential risk of introduction into the environment.

Under the final rule, the Agency must be notified prior to testing in the case of "microbial pesticides whose pesticidal properties have been imparted or enhanced by the introduction of genetic material that has been deliberately modified." This approach focuses on microbial pesticides that could possess new properties that cause significant

impacts upon human health or the environment. This approach reflects EPA's experience with many other microbial pesticides and supports its conclusion that, in general, these other microbial pesticides are not likely to present new hazard issues in small-scale tests and therefore do not warrant notification.

This rule includes a further exception for microbial pesticides where the genetic modifications do not include introduction of genetic material from other organisms. Such modifications - rearrangements or deletions of an organism's own genetic material - can occur naturally, and the Agency does not believe that the small-scale testing of such organisms warrants notification.

Notification Scope For Nonindigenous Microbial Pesticides: EPA recognizes that the introduction into the environment of microbial pesticides that are not native, whether genetically-modified or not, also may merit closer scrutiny than introduction of indigenous organisms. EPA believes that such introduction is already adequately regulated by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA/APHIS). In response to public comment, however, EPA will require notification prior to small-scale testing of nonindigenous microbial pesticides that have not been acted upon the USDA (i.e., by issuing or denying a permit or determining that a permit is unnecessary).

Testing In Contained Facilities: Testing conducted in a facility with adequate containment and inactivation control will not be subject to the notification requirements. Responsibility for selection and use of adequate containment and inactivation control lies with the researcher or institution conducting the research. Minimal record keeping to document these efforts is required.

Other Provisions of the Final Rule: The rule includes several additional provisions. Petitioners may request exemption of specific microbial pesticides or categories of microbial pesticides or categories of microbial pesticides from the notification requirement. The rule also includes provisions to enable the Agency to address situations where small-scale tests result in unanticipated and untoward effects to human health or the environment.

Relationship Between This Rule and Overall Regulation of Pesticides

Steps Toward Commercial Use	Federal Requirements
1) Tests conducted in contained facilities	For microbial pesticides, minimal recordkeeping but no EPA notification required.
2) Small-scale Field Testing (less than 10 acres for terrestrial testing or 1 acre aquatic testing)	Microbial pesticides: in certain cases, EPA notification required. EPA review could lead to requirement to obtain Experimental Use Permit (EUP). In certain other cases, USDA has authority over testing. Other pesticides: in most cases, no notification or EUP required.
3) Large-scale Field Testing	All pesticides (microbial and others): in most cases, EUP required.
4) Commercial sale and use	All pesticides (microbial and others): EPA registration required. A battery of tests on potential risks to health and the environment must be conducted for registration.

This figure describes how the Final Rule for experimental use permits relates to the overall scheme of pesticide regulation. In general, as a pesticide moves through progressively more extensive test of its effectiveness and impact and toward commercialization, federal requirements governing its use increase. The requirements indicated in the figure in **bold** are those defined by this rule.

When EPA Must Be Notified Prior To Small-Scale Testing Of Pesticides

Type of pesticide	Is the microbial pesticide indigenous to the test environment?	Must EPA be notified prior to small-scale testing?
Non-microbial	(Not applicable)	No, in most cases.
Microbial:		
Pesticidal properties have been enhanced by introduction of deliberately modified genetic material (<i>except</i> as described for the next pesticide type)	Indigenous or nonindigenous	Yes.
Genetic changes are similar to those that occur in nature (solely by rearrangement or deletion of a species' own genetic material)	Indigenous	No, in most cases.
	Nonindigenous	No, in most cases, unless pesticide has not been acted upon by USDA.
Pesticidal properties have <i>not</i> been enhanced by introduction of deliberately modified genetic material	Indigenous	No, in most cases.
	Nonindigenous	No, in most cases, unless pesticide has not been acted upon by USDA.

This figure summarizes when EPA must be notified prior to small-scale testing. The figure is for illustrative purposes and is not meant to be a comprehensive guide to compliance; consult federal regulations for more details.

European Union Sponsors Scientific Cooperation in the Field of Entomopathogenic Nematodes

COST (European Cooperation in the Field of Science and Technological Research) is a frame-work for R&D cooperation on the European level. COST Action 819 "Entomopathogenic Nematodes" supersedes Action 812

within the domain "Agriculture and Biotechnology". The main objective of Action 819 is to combine interrelated European expertise in order to increase the use of entomopathogenic nematodes in integrated pest management and further reduce chemical control. The coordination will be carried out by a Management Committee (Chairman: R .U. Ehlers) in accordance to the Memorandum of Understanding, which has so far been signed by nine countries. Another five will soon follow. Institutions outside Europe can also participate by expressing their interest and active participation. The EU funding covers the coordination costs: Scientific secretariat, workshops, working group meetings, publications, short term missions and evaluations. In order to coordinate scientific work the following working groups (WG) were established (Co-ordinators in brackets):

- WG1 Isolation and identification (B. Hominick and A. Burnell)
- WG2 Production and application (J. Coosemans and R.-U. Ehlers)
- WG3 Nematode ecology (C. Griffin, R. Gwynn and P. Smits)
- WG4 *Photorhabdus* and *Xenorhabdus* (N. Boemare and N. Simoes)
- WG5 Nematode biology and genetics (A. Burnell and A. Fodor)

A workshop on nematode genetics was held at Maynooth College, Ireland, in 1993. For information on obtaining the proceedings, see pg. 29. Another workshop on nematode-bacterium-symbiosis and nematode ecology was held at Kossuth University of Science, Debrecen, Hungary, in May 1994. Proceedings have not yet been finalized. The next workshop (application and persistence) will be held at Todi, Italy, May 17-21, 1995. For further information please contact the local organizer Rima Gwynn, Ecogen Europe, S.r.l., 3A Parco Tecnologico, Fraznion Pantalla 06050, Tod (PG) Italy.

For further information on COST Action 819 please contact the chairman:

Ralf-Udo Ehlers,
Inst. Phytopathology,
Dept. Biotechnology & Biological Control,
Klausdorfer Str. 28-36, 24223 Raisdorf, Germany
(Tel.: 49-4307-7498; Fax.: 49-44307-7499).

Mycogen Files for EPA Approval to Sell Seeds For Genetically Engineered Insect-resistant Corn Plants

Mycogen Corporation has applied for Environmental Protection Agency (EPA) approval to market planting seeds for corn hybrids that are genetically engineered to resist insect damage that costs U.S. farmers as much as \$1 billion a year in lost yields.

The new hybrids produce a protein that protects them from European corn borers, a significant pest in U.S. and European corn production. This protection will reduce or eliminate the need for conventional corn borer insecticide applications, which are expensive and often can't control corn borers after they tunnel into cornstalks. It is estimated that 1 - 5% of the \$20 billion U.S. corn crop is lost to corn borer damage each year.

The gene responsible for corn borer resistance is a synthetic copy of those produced by *Bacillus thuringiensis* (Bt). Bt proteins selectively target pests such as corn borers without harming beneficial insects, animals or humans, and have been used to produce environmentally compatible pest control products for more than 30 years.

Mycogen already has test-marketed corn hybrids with genetically enhanced natural resistance to the first generation of corn borers, which strike corn plants early in the season. Bt-based resistance will provide a second control mechanism and one that will protect corn plants throughout the season against both the first and second generations of the pest. Because Mycogen's natural first brood-resistance is derived from genes native to the corn plant and the hybrids are produced through traditional breeding, EPA approval to market those seeds is not required, and the company plans a full commercial roll-out in 1995.

Mycogen field-tested transgenic plants with Bt-based corn borer resistance this year under an EPA Experimental Use Permit, and hopes to receive full registration in time for a limited commercial launch in 1996. Mycogen plans to market hybrid seed corn containing both natural and Bt-based control genes to reduce the likelihood that the pests might overcome a single control mechanism.

"Corn is America's largest crop, so these new crop protection technologies will produce tremendous economic and environmental benefits," Jerry Caulder, Mycogen's chairman, president and CEO said. "Seed corn with built-in insect resistance will give farmers higher yields without the expense and environmental side-effects of chemical

insecticides. Our strategy is to use this convergence of the seed and pesticide industries to capture an increasing share of the \$1.5 billion annual U.S. seed corn market."

Mycogen is a leader in Bt technology, with issued or pending U.S. patents covering 29 of the 46 patented Bt genes and proteins with demonstrated pest control activity. It was the first company to receive EPA registration for genetically engineered, Bt-based bioinsecticide sprays, and currently markets the only three such products now on the market. It also holds two broad European patents that cover genetically engineering plants with plant genes or insecticidal genes to produce plants with pest resistance or other improved food or fiber characteristics. Corresponding U. S. patents are pending. In 1993, Mycogen entered into a cross licensing agreement and insect-resistant corn research collaboration with the Ciba Seeds division of Ciba Geigy Corporation.

Mycogen Corporation
San Diego, CA, 92121
Tel.: 619 453 8030
Fax: 619 153 5191
October 4, 1994

OBITUARY



DR. RICHARD ARTHUR NOLAN
1937-1994

Dick was born in Omaha, Nebraska where he received his primary and secondary education. He spent extended periods at the family ranch and summers on an Aunt's farm learning to drive a tractor, handle a team of horses, plant and harvest a variety of crops and care for a variety of animals. These experiences did much to reinforce his ideas

about self-reliance and hard work and spark his interest in both plants and animals. He graduated from Central High School and was elected to the National Honor Society (1955). He attended the University of Nebraska (Lincoln) and received his B.Sc. (1959: Botany, Mathematics) and M.Sc. (1962: Botany, Genetics). He was a Regent's Scholar and a Herbert Brownell Science Fellow as an undergraduate and received the Weber-Ernst Award in Botany during his M.Sc. studies. He took the Marine Botany course at Woods Hole (summer 1959) and Dr. T.W. Johnson's Marine Mycology course at Duke University (summer 1961) as an NSF Summer Fellow. He was the James M. Goewey Fellow at Berkeley (1962-63) where he studied the nutritional requirements of *Catenaria anguillulae* as a student of Dr. Ralph Emerson. While pursuing his PhD (1967), he obtained an undergraduate major in painting and attended the University of Washington's Friday Harbor Laboratories as a NSF Summer Fellow (1963) to study Marine Invertebrate Zoology. In 1967, Dick married Anna Christine Eagle from El Cerrito, California. He was awarded an NIH Postdoctoral Fellowship in Biochemistry (1967-68) to study comparative rates of protein evolution in birds with Dr. Allan Wilson at Berkeley and continued these studies as a Postgraduate Research Biochemist (1968-69). Dick was appointed Immunologist (Assistant Professor of Biology) at New Mexico State University at Las Cruces (1969-70) but left to study Insect Pathology as a Memorial University Postdoctoral Fellow with Dr. Marshall Laird. He was appointed Assistant Professor at Memorial (1971-75), Associate Professor (1975-80) and Full Professor in 1980. He taught Mycology, Immunology and Developmental Biology. His research interests have included the physiology of Newfoundland freshwater fungi and were focused on the nutrition, biochemistry and mass-fermentation of *Entomophaga aulicae* for biocontrol of forest pest insects, esp. the eastern hemlock looper and the spruce budworm. In addition to his research and teaching Dick was writing a novel set in Frontier Country (Nebraska) circa 1900 at the time of his death on August 5, 1994.

MEMBER NEWS

DR. ANN E. HAJEK has recently joined the Department of Entomology at Cornell University. She will be teaching insect pathology and her primary research focus will be entomopathogenic fungi. Dr. Hajek previously conducted research at Boyce Thompson Institute where she worked with fungal pathogens, principally studying entomophthorean pathogens of gypsy moth. Her new address will be: Department of Entomology, Comstock

Hall, Cornell University, Ithaca, New York 14853-0901
TEL: 607-255-7723 FAX: 607-255-0939
e-mail: aeh4@cornell.edu

SUE MACINTOSH returned to Novo Nordisk Entotech, Inc. (Davis CA) on 1 Oct 1994 after spending the last year in Denmark as a visiting scientist. She helped initiate a research unit, named the BioIMAGE:S, a new Novo Nordisk research satellite. The labs are located close to Novo Nordisk headquarters outside Copenhagen. The researchers at BioIMAGE:S, comprise a cross-divisional team, developing the technology of high resolution video imaging to studying cellular functions of intact cells. This powerful technique can be used to study complex intracellular signalling systems. A variety of cell types are the focus of study at BioIMAGE:S, representing the areas of interest for Novo Nordisk. Sue heads the Insect Cell project, exploring ion movements in insect cells and the effects of Bt toxins. This work ultimately will be useful for developing novel high through-put screens to search for biological insecticides in a more directed manner. Upon her return to Entotech, Sue will head up a project team to develop new in vitro screening assays, while continuing as the Plant Protection Division's liaison to the BioIMAGE:S. Novo Nordisk A/S produces and sells a full range of Bt insecticides, worldwide.

DAVID ONSTAD of the University of Illinois and Illinois Natural History Survey is spending a sabbatical leave at the Department of Entomology at North Carolina State University in Raleigh, NC, from July to December, 1994. He will be working with Dr. Fred Gould on a Bt Management Working Group funded project studying the population genetics and population dynamics of European corn borer on Bt-transformed corn. His new address is Dept. of Entomology, NC State University, Raleigh, NC 27695-7634. Telephone: 919-515-2638. He will use his old email address.

NEWS ITEMS

Invitation to Join BioMOO Electronic Network

With an increasing number of our members having access to cyberspace, I'd like to make a suggestion as to how the information highway can be more useful. You may have read in the 13 May 94 issue of Science about BioMOO, a "virtual reality" research and office complex existing as a software program at the Bioinformatics Unit of the Weizmann Institute of Science in Jerusalem. BioMOO could provide a

"place" where our members can meet and discuss research in real time. Because of my particular interest in promoting the use of insect cell culture, I have created a duplicate of my lab at BioMOO as a means for teaching other scientists the benefits of insect cell culture and virology for research, teaching or industrial applications.

BioMOO currently has over 700 biologists on it's "staff", but few of these are involved in invertebrate pathology. I would like to see SIP take advantage of the potential of this system by getting more of our members to join. To visit BioMOO, telnet to bioinfo.weizmann.ac.il 8888 or 132.76.55.12 8888. Some telnet programs require the space between the address and the 8888 port identifier be replaced with a pound sign "#", others require the address to be followed by "/port=8888". BioMOO can also be reached by Gopher (port 70) at bioinformatics.weizmann.ac.il. At the welcome screen, type "connect guest".

At this point, you are in the BioMOO lounge where there is a tutorial for learning how to get around and communicate with others at BioMOO. Typing in 'map' will show you the layout of the main building at BioMOO and you can move from room to room by typing the direction (n, s, e, w, ne, se, sw, nw, and, in some cases, u(p) or d(own)). Directly 's' of the lounge is the central room from which you can take bus tours of BioMOO. 'S' and 'se' of the central room are the office wing and lab wing, respectively, where numerous scientists have interesting places to visit (currently about 4 dozen offices and over 80 labs). In addition to the main building, there are woods, a garden, a lawn (complete with a "lab animal zoo"), and a lake on the BioMOO campus.

If, after looking around, you want to join, type "help purpose" to see the statement of BioMOO's purpose. Then, you can register by typing: "@request _requested 'online' name@ for _your complete e-mail address@" (for me, this was "@request Dwight for dlynn@asrr.arsuds.gov"). You will be prompted for further information. In a short period of time, you will receive an e-mail message from Gustavo Glusmann, the BioMOO founder, with your character's name and a password.

Dwight E. Lynn
Insect Biocontrol Lab
Beltsville, MD

Computerized Database of the World's Insect Pathogens

As of June 1994, the database contains over 3,600 associations between a pathogen species and an insect

species. The number of associations by pathogen group are: 1,476 for fungi, 1,130 for viruses, 848 for microsporidia, 83 for protozoa, and 98 for infectious bacteria. More than one-third (3/7) of the entries are for Lepidoptera. Homoptera, Coleoptera, and Diptera each are involved in one-seventh of the associations recorded. Insect species that are beneficial or at least not pests, excluding bees, seem to make up 3% of the entries. The database also includes ticks and mites not just insects. About one-third of the habitats in which the associations are observed are crops, another sixth is orchard. About one-fifth are woods and another fifth are aquatic.

The database contains over 1,800 insect species. Two-thirds of the insects have only one pathogen species recorded for each in the database. One percent of the insects have 12 or more pathogens associated with each species.

There are 660 non-virus pathogen species in the database: 208 fungi, 370 microsporidia, 43 protozoa, and 39 bacteria. Over 400 of these infect a single host according to the database. *Beauveria bassiana* had 232 hosts and *Metarhizium anisopliae* had 128 hosts recorded in the database. There are over 1,100 "species" of virus if we assume that almost all are specific to one host. The database includes 511 NPV, 264 CPV, 157 iridescent viruses, and 71 granulosis viruses.

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Forty Years - The End of a Era: Insect Pathology in the Czech Republic

The group of Insect Pathology was organized at the Institute of Biology of the CS Academy of Sciences in 1954, after some preliminary work in this field as part of parasitological studies. The original staff was J. Weiser (head), J. Veber, O. Lysenko, J. Vankova, A. Samsinakova and R. Krezova. In 1958, this group organized the 1st International Conference on Insect Pathology and Biological Control where principal representatives of the field from 18 countries met and discussed the formation of the special field of Insect Pathology and Biological Control. This was the early origin of the well organized special field with 2000 active scientists worldwide, with their own congresses, societies and international organizations. In these early times, three worldwide organizations were represented:

IOBC, CIBC and WHO. In the next years the group incorporated temporarily. Workers in the field of entomophagous parasitoids and insect physiology performed cooperative work with CIBC and introduced parasites of the balsam wooly aphid, the fir budworm and other insects into Canada. In 1962, the group was incorporated in the newly organized Institute of Entomology as a Department of Insect Pathology; the rest of the group formed the departments of physiology and biological control.

The years of political oppression brought steady pressure against international cooperation, and the "1968 Spring" was a short period of relief; the normalization brought a more intensive cooperation in the Eastern block in the framework of the Comecon Group of Microbial Control which was subsequently included as the East Palearctic Section of the IOBC. The participants of the 1978 International Colloquium on Invertebrate Pathology (over 200 guests) may remember the localization of the Department at the Fleming square, Praha-Dejvice. In the eighties a biological campus was built for the Academy in Ceske Budejovice, a rather political monster in marble, including also the Institute of Entomology. At that time the old staff of the Department were about to retire and were not prepared to move from Prague.

After O. Lysenko died in 1985, the then remaining staff retired and new scientific crew was recruited including: Z. Mracek as nematologist, V. Matha as immunologist and molecular biologist, L. David for studies of protozoa, L. Kahounova for the CCEB Collection, E. Prenerova for mycology and A. Jegorov for biochemistry. Later Dr. Kucera, as the only member of the Prague staff, moved to C. Budejovice and was in charge of the group. Weiser (now 74) remained in Prague and participated as consultant in the work of the group. The intention was to change the original concept of the department from its morphological - taxonomic and production orientation to the modern style molecular biology - immunology - biochemistry.

Towards the end of this era, the group was subjected to different elements of pressure which included the partial occupation of the specialized laboratories prepared for the Department by other staff. This trend continued after the 1989 revolution, with complete disorganization of the Academy and impact of newly formed groups of interest. Reduction in staff included the whole group of molecular biology and immunology (which continues as a research team of the pharmaceutical industry) and continuing pressure resulted in the dissolution of the Department as such and subsequent decrease of the staff to the present situation with only insect nematology remaining.

The CCEB is maintained at the former department but with only occasional service by L. Kahounova. Former industrial affiliations such as close contact with the *B. thuringiensis* production at the Agrokombinat Slusovice and the Boverol production at ACHP Milevsko were lost; the production fermentors at Slusovice-Hrobice were disassembled or just left idle. The production of Boverol, which was in part affiliated with the Department and produced registered products used in agriculture for control of the Colorado potato beetle and in forestry for control of the pine weevil, was closed this spring.

It seems to be the end of progressive insect pathology in the Czech Republic. Weiser sits as guest worker at the Parasitology Department of the Charles University (Praha 2, Vinicna 7) and as a part time worker of the Institute of Entomology. He is maintaining some activity in the field and some tradition in cooperation with the students and postdocs at the Faculty. The 40-year anniversary of the Department of Insect Pathology at the Academy of Sciences has only a few survivors. But its contribution of 457 scientific papers in the old laboratories and more than 50 during the last years of dissolution, reflects the actual goodwill of the survivors to overcome the bad situation at the Academy. New centers are expected to develop at the Forest Research Institute and further promulgate the ideas resulting in centers in Slovakia, Austria, Germany, Bulgaria and Italy.

The taxonomic activities of the former staff of the Department resulted in many type collections. They are maintained in J. Weiser's laboratory at the Department of Parasitology, Charles University, Praha 2, Vinicna 7 and will now be prepared for storage at the National Museum, Zoology section.

J. Weiser
c/o Parasitology Dept.
Prague 2, Czech Republic

PUBLICATIONS

A Training Manual on Biological Control

The International Institute for Biological Control is preparing a training manual on biological pest control for publication in early 1995. With the growth of interest in sustainable agriculture and alternatives to chemical control, we have identified a need for simple, practical information on how to use predators, parasitoids and pathogens to

control pests and weeds. The aim is to provide a step-by-step methodology for using biological control within the context of IPM.

The manual, which will be in two volumes - 1. Background and case studies; 2. Practicals - is intended for people without a specialized knowledge of biological control, such as crop protection staff trying to cut back on pesticides, trainers in rural NGO's and extension agents and managers in forestry, farming and nature conservation. Having read the manual, users should be able to : carry out basic research for conserving natural enemies in the field; mass produce control agents; start up introduction programmes for exotic pests; and produce, formulate and apply biopesticides.

For further information contact:

Stephanie Williamson
Training & Information Officer, IIBC
Silwood Park, Buckhurst Road
Ascot, Berks. SL5 7TA, UK.
Fax: 44 344 875007

Proceedings of the Second Canberra Meeting on *Bacillus thuringiensis*

Edited by Ray Akhurst and published by CSIRO Australia, this small paperback book, totalling 179 pages, contains clearly-written, up-to-date short reviews on the basic biology of BT, resistance to BT, the current status of BT genetic manipulation, descriptions of several biotechnological advancements and products resulting from them, and a series of papers on the use of BT with emphasis on Australian agriculture. It is particularly recommended for those who may not be working directly in the field but who are seeking a general overview of the subject. The basic biology chapters in general are very helpful in obtaining a quick summary of the very large body of information on this organism. The more practical chapters on BT use in field situations clearly point out the problems, as well as the benefits, of use of these products. The book contains nineteen chapters plus reports of forums on transgenic plants, environmental and social issues, and registration in Australia. Finally, the book exhibits a pleasing, clear typeface and the illustrations, including one color plate, are well reproduced.

Available from Dr. Ray Akhurst, CSIRO Division of Entomology, GPO Box 1700, Canberra ACT 2601 Australia. \$50 Australian plus \$10 Australian for air shipment. Check

or money order payable to CSIRO, Division of Entomology. Visa or Mastercard may also be used: include your card number and your signature. FAX: 61-6-246-4000.

Assistant-Editor

Genetics of Entomopathogenic Nematode-Bacterium Complexes

The proceedings of a symposium and workshops entitled *Genetics of Entomopathogenic Nematode-Bacterium Complexes* which was held at St. Patrick's College Maynooth, Ireland, 23-27 October, 1993, have been published by the EU. (See article on pg. 24)

The proceedings contain the full text of the symposium papers and these papers are grouped into the following sections:

1. Aspects of *Caenorhabditis elegans* genetics of interest to entomopathogenic research;
2. Genetics of entomopathogenic nematode-bacterium complexes and
3. The genetic improvement of entomopathogenic nematodes.

The publication also contains detailed protocols for the following techniques from the practical workshops: cryopreservation of *Heterorhabditis*; genetic crosses in *Heterorhabditis* and *Steinernema*; axenising nematodes and monoxenic culture of the nematode/bacterium complex; isolation of primary and secondary forms of *Xenorhabdus* and *Photorhabdus*; bioassays for the selection of improved lines of nematodes and DNA amplification by PCR.

National progress reports for each of the European countries participating in COST 812 as presented to the COST Management Meeting at Maynooth on 27 October 1993 are also included in the publication.

This publication may be obtained free of charge from the EU at the following address:

Dr. J.P. Masson,
COST Agriculture-Biotechnology,
B68 5/12-5/8,
The European Union,
Rue de la Loi 200,
B 1059 Bruxelles, Belgium.

POSITIONS AVAILABLE

Opportunity for Graduate Work, Mycology/Entomology

I am looking for a graduate student interested in work on fungal pathogens of insects. My research program focuses on the population biology of fungal species which cause disease in insects associated with lowbush blueberry. Potential projects include: documenting the species composition and frequency of fungi causing disease in insect populations on blueberry, experimental work on infectivity of fungal pathogens on pests such as blueberry fruitfly or molecular approaches to the study of populations of fungal entomopathogens, but I am open to discussing other projects. Starting Date: Jan. or Sept. 1995

Dr. Doug Strongman
Biology Department, Saint Mary's University
Halifax, N.S. B3H 3C3
Tel. 902-420-5754
EMAIL: DSTRONGMAN@HUSKY1.STMARYS.CA

Post-doctoral Scientist, Molecular Biology of Insect Pathogens

A person with PhD experience and proven ability in molecular biology/molecular taxonomy is required to contribute to two programmes, one aimed at understanding the interaction between the honey bee and its protoctistan pathogen, *Nosema apis*, the other at completing the sequencing of some *Bacillus thuringiensis* (Bt) genes and obtaining expression of these in a bacterial vector system. Projects within the bee programme would include the sequencing of ribosomal RNA genes and spacer regions of *N. apis* and related species with a view to investigating possible strains of this pathogen and improving the classification of the whole group; using pulsed-field electrophoresis to assess chromosome numbers and isolating and sequencing a DNA probe for *N. apis*. The Bt programme work would involve close collaboration with another Bt molecular biologist and with entomologists bioassaying the expressed proteins. There may be some technical assistance available for this project. Some experience with insect pathology, bacteriology or bee pathology is preferable. The ability to work independently and to prepare manuscripts for publication is essential. This position is full-time, with a two-year term and annual salary of \$36,000 (NZ).

Louise Malone
Hort Research, Private Bag 92169
Auckland, New Zealand

Postdoctoral Research Associateship, Environmental Risks of Microbial Agents

The National Research Council (NRC) is accepting applications for a Postdoctoral Research Associateship award tenable at the U.S. EPA, Environmental Research Laboratory in Gulf Breeze, Fl. Research opportunity includes the development of methods to evaluate environmental risk caused by the application of microbial pest control agents, and the study of the fate and effects of microbial pest control agents on nontarget animals. Individuals whose focus of research is directed towards fungal biocontrol agents are particularly encouraged to apply. Please direct inquiries to Dr. Fred J. Genthner, U.S. Environmental Protection Agency, Environmental Research Laboratory, 1 Sabine Island Drive, Gulf Breeze, Fl 32561-5299 TEL: 904/934-9342. Applications must be submitted directly to the NRC by January 15, 1995. For application materials contact the National Research Council, Associateship Programs (TJ 204/EX), 2101 Constitution Avenue, Washington, DC 20418 FAX: 202/334-2759

Postdoctoral Research Associate, Formulation of Fungal Pathogens

The National Center for Agricultural Utilization Research, a United States Department of Agriculture, Agricultural Research Service facility is seeking qualified applicants to fill a temporary (2 year Post doc) position to examine formulation of insect fungal pathogens. We have strong interactions with fermentation specialists and formulation chemists and work as a team to solve problems. Starting salary would be in the GS-11 or GS-12 range (currently \$34,662-\$41,543) depending on qualifications. Position to start April 1, 1995.

Qualifications desired: Incumbent should have a strong background in microbial control with an emphasis in fungus/insect/environment interactions. Knowledge of the physiology of fungi with respect to survival of propagules in the laboratory and the environment is also desired. Formulation experience would help the candidate in the application process but is not essential.

Send resume, transcripts, and list of at least 3 references to:

Michael R. McGuire, Research Entomologist
USDA-ARS
1815 North University St.
Peoria, Illinois 61604, USA
Phone: 309-681-62222; FAX: 309-681-6691
email: mmmcguire@asrr.arsusda.gov

MEETING AND WORKSHOP ANNOUNCEMENTS

Gordon Research Conference in Agricultural Sciences "Chemical/Biological Synergies to Reduce Inputs for Pest Control" Feb. 5-10, 1995 Oxnard, CA

The meeting will focus on rationally designed mixtures and strategies using biological and chemical mechanisms to synergistically lower inputs in weed, disease and insect pest management; and to discuss the constraints in applying these new approaches to agriculture.

For registration information contact either co-chairman below (preferably by email) or see October issue of "Science" with registration information and forms.

Jonathan Gressel
Plant Genetics
Weizmann Institute of Science
Rehovot, 76100 Israel
FAX: 972-8-469124
e-mail: lpgress2@wicmail.weizmann.ac.il

David A. Fischhoff
Monsanto Company
700 Chesterfield Parkway North
St. Louis, Missouri 63198, USA
FAX: (314) 537-6047
e-mail: dafisc@ccmail.monsanto.com

Biological Control of Arthropod Pests & Weeds, April 24 - May 19, 1995, Silwood Park, U.K.

This four week course is organized jointly by the International Institute of Biological Control and Imperial College of Science, Technology and Medicine, University of London. It is run as a fee-paying course and also as a specialist option of the one-year, MSc in Pest Management at Imperial College. Participants will learn:

- the principles and basic methodology of biological pest control with reference to its role in IPM programmes
- how and when to:
 - conserve native predators and parasites
 - introduce new ones from the native habitat of exotic pests
 - propagate enemies in sufficient quantities for field release

The course is structured around practical skills sessions including field and laboratory experiments, participatory workshops, and informal lectures, with an emphasis on "hands on" training. Participants will also take part in information gathering exercises and group presentations. External participants will be provided with IIBC's Biological Control Training Manual and will receive a Certificate in Biological Control on successful completion of the course.

The following topics will be included:

- + Fundamentals of biological control
- + Biological control with arthropod natural enemies
- + Using natural enemies in biological control
- + Biological control with entomopathogenic organisms (Screening and characterization of fungi, viruses, bacteria, nematodes, etc. as pathogens of insect pests; development of microbial insecticides.)
- + Biological control of weeds
- + Communicating biological control
- + Information sources

Participants should ideally have a first degree in agriculture or biological sciences and/or practical experience in this area. The course is suited to agricultural researchers and extensionists, including crop protection staff who wish to broaden their knowledge of pest management. It is also relevant to staff from forestry and conservation departments and from non-governmental agencies involved in rural farming or forestry programmes.

For registration and all other administrative matters - including possible sources of financial support - contact : Sally Verkaik, Continuing Education Centre, 558 Sherfield Building, Imperial College, London SW7 2AZ, Tel. +44- (0)171 594 6882/1; Fax +44- (0)171 594 6883; email: s.verkaik@ic.ac.uk.

Queries regarding the technical content should be directed to Stephanie Williamson, IIBC, Silwood Park, Buckhurst Road, Ascot, Berkshire, SL5 7PY, United Kingdom, Tel: +44 (0) 344 872999; Fax: +44 (0)344 875007.

Technology Transfer in Biological Control: From Research to Practice, Montpellier, France, September 9-11, 1996

This international conference sponsored by the International Organization for Biological Control will have the following objectives:

1. To demonstrate the effectiveness of biological control using an array of successful, reliable examples;
2. To document the basic importance of biological control in developing IPM programs, and in sustainable agriculture;
3. To identify major problems in implementing biological control;
4. To promote interactions between entomologists, pathologists, weeds scientists and other specialists;
5. To provide a forum in which biological control researchers from the private and public sectors can meet with plant protection advisors, extensionists, teachers, producers, manufacturers, salesmen and policymakers.

For more information contact: J.P. Aeschlimann, CSIRO Biological Control Unit, Campus International de Baillarguet, 34982 Montferrier-sur-Lez, France

LETTERS

From the President

At the recent SIP business meeting at Montpellier, France, I commented that I would write a letter from the President in some of the SIP newsletter issues during the next two years. The importance of communication within and outside of SIP cannot be understated, especially in view of the fact that our society membership is comprised of scientists from over 52 countries. As SIP members, we can communicate our research primarily through participation in the annual SIP meetings which are now held at various international sites. However, our primary means of communication throughout the year is the SIP Newsletter. I am sure that you all agree with our past president, Chris Payne, when he stated in his 1994 President's Report that we have a "truly excellent SIP Newsletter" and he acknowledged the strong leadership of the editors, Mark Goettel and Betty Davidson. Mark and Betty do much of the behind-the-scenes work to produce the newsletter, but both of them have stated on several occasions that the newsletter will not continue to be a successful means of communication without input from the membership. I, therefore, encourage the membership to continue to provide the editors with news items, letters to the editor, forum articles, etc. The purpose of my column will be to communicate with you on selected issues of SIP business that transpire throughout the course of the year.

As I reflect back to our recent meeting in Montpellier, it is clear that our Society has matured into a strong international scientific organization with a growing membership and a good financial base. Our 1994 meeting in France was a huge success both scientifically and socially. I would like to commend Max Bergoin, the local and program committees, and the support staff that manned the registration desk for their outstanding work. A very important event that contributed significantly to the success of the Montpellier meeting was our joint meeting with the IInd International Conference on *Bacillus thuringiensis*. The organizers of the BT conference have expressed a strong interest in meeting with the SIP every two years and the society council strongly supported this idea. I have asked Brian Federici, SIP Vice-President, and Just Vlak, newly appointed chairman of the SIP Meetings Sites Selection Committee, to move forward and explore the possibility of a joint meeting with the IIIrd International BT conference in Segovia, Spain.

With respect to future SIP meetings, the organization of the 1995 meeting at Cornell University, Ithaca, NY, is well underway and in the capable hands of John Vandenberg (program chair) and Alan Wood (local arrangements chair). The sites for the 1996 (Segovia, Spain) and 1997 (Banff, Canada) meetings are set and conference facilities have been identified. At our recent meeting in Montpellier, the SIP council approved an invitation to hold the 1998 SIP meeting together with the 7th ICIP in Sapporo, Japan.

Other items of business approved at our Montpellier council meeting which will impact our annual meetings are an increase in student paper awards (up to \$1500), and providing travel expenses and an honorarium for all future Founder Lecturers.

An important item on my agenda for the next two years will be to continue to review and suggest revisions to parts of the bylaws of SIP. We are currently not operating under the existing bylaws in certain aspects of our society business. Chris Payne began the process of revising the bylaws and I will be appointing a new committee to assist me in this continuing process. I am also filling positions in other SIP committees and will be able to give you a complete listing of committee members in a future newsletter.

Bob Granados

Letter to the President

The news that the membership of the Society Invertebrate Pathology elected me an Honorary Member, as relayed in your kind letter of June 6, was reason for elation, humbleness and reflection. Elation because I am proud of being among those few who have received this honor, the highest that can be conferred by our Society. On the other hand, being in the company of these distinguished scientists is clearly a humbling experience: several of these men and women (and I have known most of them personally) accomplished much more than I, some under less favorable circumstances than those with which I was blessed.

Reflection, too: this rare honor usually comes at the end of one's long journey, and certainly at a time when the turmoil of intensive and creative research has subsided. Was the journey worth taking? Yes indeed! There was much work to be done in some areas of our scientific endeavor: I did some of it. There were students to be led on this path: they were guided. Proposals were submitted, scientific questions were debated. When the going was rough, the many hours at the microscope, in the sterile room, at the centrifuge, or at the inoculation bench gave me the tremendous dose of enthusiasm needed to continue unraveling some of the more difficult puzzles: little by little to understand and finally prove causal relations in disease. It was not only a journey worth taking, it was an exciting one, too!

Although I no longer spend those marvelous hours in the laboratory, my interest in pathology is still intense. I enjoy reading about the new directions in research and I am fascinated by the most recent techniques in molecular biology and the new statistical approaches in epizootiology. If the clock could be turned back, would I start again in our area of research? Maybe with an all new set of tools? You bet!

I want to thank all my colleagues and friends for the honor they so generously bestow on me. I thank them especially for reminding me how wonderful it is to be part of this Society and to share in the study of pathology. Finally my heartfelt thanks to the many colleagues, worldwide, who have been so generous to me throughout my years of research and teaching.

With cordial greetings and many good wishes,

Mauro E. Martignoni
Albuquerque, New Mexico

PLEASE DONATE SLIDES FOR A SLIDE ATLAS ON GENERAL INVERTEBRATE PATHOLOGY

Due to popular demand, the Society is once more sponsoring production of a slide atlas on general invertebrate pathology. Please donate slides of pathogens (molecular, cellular, and organismal levels), diseased hosts, schematic life cycles, etc. All submissions will be greatly appreciated.

Send slides to Dr. Ann E. Hajek, Department of Entomology, Cornell University, Ithaca, New York 14853-0901.

SLIDE ATLAS OF MICROBIAL CONTROL

There are only approximately 50 copies remaining. The slide atlas includes 200 slides and a 28-page legend covering selected examples of microbial control projects, application techniques, bioassay, and production and formulation of microbial control agents.

The slide atlas can be ordered by sending a cheque, U.S. money order, or an international bank draft (drawn on a bank with U.S. affiliations) in the amount of U.S. \$50 (add \$5.00 for overseas delivery). Make the cheque payable to the Society for Invertebrate Pathology. Mail orders to Dr. John Vandenberg, USDA-ARS Plant Protection Research Unit, U.S. Plant Soil & Nutrition Lab., Tower Road, Ithaca, NY 14853 USA.

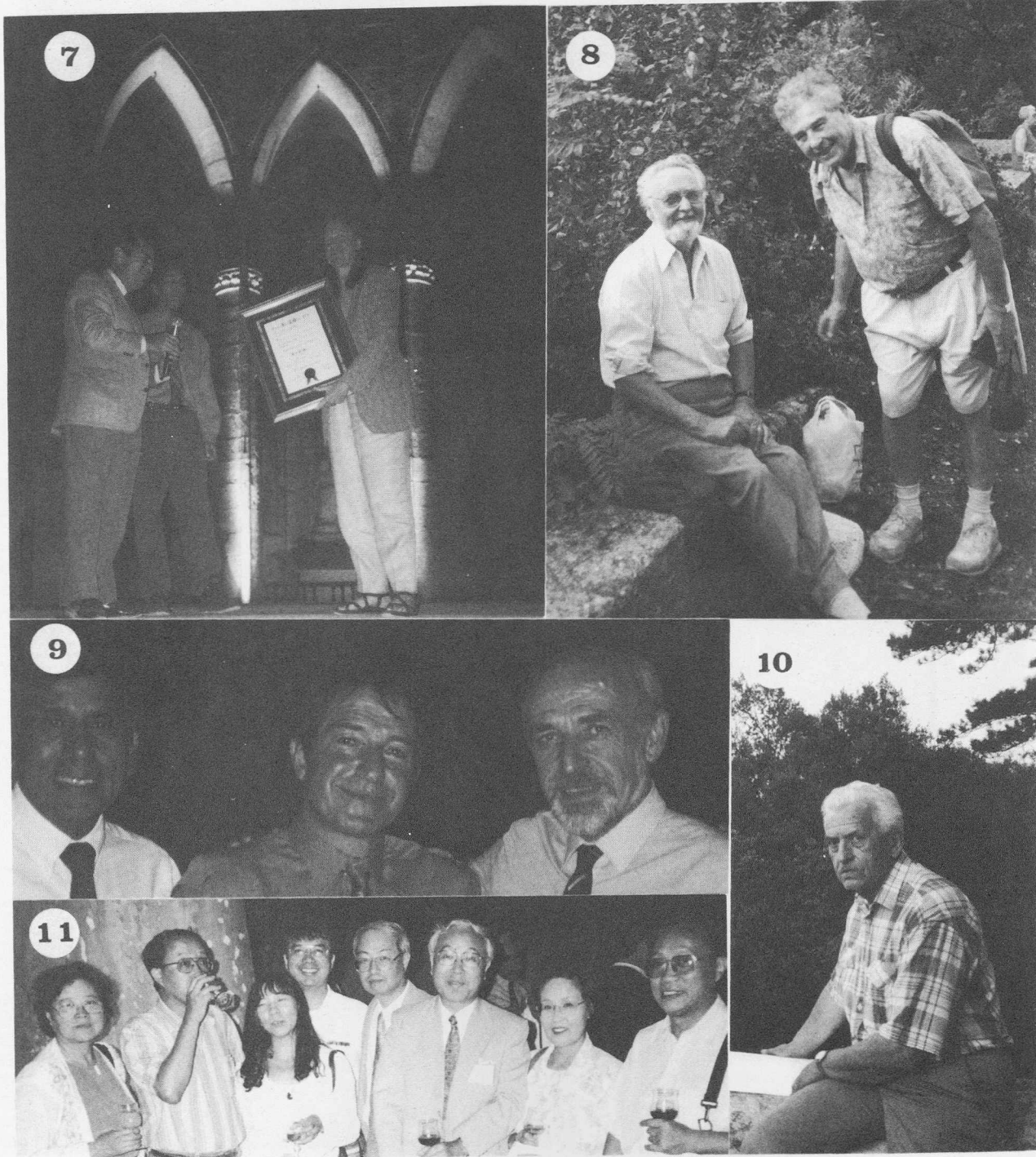
Editors' Note: Many thanks to those who submitted material to this Newsletter. Special thanks to B. Granados, T. Iizuka, and Y. Ziniu for submitting photos.

Deadline for next Newsletter is January 15, 1995.



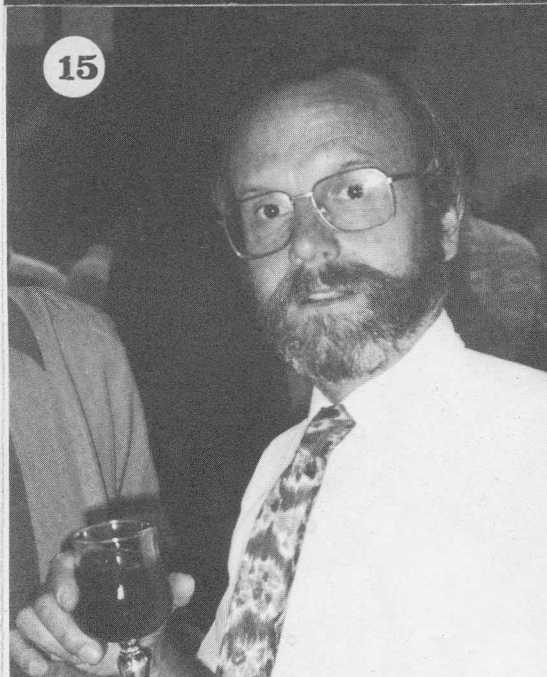
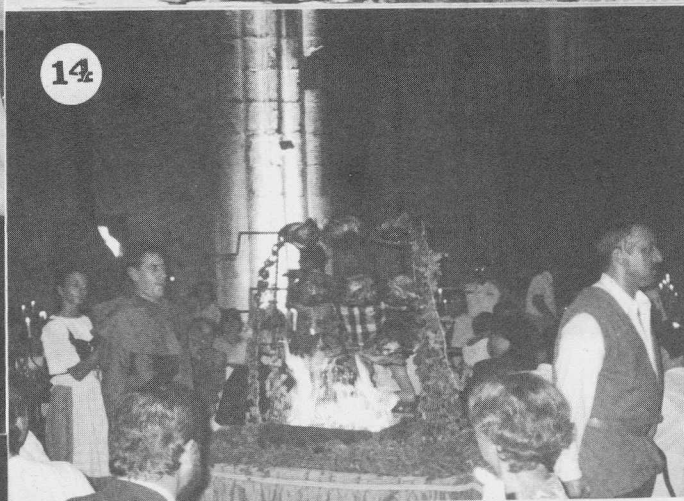
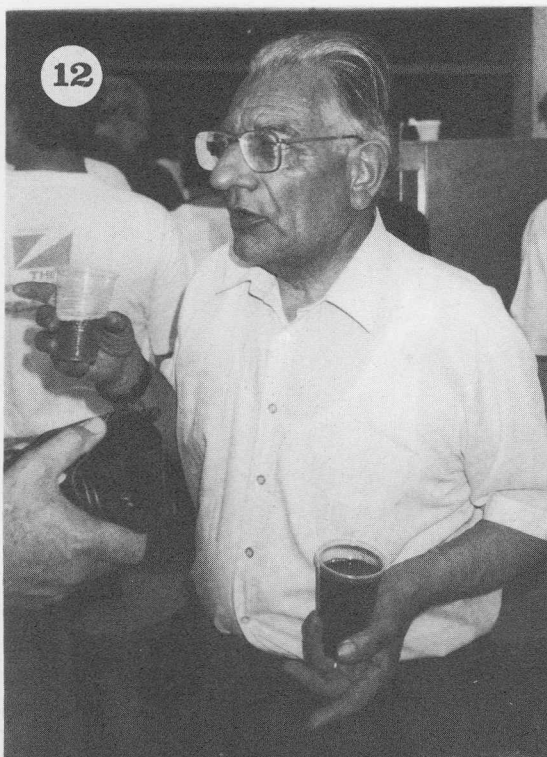
1. Organizing Committee and volunteers during lunch break at Le Corum; 2. William Cheliak, Hisanori Bando and Serge Belloncik; 3. Quhou Chen and Roger Hou; 4. Council taking lunch break at Le Corum; 5. Opening ceremonies; 6. Toshi Iizuka and Jergoen Van Rie.

PHOTOS FROM MONTPELLIER



7. Richard Daoust presenting Dr. Lois Miller with Founder's Lecture Award at the Abbey of Valmagne; 8. Constantin Vago and Peter Faulkner; 9. Bob Granados, Max Bergoin and Chris Payne; 10. Jaroslav Weiser; 11. Delegates from China.

PHOTOS FROM MONTPELLIER



12. Denis Burges (Beer in one hand and wine in the other - what a party!); 13. A cool dip below the Pont du Gard; 14. Dinner's coming!; 15. Bernard Papierok; 16. Chris Lomer, Christiaan Kooyman, Nina Jenkins, Matthew Thomas and Dave Moore; 17. Group on post-colloquium tour of Spain.

PHOTOS FROM MONTPELLIER