



NEWSLETTER

society for invertebrate pathology

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February 1994



Pont du Gard (20 B.C.) over the Gardon River where the 5 km race will end and the BBQ will then take place

VITH INTERNATIONAL COLLOQUIUM
ON INVERTEBRATE PATHOLOGY
AND MICROBIAL CONTROL

AND

IIND INTERNATIONAL CONFERENCE
ON *BACILLUS THURINGIENSIS*
MONTPELLIER, FRANCE

28 AUGUST - 2 SEPTEMBER 1994

The planning of the Vith ICIP-IInd Conference on BT has reached an advanced stage. An encouraging response has been received to the 1st announcement form with 300 replies. A registration package with registration forms, abstract submission instructions, accommodation and optional event information is included in this Newsletter as Supplement No. 3.

Regarding scientific aspects, the following program has been established:

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Plenary non-concurrent morning sessions: These sessions will be held in the large Pasteur auditorium.

- Molecular Genetics of Pathogens
- Symbionts and Endosymbionts
- Insect Resistance to Pathogens and Resistance Management
- Mode of Entry of Pathogens
- Strategies for the Production of Pathogens

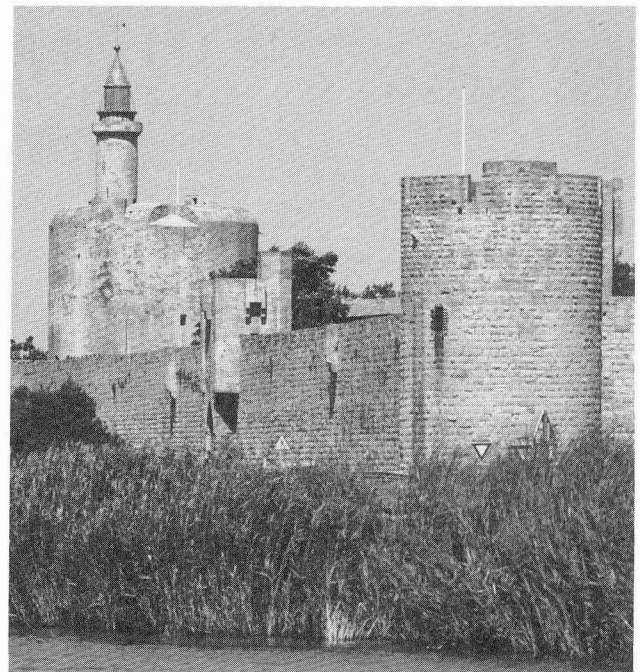
Symposia: Up to 5 concurrent sessions are planned. The titles of some symposia are still provisional.

- Entomopathogenic Nematodes: Ecology and Biological Control
- Fundamental Aspects of Entomopathogenic Nematodes
- Entomopathogenic Bacteria Symbiotic with Nematodes
- Biological Control of Scarabs
- Novel Bacterial Toxins
- Bacterial Control of Insect Vectors and Pests
- Mode of Action of Bacterial Toxins and Resistance
- New Strategies for Vectors and Pest Control
- Engineering, Bacterial Toxins
- Delivery Systems for Bacterial Toxins
- Microbial Control of Soil Insects
- Safety of Exotic Fungi
- Entomopathogenic Fungi in Tropical Environments
- New Perspectives for Fungi as Biocontrol Agents
- Genetics of Fungi and Genetic Ecology
- Defense Reactions in Insects
- Recombinant Insect Viruses
- Large Scale Production of Viruses
- Marine Invertebrate Pathology
- Novel Microbiological Control of Vectors

Workshops: The Microsporidia Division will hold an evening workshop entitled "Cellular and molecular biology of microsporidia in cell culture" while the Microbial Control Division will hold an evening workshop entitled "Application technology of microbial pesticides."

All plenary and symposium presentations are invited papers. Non-invited papers will be given at relevant contributed paper sessions or presented as posters; there will be room for 200 posters. Invited speakers will be allowed up to a maximum of five pages, whereas abstracts of contributed papers and posters should be limited to one page. The authors should conform to the instructions regarding format.

Social Events: As previously mentioned, the social events will include the Sunday evening mixer party, the Wednesday afternoon excursion to the medieval city of Aigues-Mortes and, in the evening, the 5 km race at the Roman aqueduct "Pont du Gard" followed by a BBQ, and the banquet on Thursday evening. A list of optional pre-, during and post-colloquium tours is also provided for accompanying person and participants in the registration package (Supplement No. 3).



XIIIth century fortification of Aigues-Mortes with the famous Tower of Constance

Accommodation: A list of hotels offering special rates (including breakfast) is provided in the issue along with a map indicating their location. Other hotels are listed separately. In order to benefit from special rates, reservations should be made before 30 April directly to the hotel of choice and should mention the participation to the VIth ICIP. **No hotel reservation will be made by the local organizing committee.** Budget accommodations (400 FF for one week) will also be available at University student residences. Since Montpellier is a tourist area, it is recommended to make hotel reservations as soon as possible.

Registration: As it appears on the registration form, the registration fees have been slightly increased compared to prices previously announced. This has been done to facilitate registration handling and to provide free participation to the complete social program: welcome party, excursion and banquet (except the 5km race and T-shirt) to all participants. In addition, we hope that the reasonable accommodation rates which have been negotiated will facilitate the attendance for all those wishing to participate in the Colloquium.

Dr. Max Bergoin (Chair)
The Local Organizing Committee
Laboratoire de Pathologie Comparée
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Don't Forget to Vote

Ballots have been or soon will be mailed out by FASEB to all paid-up members. This is your chance to ensure that the best possible candidates are chosen for Council. Candidates for SIP Offices and Honorary Membership were featured in the last Newsletter (Vol. 25, No. 3, October, 1993). Exercise your right as a member of the Society for Invertebrate Pathology. Vote and return your ballots before the deadline.

HISTORICALLY SPEAKING

Do You Remember When----?

Elizabeth W. Davidson
Assistant Newsletter Editor

As we approach our 27th year as a Society, and our 26th Annual Meeting, it is appropriate to look back and remember old friends and colleagues, and to reflect on where we have been and where we are going. By looking back at the SIP Newsletters, we can enjoy a candid look at the Society as it grew. Al Sparks described the founding of the Society in the June, 1992 Newsletter. We will begin here with the first Annual Meeting, which was held in Columbus, Ohio in September, 1968. At this meeting, and through 1977 we met with the American Institute of Biological Sciences. In years when we met outside the USA we also held small meetings with AIBS. AIBS maintained our

membership list, provided us with mailing labels, and provided the facilities for meetings.

In Columbus the first President, Ed Steinhaus, delivered the Presidential Address, "Be Favorable to Bold Beginnings", to a group of about 100 attendees. Jaroslav Weiser wrote a talk entitled "10 years from Prague to Columbus", delivered by John Briggs. Papers were presented by persons who are familiar names to many of us, including P. Johnson, F. Hink, T. Cheng, P. Luthy, R. Soper, R. Colwell, F. Perkins, G. Stairs, H. Dulmage, F. Bang, W. Rothenbuhler, A. Sparks, D. Roberts and R. Granados. The first Council meeting lasted 10 hours- which was attributed to the loquaciousness of the Councillors. Some things never change! Incorporation of the Society in the State of Maryland, important for legally recognised tax status, was approved. The first Banquet was held. In 1968 the Society had 255 members in 18 countries.

In 1969 the Society met at Burlington, Vermont, with Tom Cheng acting as Chair. Forty-five papers were presented, an increase of over 50% from the preceding year, and the Society boasted 415 members in 29 countries (but only Canadian \$707 in the Treasury). The new President, Al Sparks, presented a "sagacious and inspiring" talk at the banquet, and at this meeting the traditions of a happy hour and a barbeque were begun. The barbeque was described as having "lots of sauce"- yet another tradition! The Microsporidia Division was formed, with Bylaws being presented to Council at the next meeting.

Several important milestones occurred in 1969 and 1970. The Center for Pathobiology was established at Irvine, California, with Ed Steinhaus as the Director. Then, on October 19, 1969, Ed Steinhaus died suddenly, leaving behind a remarkable record of accomplishment beginning with his PhD at Ohio State University in 1940, a short tenure with the US Public Health Service in Hamilton, Montana, a Professorship at the University of California at Berkeley where he trained many pathologists who went on to influence the field, and finally directorship of the Center for Pathobiology at Irvine. A member of the U.S. National Academy of Sciences, Ed influenced the development of invertebrate pathology enormously by publication of *Insect Microbiology*, *Insect Pathology*, the 2-volume *Advanced Treatise on Insect Pathology*, and as founder of the *Annual Review of Entomology* and the *Journal of Insect (later Invertebrate) Pathology*.

Upon the death of Steinhaus, Tom Cheng was appointed Editor of the *Journal of Invertebrate Pathology*, a post which he held for 23 years. In 1970 a Center for Pathobiology was instituted at Lehigh University, with Tom as the Director.

We met in 1970 at the University of Maryland, and boasted 476 members in 34 countries. Our first meeting outside the USA as a Society was in Montpellier, France in 1971. There were 155 participants from 24 countries attending this meeting, which was held jointly with the newly organized International Organization of Biological Control. The 1971 meeting was chaired by Max Bergoin, who is also organizing our 1994 meeting when we once again meet in Montpellier. Important events of 1971 included the registration of the *Heliothis zea* nuclear polyhedrosis virus in the US, the election of our SIP President, Professor Vago, to the French Academy of Sciences, and publication of the Steinhaus and Martignoni Glossary of Terms in Invertebrate Pathology. The Registry of Tumors of Lower Animals, directed then as now by John Harshbarger, announced the publication of its report; a new laboratory of Insect Pathology was established at the Glasshouse Crops Research Institute in Littlehampton, England under the direction of W.A.L. David; and the first International Standard for *Bacillus thuringiensis*, E61, was made available from Institut Pasteur in Paris. Bioassay procedures were under development by Howard Dulmage. A meeting was held in Helsinki to discuss Bioengineering and Biotechnology for biological control of insects, introducing these concepts to our field. A Working Group on Safety of Microbial Control Agents, under the chairmanship of Marshall Laird, met for the first time at Montpellier. This Working Group continued to be active through 1988, eventually accumulating a repository of documents at Memorial University which formed the basis of a book on the Safety of Microbial Control Agents edited by the three chairs of the Safety Working Group, Marshall Laird, Lerry Lacey and Betty Davidson.

Marian Brooks was our local arrangements chair when we met in Minneapolis in 1972. A Laboratory of Biocontrol was established in Darmstadt, Germany in April, 1973, under the directorship of J. Franz, and including colleagues J. Huber, A. Huger, A. Krieg, G. Langenbruch and E. Muller-Kogler. Discussions began concerning the new concept of computer-aided information systems for pathogens. In 1973, 185 participants from 23 countries met at St. Catherine's College, Oxford, England, which was both an Annual

Meeting and an International Colloquium. Dr. Vago, as Chair of the Committee on International Colloquia on Insect Pathology and Microbial Control, established in 1962, declared this committee terminated and turned over the responsibility for future Colloquia to SIP. Denis Burges and Norman Hussey hosted a pre-conference open house at the Glasshouse Crops Research Institute in Littlehampton. The Division on Microsporidia proudly announced the establishment of the International Protozoan Type Slide Collection to be housed at the Smithsonian Institution. President John Briggs announced that SIP would become the Commission on Invertebrate Pathology of the International Union of Biological Sciences; Dr. Briggs is still our representative to this organization. A 2-day session was also held with AIBS in Amherst, Massachusetts, and SIP organized a session at the International Congress of Parasitology in Munich in the same year.

Our meeting in Tempe, Arizona in June of 1974 still ranks as the hottest SIP meeting on record—temperatures of 115° F (46°C) kept everyone indoors. We met again with AIBS in Corvallis, Oregon, in 1975, where our first poster session was tried, but failed as only 6 posters were submitted. The first abstract form was distributed this year, and the first separate abstract booklet was published in a format similar to that currently used. Many members were involved in a meeting of the New York Academy of Sciences on Pathobiology of Invertebrate Vectors of Disease, and a Directory of Courses in Invertebrate Pathology was published in the Newsletter. Art Heimpel, our President, pled for members to vote to increase the membership fee (from \$5 to \$6), however not enough ballots were received to approve this increase. A dues increase to \$7 was finally approved in 1977.

Another International Colloquium was held in conjunction with our 1976 meeting in Kingston, Canada. Proceedings were published from this meeting, and were sold to our nearly 600-strong membership. Much discussion at Council meeting revolved around the declining subscriptions to the JIP, the type of papers to be published in the JIP, and citation of our Abstracts as publications. Under the Presidency of Tom Angus, it was decided that International Colloquia should be held every 4 years with the exception of 1978. The Society treasury had dropped to ca. \$3000, and nearly 30% of our members were in arrears in their dues. In February of 1977, the dues increase was finally approved. The Douglas fir tussock moth NPV was registered in this

year. At our Annual Meeting in East Lansing, Michigan, spirited discussions broke out over the Forsberg Report on effects of *B. thuringiensis* on environmental quality, published by the National Research Council of Canada.

Ground work was initiated by Seth Young in 1977 to establish a USDA/CSRS Southern Regional Project in the U.S. devoted to use of microbial control agents. The first annual meeting of Regional Project S-135 (currently S-240) entitled "Development of Microbial Agents for Use in Integrated Pest Management Systems" was held in Atlanta in February of 1978. Although composed primarily of scientists from land-grant institutions throughout the U.S., this regional project has always involved representatives from industry, the USDA, and other non-university affiliated groups as well as pathologists from other North American countries such as Canada and Mexico.

The 1978 International Colloquium and Annual Meeting in Prague, Czechoslovakia marked 20 years since the first International Colloquium for Invertebrate Pathology was held in Prague, and the 10th SIP Annual Meeting. This was our only meeting in Eastern Europe, and provided for many of us a unique opportunity to visit this beautiful city with its splendid castles and cathedrals, and to discuss science with colleagues from Eastern Europe. Our host in Prague, Jaroslav Weiser, received the gavel as President. The week preceding the Society meeting, the World Health Organization Scientific Working Group met in Prague to lay plans for research on microbial control of vectors. A number of important decisions were made by Council at Prague; a proposal for a Division on Microbial Control was received; an Archivist was appointed (Wayne Brooks still serves the Society in this capacity), and Council was beginning to consider whether our affiliation with AIBS was worthwhile. The Treasury boasted \$4,500, and we numbered 686 members, although only about half had paid their dues.

In 1978, and in many following years, Council engaged in long discussions with the JIP Editor, Tom Cheng, over the relationship between the Society and the Journal. Subscriptions to the Journal continued to fall almost yearly. A Committee was formed in 1982 to present the Journal with suggestions for increasing subscriptions and keeping costs of the Journal down, as well as warming the relationship between SIP and JIP. The Editor, on behalf of Academic Press, replied to these suggestions but relationships continued to cool. In

1987 the Publications Board Chair, Jim Harper, along with John Henry met with Academic Press and reported very positive interactions, however it was clear that SIP had no input on the management of the Journal. An ad-hoc committee of several members chaired by Richard Humber polled the membership concerning attitudes toward the Journal. Results of this poll, along with activities of the Publications board, apparently led to the decision by Academic Press to remove "Published under the Auspices of the Society for Invertebrate Pathology" from the cover of the Journal as of January, 1988. Society members still receive a reduced price for individual subscriptions to the JIP, however, and many continue to serve on the Editorial Board. Academic Press also instituted changes in manuscript handling and the review process that significantly improved SIP member satisfaction with the Journal.

Arizona may have been our hottest meeting, but Gainesville in 1979 was certainly the most humid! The Treasurer, Joe Maddox, warned that the Society was losing ground financially, with a balance of only \$2900 in the Treasury. A dues increase was recommended, which was approved in 1980, resulting in dues to US members of \$12 (\$11 to non-US members). The Workshop on Microbial Control held an organizational meeting beginning the process of establishment as a Division.

The eruption of Mt. St. Helens was not the only stir in Seattle in 1980, as the Society found itself suddenly without a site for our meeting and called upon Al Sparks, for help in organizing a meeting on short notice. The original AIBS site, Irvine, California, had no members who would host the meeting, and then AIBS changed its venue to Tucson, Arizona where we also had no members. In 1981, Council, under the Presidency of Phyllis Johnson, terminated our affiliation with AIBS as of 1982, feeling that we were now mature enough to manage our own meetings and membership affairs. We tried a poster session once again, with the outstanding turnout of 3 posters! At the meeting in Bozeman, Montana in 1981, Division status was granted to Microbial Control and its bylaws were published. The Safety Working Group also considered seeking Division status, but were persuaded by Mauro Martignoni that it would be simpler to become a working group under the Division on Microbial Control. The Constitution and Bylaws were revised and changes were finally approved by ballot in 1983. There were 644 members listed, but again only about 60% were paid-up; nonetheless the Treasury had a healthy balance of \$6000, partly because the Seattle meeting was the first to return a profit to the

Society. Perhaps the most memorable event of the Bozeman meeting was the sight of the entire Society floating down the Madison River in rafts. One Swiss-Canadian rafting group became lost and continued well past the pull-off point, ending up with a rather greater adventure than originally planned, involving rattlesnakes!

The International Colloquium and Annual Meeting at Brighton, England in 1982 represented a further stage in maturity of the Society. Nearly 400 persons attended this meeting, and the Proceedings formed a 526-page book which was sold to individuals and libraries around the world. The first papers on the genetics of *Bacillus thuringiensis* were presented at this meeting, heralding the era of biotechnology that has led to remarkably rapid developments in the field of microbial control. An anonymous donor contributed \$50 to establish the Founders Lecture, which honored Kenneth Smith and was delivered by Claude Rivers. This fine tradition continues to the present. The remarkable attendance at the Brighton meeting also convinced Council of the wisdom of frequently meeting outside North America.

The first 5K race was held at our 1983 meeting in Ithaca, New York, another tradition that we enjoy to the present. What better chance for our graduate students to show up the old Prof! Our colleagues at the Boyce Thompson Institute as well as Cornell University were our hosts. The Color Slide Atlas of Invertebrate Diseases was developed by a committee chaired by Randy Gaugler, and was presented for sale to the Society in 1984. Problems of foreign currency exchange were discussed by Council, a topic which has concerned our international society since its founding. This problem was finally alleviated in 1992 by the establishment of credit card payment. The Treasury contained a healthy \$19,000, and the membership had levelled off at 665 members.

It has been suggested that SIP is an appropriate acronym for the Society for Invertebrate Pathology, and members attending the Davis, California meeting had an opportunity to do a lot of sipping on our Napa Valley wine tasting tour. President Wayne Brooks discussed 100 years of studies of Microsporidia in his address to the 170 assembled members. A Working Group on Comparative Tumor Pathology, chaired by John Harshbarger, met in 1984 and for several subsequent years, bringing together scientists interested in this field, and offering hands-on workshops. In 1984, the Entomological Society of America instituted a section on

Insect Pathology, providing another excuse for our North American members to get together during the winter. Academic Press was purchased by Harcourt, leading to a decline in financial support for the JIP, and adding to concerns for the health of the Journal. The Glossary of Terms Used in Invertebrate Pathology in Five Languages, a long-term project of a committee headed by Mauro Martignoni, was finally published by the US Department of Agriculture.

New biotech companies dealing with insect pathogens began to appear, and by 1985, representatives from over 20 companies attended our meeting, including major agrichemical companies which were investigating alternatives to chemical pesticides. President Denis Burges addressed this exciting new field in an editorial in 1985, citing developments in genetic manipulation of *B. thuringiensis* and viruses, monoclonal antibodies, and the baculovirus cloning system. At our 1985 meeting in Sault Ste. Marie, Ontario, 165 members from 13 countries took a last opportunity to visit the old Insect Pathology Research Institute building, established in 1948, which was later absorbed into the Forest Pest Management Institute. Cameron, Bird, McLeod, Angus, Bergold, and Krywienczyk are among the names associated with the Insect Pathology Institute. Bergold was honored by the Founders Lecture given by Tom Angus. Our normally serious-minded President, Denis Burges, seems to have attracted the attentions of Morris dancers at the Brighton banquet and a belly dancer in Sault Ste. Marie, bringing out an unexpected side of Denis!

A New Initiatives Committee, chaired by Harry Kaya, made several suggestions that were eventually adopted, including a Forum section in the Newsletter and a Student Paper Award. The latter was first presented in 1987, and has become an important mechanism for recognising our outstanding students who present their research at Annual Meetings. A membership list and the updated Directory of Invertebrate Pathologists were distributed to members in 1986. A meeting in Darmstadt, Germany in 1986 commemorated the 75th anniversary of the description of *Bacillus thuringiensis* by Berliner.

A contribution of \$3500 from an anonymous member led to the establishment of the SIP Endowment Fund, the proceeds of which are used to support memberships for scientists who are unable to pay in US funds. Ten to 14 members have been supported annually by the proceeds of the Endowment.

The Society met in the quiet and beautiful surroundings of a converted nunnery in Veldhoven, The Netherlands for our 1986 Annual Meeting and International Colloquium. The large Proceedings volume produced by this meeting was sent to our nearly 800 members. President Harshbarger reviewed past significant developments in invertebrate pathology with impacts far beyond our field, including medicine, ecology and cancer research. For the first time, our membership and treasury data were computerized at the Boyce Thompson Institute by our Treasurer, Bob Granados. The Treasury had grown to over \$40,000, and the membership had grown by 119 members.

At La Jolla, California in 1986, the program had grown to 135 papers, 6 symposia and 10 paper sessions, with 260 participants. In an effort to avoid overlap of paper sessions, talks were reduced to 12 minutes from the previous 15 minutes. Posters were catching on as a vehicle to present information, and two poster sessions were offered. For the first time, costs for the mixer, beach barbeque and banquet were included in registration fees, a practice which continues to the present. The impact of molecular biology was beginning to be felt in all areas of our science, and Helen Whiteley highlighted these new developments in her Founders Lecture. A dues increase to \$15 (\$6 for students) was approved by the membership, along with a constitutional amendment making the editors of Society publications nonvoting members of the Publications Board. The Division on Microsporidia began work on an Atlas of Microsporidia Ultrastructure, and supported the translation into English of Issi's 1986 Russian monograph on Microsporidia taxonomy. This translation was completed by Jerzy Lipa and published in 1991.

Student awards had a prominent place at our meeting in 1989 when over 200 participants from 15 countries enjoyed the hospitality of the University of Maryland. The Microbial Control Division began the task of putting together a Color Slide Atlas on applied microbial control, which was finally ready for sale in 1992. A reporter from National Geographic Magazine interviewed several members for a story on modern uses of bacteria which finally appeared in 1993. The Treasury reported a loss for the second year in a row.

The US Environmental Protection Agency approved field testing of the first two genetically engineered microbial control products: the *Autographa californica* NPV produced by the Boyce Thompson Institute in 1989

and Mycogen Corporation's MVP product in 1990. Max Summers was elected a member of the U.S. National Academy of Sciences, in recognition of his contribution to the development of the baculovirus cloning system, which has proven valuable for the expression of many eukaryotic gene products.

By 1988 the Society had begun to realize that we had outgrown the capacity of our loyal volunteers, and in particular it was increasingly difficult to find candidates for Treasurer because of the burdens of this office. A search was begun for an executive secretary or business manager. After reviewing several possibilities, in 1991 Council entered into a contract with the Federation of American Societies of Experimental Biology (FASEB), which currently handles our financial and membership affairs and prints and mails our Newsletter. Credit card payment was made possible by this contract, and the office of Treasurer has been relieved of much of the tedious membership tasks which marked this office in earlier years.

President Don Roberts presided over our next International Colloquium and Annual Meeting in Adelaide, Australia in 1990, our first meeting in the Southern Hemisphere. The Society boasted ca. 900 members by this year. A very international group enjoyed the fine facilities of the Adelaide Conference Center, where T.D.C. Grace was honored by the Founders Lecturer, Karl Maramorosch, reminding us of the great impact of cell culture on pathology. Memories of the Adelaide meeting will unfortunately always include tragedy, as our newly-elected Treasurer, Charles Reichelderfer, was struck by an automobile while crossing in front of the Conference Center and died a few days later. Don Roberts, who had just retired as President, bravely assumed the role of Treasurer until the next election.

The Society returned to Arizona in 1991, this time to the much cooler altitude at Northern Arizona University in Flagstaff. Twenty-one countries were represented in the 220 participants, most of whom chugged to the Grand Canyon aboard a steam train, enjoyed Mexican food, Mariaches and Country Western music, and were "westerners" for a week. In 1991 Tom Cheng retired from the position of JIP Editor after 23 years, and the new Editor, Carol Reinisch, stated that feedback from the SIP concerning the Journal was welcome. Carol has moved to a three-reviewer format for all manuscripts submitted and in 1993 appointed a new eight-member

Board of Associate Editors to assist in the review process.

The wonderful old city of Heidelberg, Germany welcomed us in 1992, when over 400 persons from 35 countries once again proved that meetings outside North America are very successful. In addition to attending to the business of over 300 papers and 13 symposia, members found the time to float down the Neckar River, and dine high above the city at our banquet (although we were nearly washed away by a sudden storm). Tom Angus told us about the founding of the Society 25 years earlier in the Jubilee speech presented in the beautiful Aulte Aule (Auditorium) of the old University. Betty Davidson compared the Society to a family in her Presidential Address, before handing the gavel over to the new President, Chris Payne.

Members approved a dues increase to \$30 per year in 1992, and the Treasury had a healthy \$58,000 balance due largely to income from meetings. We were 898 members strong, with members in 50 countries. The Microbial Control Division produced a Directory of Industries Involved in Development of Microbial Control Products, listing over 40 companies and 60 products. The Color Slide Atlas of Microbial Control was also ready for sale.

An updated Membership Directory was provided in 1993, including fax numbers for the first time. Colleagues from the North Carolina Universities hosted the Society in the beautiful mountainous setting of Asheville. Highlights for the over 300 participants were the barbeque and strenuous hike up Chimney Rock, and the banquet and candlelight tour at the Biltmore Estate. Members are now looking forward to yet another International Colloquium in 1994, when we meet once again, after 23 years, in Montpellier, France.

This history of the Society is derived from our Newsletters, which have been faithfully sent to members since the Society's inception. Editing the Newsletter is one of the biggest responsibilities in the Society, and has been undertaken by the following members: H.C. Welch (1968-1969), John Harshbarger (1969-1971), Leo Van der Geest (1971-1973), Bea Weaver (1973-1976), Aristotle Domnas (1976-1980), Sardar Sohi (1980-1984), Gary Wilson (1984-1987), David Tyrrell (1987-1991), Betty Davidson (1991-1993), and Mark Goettel (present). Although the format of the Newsletter has changed and become more modern with time, some things have changed very little. The SIP logo first

appeared in 1969; attempts were made in 1978 and again in 1989 to find a replacement for this logo, but today it remains the same. The abstract form and format of the Annual Meeting Abstracts booklet are essentially the same as they first appeared in 1973. The first photograph to appear in the Newsletter accompanied the obituary of Ed Steinhaus in 1969. Informal photos from the meetings first appeared in 1973, and continue to provide an album of memories. Book announcements, Division Reports, positions available and desired, and announcements of meetings other than our own have always appeared. Changes of address allowed us to follow our colleagues to new positions. Many laboratories have been highlighted in the Newsletter, and recently companies producing microbial control products have been visited as well. And, finally, obituaries have appeared, allowing us to give a final tribute to our colleagues and friends. Among the obituaries appearing in the Newsletter have been the following: E. Steinhaus, E.C. Sutor (1969), L.A. Stauber (1973), J.R. Olive (1974), J.M. Cameron (1975), R-P. Dollfus (1976), E. Masera (1977), A.M. Heimpel (1979); K. Hughes (1980), F. Bang (1981), G. Bucher (1982), F.T. Bird, T. Clark (1984), O. Lysenko, E.I. Hazard, B. Hertlein (1985), G. Balouet, W. A. Ramoska (1986), I. Harpaz (1987), K. Purrini, Gao Shangyin (1989), C. Reichelderfer, W. Kellen (1990), H. Whiteley, A. Chittick (1991), M. Rogoff, P.A. Van der Laan (1992), W. Yendol and H. Dulmage (1993).

I am grateful to John Briggs for providing the Newsletters on which this history is based, and to John, Al Sparks and Wayne Brooks for critical review. I hope that other members may find this history of the Society for Invertebrate Pathology as fascinating to read as it was to write, and to live.

If other members wish to contribute memories of the Society, or corrections to this narrative, they are encouraged to provide their comments for publication in the Newsletter.

Annual Meetings of the Society for Invertebrate Pathology

- 1967 Seattle, Washington
--Founding Meeting, May 9
- 1968 Columbus, Ohio
--First Annual Meeting, Sept. 3 - 7
- 1969 Burlington, Vermont, Aug. 17 - 22
- 1970 College Park, Maryland
--International Colloquium, Aug. 25 - 28

1971	Montpellier, France, June 16 - 19	1983	Ithaca, New York, Aug. 7 - 11
1972	Minneapolis, Minnesota, Aug. 27 - Sept. 1	1984	Davis, California, Aug. 5 - 9
1973	Oxford, England --International Colloquium, Sept. 3 - 7	1985	Sault Ste. Marie, Ontario, Canada, Aug. 4 - 8
1974	Tempe, Arizona, June 16 - 21	1986	Veldhoven, The Netherlands --International Colloquium, Aug. 18 - 22
1975	Corvallis, Oregon, Aug. 17 - 22	1987	Gainesville, Florida, July 19 - 24
1976	Kingston, Ontario, Canada --International Colloquium, Aug. 29 - Sept. 3	1988	La Jolla, California, Aug. 14 - 18
1977	East Lansing, Michigan, Aug. 21 - 16	1989	College Park, Maryland, Aug. 20 - 24
1978	Prague, Czechoslovakia --International Colloquium, Sept. 11 - 17	1990	Adelaide, Australia --International Colloquium, Aug. 20 - 24
1979	Gainesville, Florida, Aug. 26 - 30	1991	Flagstaff, Arizona, Aug. 4 - 9
1980	Seattle, Washington, July 27 - Aug. 1	1992	Heidelberg, Germany, Aug. 16 - 21
1981	Bozeman, Montana, Aug. 17 - 21	1993	Asheville, North Carolina, Aug. 1 - 6
1982	Brighton, England --International Colloquium, Sept. 5 - 12	1994	Montpellier, France --International Colloquium, Aug. 28 - Sept. 2

Officers of the Society for Invertebrate Pathology

Year	President	Vice-President	Secretary	Treasurer	Trustees*
1967 (Founder's Meeting)	E. Steinhaus	A. K. Sparks	A.M.Heimpel	A.M.Heimpel	T.A. Angus, M. Martignoni, C. Sindermann, V. Sprague
1968	A.K. Sparks	C. Vago	H. Welch	H. Welch	K. Aizawa, A.M.Heimpel
1970	C. Vago	J.D. Briggs	P.A. Van der Laan	C. Ignoffo	J. Franz, M. Laird
1972	J.D. Briggs	A.M. Heimpel	M. Brooks	Y.A. Tanada	M. Bergoin, M. Martignoni
1974	A.M.Heimpel	T. A. Angus	J. Harshbarger	G. Stairs	L.Van der Geest, J.Weiser
1976	T. Angus	J. Weiser	W. Brooks	J. Paschke	H. Dulmage, Y.A. Tanada
1978	J. Weiser	P. T. Johnson	J. Henry	J. Maddox	H. D. Burges, M. Mix
1980	P. T. Johnson	W. Brooks	O. Morris	J. Harper	T. Couch, P. Luthy
1982	W. Brooks	H. D. Burges	J. Adams	A. Rosenfield	J. Henry, H. Watanabe
1984	H. D. Burges	J. Harshbarger	E.W. Davidson	J. Fuxa	B. Federici, J. Couch
1986	J.Harshbarger	D. Roberts	A. Cali	R. Granados	C. Payne, G. Payne
1988	D. Roberts	E.W. Davidson	R. Anderson	F. Kern	D. Pinnock, P. Faulkner
1990	E.W.Davidson	C. Payne	L.A. Lacey	C.Reichelderfer (D.Roberts)	T. Iizuka, G. Soares
1992	C. Payne	R. Granados	R. Daoust	H. Kaya	R. Anderson, L.A. Lacey

*Trustees serve for four years; two are elected on each ballot.

New *Bacillus thuringiensis* Strain Active Against Corn Rootworms

Johnson et al. (J. Econ. Entomol. 86:330-333, 1993) report the recent discovery of a Bt strain (EG4961) that is active against the adults and larvae of southern corn rootworm, *Diabrotica undecimpunctata howardi* Barber, a species that is relatively unaffected by the previously described CryIIIa insecticidal crystal protein. The discovery of EG 4961 provides for the possibility of microbial-based control strategies for *Diabrotica* spp.

From IOBC Newsletter 15(3)

EcoScience and Chinese Academy of Agricultural Sciences Sign Long-Term Pest Control Collaboration

WORCESTER, MA, January 20, 1994 - EcoScience Corporation today announced that it has entered into a long-term collaboration with the Institute of Biological Control (IBC) of the Chinese Academy of Agricultural Sciences in Beijing, Peoples Republic of China (PRC), to develop and commercialize microbial agents and beneficial insects for pest control. The CAAS is a governmental agency that sets national agricultural research priorities, assists in agricultural development at the provincial level, and supports the Ministry of Agriculture in formulating national and international agricultural policies.

The collaboration includes an initial technical development and screening program (Phase I) and the formation of a PRC based joint venture operating company (Phase II). It is anticipated that the joint venture will be operational before the end of the first quarter 1995. The joint venture will serve to contract for research, provide for transfer of technology, and import and export commercial products from the partners.

Under the terms of the agreement, IBC will screen its extensive fungal strain collection against a series of EcoScience targeted insects, collect soil samples throughout various regions of the PRC and conduct bioassays on new isolates. In addition, the IBC will manufacture specified fungal strains for EcoScience's evaluation and use. EcoScience will fund these programs and receive a right of first refusal to commercialize, outside the PRC, all biopesticide developments.

EcoScience Submits EPA Registration Application for Soft Bodied Insect Spray

WORCESTER, MA, January 26, 1994 -- EcoScience Corporation today announced that it has filed for registration with the U.S. Environmental Protection Agency (EPA) of its Back-Off™-1 fungal based sprayable system for control of soft bodied insects in greenhouses. Back-Off-1 utilizes *Metarhizium anisopliae*, the same active ingredient used in the Company's Bio-Path™ Cockroach Control Chamber registered by the U.S. EPA in May of last year.

Back-Off-1 is a sprayable fungal system lethal to aphids and whiteflies which is applied through conventional application systems. Aphids and whiteflies cause significant damage to ornamental and food crops grown in greenhouses, gardens and commercial agriculture. Synthetic chemicals commonly provide inadequate control of these pests.

In greenhouses, aphids and whiteflies are a serious problem on poinsettias, chrysanthemums, cut and potted flowers as well as vegetables. The Company has conducted a series of field trials showing excellent control of these pests for both greenhouse and field uses. EcoScience anticipates filing a registration for additional uses of Back-Off-1 for nursery and specialty crops later this year. The Company estimates that the market for all uses of Back-Off-1 exceeds \$200 million.

"Back-Off-1 will be an excellent addition to our current product line," said Michael A. DeGiglio, President of the Company's Agro Dynamics unit, a leading marketer of products to greenhouses. "This is the first of a series of biopesticides Eco-Science is developing for the greenhouse market. These products will enable Agro Dynamics to become one of the leading providers of Integrated Pest Management (IPM) services and products for greenhouses."

EcoScience Corporation
One Innovation Drive
Worcester, MA 01605
Ph: 508-754-0300 Fax: 508-754-1134

New Canadian Regulatory Guidelines Under Review

On November 24, 1993, the Food Production and Inspection Branch of Agriculture and Agri-Food Canada released the following documents:

1. Regulatory Proposal Pro93-04 *Registration Guidelines for Microbial Pest Control Agents*; and
2. Regulatory Proposal Pro93-05 *Research Permit Guidelines for Microbial Pest Control Agents*.

Both of these documents have been revised to include data requirements for genetically modified organisms. The results of previous consultations were taken into consideration in the preparation of these guidelines.

Interested parties are asked to review the documents and provide written comments.

A multi-stakeholder workshop will be held in Ottawa on 22-23 March, 1994 to discuss the proposed guidelines and the written responses. Because technical issues regarding microbial characterization, human health and environmental impact will be discussed at the workshop, it is important that specialists in these areas attend.

To obtain a copy of the proposed Regulatory Guidelines or for more information about the workshop, please contact: Dr. F.Y. Chang, Associate Director, Issues, Planning and Priorities Division, Plant Industry Directorate, Food Production & Inspection Branch, Agriculture and Agri-Food Canada, Ottawa, ON Canada K1A 0C5 TEL: 613-993-4544 FAX: 613-998-1312

MEMBER NEWS

ROBERT R. GRANADOS, Vice-President of SIP, was recently awarded an NSF grant from the U.S.-Japan Cooperative Research Program to conduct a seminar on "Molecular Biology and Genetic Engineering of Biopesticides for Insect Control," to be held in Kyoto, Japan in November 1994. Granados is the Charles E. Palm Distinguished Scientist and Director of the Plant Protection Program at Boyce Thompson Institute for Plant Research in Ithaca, NY. The Palm Distinguished Scientist position recognizes Dr. Charles E. Palm, the first president of ESA and former head of the Department of Entomology at Cornell University and former dean of the Cornell College of Agriculture and Life Sciences. The co-organizer of this seminar is Professor **BRIAN A. FEDERICI** of the Department of Entomology at the University of California-Riverside. Prof. Federici is a former postdoc at Boyce Thompson Institute, assisting in the research program directed by Dr. Don Roberts, former president of SIP.

Granados was recently elected a Fellow of the American Association for the Advancement of Science. Granados' selection as a Fellow recognizes his outstanding contributions in vector transmission of plant pathogens and insect pathology research. Granados has also been nominated by the Central New York Patent Law Association for the 1993 Inventor of the Year Award in recognition of the several recent patents he has received on biobased technology.

MEMBERS ON THE MOVE

Dr. LUC NICOLAS, formerly at the Institut Pasteur in Paris is now at the Institut Malarde, Unité d'Immunologie, B.P. 30, Papeete, Tahiti. Phone: 689-41-64-67; Fax: 689-43-15-90

NEWS ITEMS

Susan Meyer, Mycological Nematologist, Named ARS' 1993 Outstanding "Early Career" Scientist

Plant pathologist Susan L. Fricke Meyer was named as the US Department of Agriculture, Agricultural Research Service's "Outstanding Early Career Scientist of the Year" for 1993.

Meyer identified promising fungal alternatives to conventional pesticides used against nematode pests of soybeans (causing \$250M damage in 1991) and other crop plants. She has worked in ARS' Nematology laboratory at the Agricultural Research Center in Beltsville, MD, since joining ARS in 1986.

"Dr. Meyer is the first person to develop mutant strains of fungi that are more active than wild strains in destroying eggs of the soybean cyst nematode. Every year, this pest causes multimillion-dollar yield losses to the U.S. soybean crop in about two dozen states," said R. Dean Plowman, Acting Assistant Secretary for Science & Education. "Dr. Meyer has been with the agency only six years, but her innovative research is already on the way to being commercialized as a new, nature-based alternative to conventional pesticides against nematodes," he added.

Meyer received a plaque, cash award, and additional funds to support her research. The honor is given to an ARS scientist whose research potentially can have a major impact on science and technology, but who has been with the agency less than 7 years and received the highest academic degree within the last 10 years.

Meyer and colleagues have applied for patents on technology that significantly reduced the number of nematodes in the soil. This technology uses pellets, placed in the soil near the seed, that release the mutant fungus or the fungus along with versions of the female nematode's sex attractant pheromone. The pheromone compounds confuse male nematodes so most can't find females for mating. If they do mate, the fungus *Verticillium lecanii*, destroys many of the eggs. In field tests in 1992, soybean yields were 22% higher from plants protected by both the fungus and the pheromone than from unprotected plants.

Plowman said that Crop Genetics International of Columbia, MD, has been licensed to commercialize the technology after large-scale field tests are conducted in the next few years. Meyer conducted small outdoor tests in 1992 and 1993 under a cooperative research and development agreement with the firm.

From INOCULUM 44(3), 1993

MEETING AND WORKSHOP ANNOUNCEMENTS

The Pacific Rim Conference on Biotechnology of *Bacillus thuringiensis* and Its Impact to the Environment, October 17- 21, 1994

In order to promote the use of *Bacillus thuringiensis* (B.t.)-based insecticides in the Pacific Rim region, a conference is being organized by a group of scientists from universities, government institutions and the B.t. industry in Taiwan, Japan and U.S.A. The conference will be held in the Academic Activity Center, Academia Sinica, Taipei, Taiwan, which can accommodate around 200 participants. In addition to the speakers from U.S.A. and Canada, the conference organizers plan to invite as many speakers as possible from the Asia-Pacific area.

The goals of the conference are:

- to promote the biotechnology of B.t. for the agricultural industry
- to exchange the latest information on strain isolation and identification, molecular biology of the insecticidal proteins, transgenic plants, resistance management and field application of B.t. products in the Asian Pacific environment
- to promote collaboration among scientists working on B.t. in the Pacific Rim region.

The official language of the conference will be English. For further information, please contact:
Dr. T-Y Feng, c/o The Pacific Rim Conference of B.t., Institute of Botany, Academia Sinica, Taipei, Taiwan 11529 Fax: 886-2-7827954, Ph: 886-2-7899590,
E-Mail: BOFENG@CCVAX.SINICA.EDU.TW

In the U. S. and Canada: Dr. T. Yamamoto, Sandoz Agro, Inc., 975 California Avenue, Palo Alto, CA 94304 Fax: 415-493-1073, Ph:415-354-3561, E-Mail: YAMAMOTO@PALRES.DNET.SANDOZ.COM

In Japan: Dr. T. Iizuka, Faculty of Agriculture, Hokkaido University, Sapporo, Hokkaido 060, Fax: 011-716-0879, Ph: 011-716-2111 ext.2423

1994 Second International Symposium on the Application of Biotechnology to Tree Culture, Protection, and Utilization, October 2 - 6, 1994

The Symposium will be held October 2-6, 1994 in Minneapolis, Minnesota, in conjunction with the TAPPI R & D Division Biological Sciences Symposium. Preliminary topics: Commercialization of Tree Biotechnology; Tissue Culture; Tree Genetics, Physiology and Stress; Tree Protection (Insects/Disease). Concurrent sessions with TAPPI: Bioprocessing/Biopulping/Bioremediation; Gene Mapping/Molecular Biology. Contributed sessions and poster presentations. For further information, please contact: Edith Franson, Executive Secretary, Tree Biotechnology Symposium, Forestry Sciences Laboratory, P.O. Box 898, Rhinelander, WI 54501 USA Phone: (715) 362-7474 Fax: (715) 362-7816

Symposium on Biopesticides: Opportunities for Australian Industry, Brisbane, Australia June 9-10, 1994

A 2-day symposium for farmers, researchers and companies interested in the successful commercialisation of biopesticides.

Sessions will deal with:

- 1) Identification of markets
- 2) Selection and improvement of effective organisms to combat pests
- 3) Production and evaluation of commercially acceptable biopesticides
- 4) Registration and regulation

- 5) Biopesticides in integrated pest management systems

Key speakers:

Dr. Stephen Lisansky, Director and Co-founder, CPI Scientific, UK.

Dr. Trevor Jackson, AgResearch, New Zealand Pastoral Agriculture Research Institute, Lincoln, New Zealand

The Symposium will be run under the auspices of The Queensland Branch of the Australian Biotechnology Association, The Cooperative Research Centre for Tropical Pest Management, and The Environmental Management Industry Association of Australia.

Major sponsor: Crop Care Australasia Pty Ltd.

Organising committee chairperson: Dr. Steven Reid, Department of Chemical Engineering, University of Queensland,

For further information please contact:

Mike Burrige, EMIAA,

c/o Department of Chemical Engineering,

Brisbane Qld 4072, Australia, Phone:(61-7) 365 4172

Fax:(61-7) 365 4172 or (61-7) 365 4199

4th Symposium of Biological Control - 4th Siconbiol - and 1st Symposium of Biological Control of South America Southeast Countries - in Conjunction with the 5th Brazilian Meeting for Biological Control of Plant Diseases, May 15-20, 1994

These meetings will be held at the Gramado City, Rio Grande do Sul State, Brazil and are organized by the biological control team of EMPRAPA - Pelotas and Federal University of Pelotas. The activities will include short courses, conferences, round-tables and sessions of paper and poster presentations. The themes of the scientific program will comprise:

- identification, cellular and molecular biology of entomopathogens,
- biological control of mites, grasshoppers and mosquitoes,
- biological control of nematodes and the use of nematodes for biological control,
- identification and bioecology of predators,
- population dynamics of natural enemies,
- biological control in soil and in forests,
- biological control of weeds,
- biological control of parasites of veterinary concern,

- advances in biological control with fungi and viruses,
- alternatives for control of post-harvest diseases on fruits,
- interactions with parasites and peritrophic matrix,
- aspects of insect microbial flora.

Besides the participation of Brazilian and South American workers in the area, several foreign researchers from United States, Canada, Australia, Israel, Japan and different countries from Europe have already confirmed their participation.

For further details contact:

Profa. Inguelore Scheunemann de Souza

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PUBLICATIONS

Marine Invertebrate Cell Culture: Breaking the Barriers

A publication on *in vitro* cell and tissue culture of marine invertebrates is now available. The report represents a proceedings consisting of a compilation of brief papers resulting from an international workshop held as part of the World Congress on Cell and Tissue Culture jointly sponsored by the American and Japanese Tissue Culture Association, Anaheim, California, June 16, 1991. The Workshop Proceedings cover a number of presentations made by authoritative figures working with cell cultures and who were successful in the propagation of difficult-to-grow cells originating from a wide array of homeothermic and poikilothermic taxa, including mammals, fish, insects, freshwater snails, and arachnids. Copies of the Proceedings, entitled Marine Invertebrate Cell Culture: Breaking the Barriers, may be obtained by writing to US Department of Commerce, NOAA/NMFS/NEFSC, 904 S. Morris Street, Oxford, MD 21654, U.S.A.

POSITIONS AVAILABLE

Postdoctoral and Predoctoral Positions

Isolate and study genes for a novel class of toxins against coleopteran pests. PhD, and recombinant DNA experience required for postdoctoral; background in cell or molecular biology or microbiology desirable for

pre-doctoral. An interest in transgenic plants would be an advantage. Stipends: \$24,000 for postdoctoral; \$12,000 for pre-doctoral. Send vitae, research statement, transcripts and three letters to:

Dr. Shān L. Bilimoria,
Department of Biological Sciences,
Texas Tech University, Box 43131, Lubbock, TX 79409
Phone: (806) 742-2740 Fax: (806) 742-2963.

National Biological Control Institute (NBCI) Postdoctoral Fellowships in Systematics Program Announced

To begin to address the critical global shortage of trained systematists for taxa of importance to biological control, the NBCI (U.S. Department of Agriculture, Animal and Plant Health Inspection Service) announced in July 1993 the first round of NBCI Postdoctoral Fellowships in Systematics.

NBCI will provide support for two Postdoctoral Fellowships to conduct research in systematics of any group of organisms of critical importance to biological control. It is important to note that the fellowships are not limited to study of arthropod taxa, and that NBCI has not predetermined that any particular taxon has a high priority for support.

The applications will be evaluated by scientists who are familiar with the needs, which will ensure that the scientific community will have significant input to the decision. The quality and merit of the research proposals will form the basis from which NBCI will ultimately decide awards.

A fellowship may be awarded in two ways: a principal investigator may apply to establish, recruit, and fill a postdoctoral position; or a postdoctoral candidate may apply directly to NBCI after securing approval and support from an appropriate supervisor and a host institution.

Fellowships are limited to U.S. citizens. They will carry two-year terms, with the possibility of renewal. Awards will range from \$30,000 to \$50,000 per year, based on qualifications of candidates and cost factors associated with the site of research.

E.S. Delfosse, Director, NBCI,
USDA/APHIS, Rm 538, 6505 Belcrest Rd.,
Hyatsville, MD 20782 U.S.A.
FAX: 301-436-7823

NEWSLETTER INFORMATION

Submissions to the following sections are solicited:

Forum: More substantial articles on current issues of concern. Please limit submissions to five pages.

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

Microbial Control News: Any 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**.

Please feel free to contact either of us for information regarding the Newsletter; however, send all submissions directly to Mark 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.

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Deadline for the next Newsletter is May 15, 1994



1. Jean Adams and Toshi Iizuka; 2. Françoise Djibode; 3. Larry Gringorten (Imitating the Devil's Head Rock);
4. Danica Baines and Jian-Wei Liu; 5. Chris Payne; 6. Denis Burges (Also Imitating the Devil's Head Rock?);
7. Bob Granados and Clinton Kawanishi; 8. Jim Becnel and Joel Siegel

MORE PHOTOS FROM ASHEVILLE

**INSECT PATHOLOGY, INSECT MICROBIOLOGY,
AND MICROBIAL CONTROL****BOOKS PUBLISHED SINCE 1981***Compiled by*

Mauro E. Martignoni, Box 14892, Albuquerque, New Mexico 87191

- Adams, Jean R.; Bonami, J. R., editors. 1991. Atlas of invertebrate viruses. 694 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-6806-5. \$295.00.
- Bailey, L.; Ball, B. 1991. Honey bee pathology. Second edition. 208 pp. Academic Press, Inc., San Diego. ISBN 0-12-073481-8. \$64.95.
- Beckage, N. E.; Thompson, S. N.; Federici, B. A. 1993. Parasites and pathogens of insects. Vol. 1, Parasites. 342 pp. Vol. 2, Pathogens. 272 pp. Academic Press, Inc., San Diego. Vol. 1: ISBN 0-12-084441-9, \$115.00. Vol. 2: ISBN 0-12-084442-7, \$115.00.
- Brehlin, M. 1986. Immunity in invertebrates: cells, molecules, and defense reactions. 233 pp. Springer-Verlag, Berlin, New York, Utrecht. \$89.00.
- Burges, H. D., editor. 1981. Microbial control of pests and plant diseases. 949 pp. Academic Press, Inc., London and New York. ISBN 0-12-143360-9.
- Davidson, Elizabeth W.; Faust, R. M.; Margalit, J.; Tahori, A. S., editors. 1991. Bacterial control of agriculturally and medically important insects: A global perspective. 260 pp. Ben Gurion University, Beer Sheva, Israel. \$36.00.
- Deseő-Kovács, Katalin V.; Rovesti, Luciano. 1992. Lotta microbiologica contro i fitofagi -- teoria e pratica. 296 pp. Edagricole - Edizioni Agricole, Bologna. ISBN 88-206-3204-7. \$36.00.
- Fuxa, James R.; Tanada, Yoshinori, editors. 1987. Epizootiology of insect diseases. 555 pp. John Wiley and Sons, Inc., New York. ISBN 0-471-87812-X. \$80.95.
- Garner, Willa Y.; Harvey, John, Jr., editors. 1984. Chemical and biological controls in forestry. 406 pp. American Chemical Society, Washington D.C. ISBN 0-8412-0818-2.
- Gaugler, Randy; Kaya, Harry K., editors. 1990. Entomopathogenic nematodes in biological control. 384 pp. CRC Press Inc., Boca Raton, Florida. \$69.95.
- Granados, Robert R.; Federici, Brian A., editors. 1986. The biology of baculoviruses. Vol. 1: 304 pp., Vol. 2: 320 pp. CRC Press Inc., Boca Raton, Florida. \$199.00.
- Gupta, Ayodhya P., editor. 1991. Immunology of insects and other arthropods. 520 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-7381-6. \$179.95.
- Hickle, Leslie A.; Fitch, William L. 1990. Analytical chemistry of *Bacillus thuringiensis*. 149 pp. American Chemical Society, Washington D.C.
- Hoy, Marjorie A.; Herzog, Donald C., editors. 1985. Biological control in agricultural IPM systems. 589 pp. Academic Press, Inc., Orlando and London. ISBN 0-12-357030-1. \$81.00.
- Hull, Roger; Brown, Fred; Payne, Chris. 1989. Virology - Directory and dictionary of animal, bacterial and plant viruses. Macmillan Publ.; Stockton Press.
- Ignoffo, Carlo, editor. 1988. Entomogenous protozoa and fungi. [Part A of Vol. 5 of CRC Handbook of natural pesticides: Microbial insecticides]. 272 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-3660-0. \$199.00.
- Jackson, Trevor A.; Glare, Travis R., editors. 1991. Use of pathogens in scarab pest management. 296 pp. VCH Publishers, Inc., New York. ISBN 0-94670-735-9. \$89.00.

- Kim, Leo, editor. 1993. Advanced engineered pesticides. 448 pp. Marcel Dekker, Inc., New York. ISBN 0-8247-8990-3. \$150.00.
- Krieg, A.; Franz, J. M. 1989. Lehrbuch der biologischen Schädlingsbekämpfung. 302 pp. Paul Parey, Berlin and New York.
- Kuno, Goro; Mulett, Jose; de Hernandez, Martha. 1982. Patologia de insectos con enfasis en las enfermedades infecciosas y sus aplicaciones en el control biologico. Second edition. 212 pp. Centro de Publicaciones, Universidad del Valle, Cali, Colombia.
- Kuroda, Yukiaki; Kurstak, Edouard; Maramorosch, Karl, editors. 1988. Invertebrate and fish tissue culture. 294 pp. Springer Verlag, Berlin, New York, Utrecht. \$65.00.
- Kurstak, Edouard, editor. 1982. Microbial and viral pesticides. 720 pp. Marcel Dekker, Inc., New York. ISBN 0-8247-1686-8. \$99.50.
- Kurstak, Edouard, editor. 1991. Viruses of invertebrates. 360 pp. Marcel Dekker, Inc., New York. ISBN 0-8247-8469-3. \$145.00.
- Laird, Marshall, editor. 1981. Biocontrol of medical and veterinary pests. 235 pp. Praeger, New York. ISBN 0-03-059392-1. \$86.95.
- Laird, Marshall, editor. 1981. Blackflies: the future for biological methods in integrated control. 399 pp. Academic Press, Inc., Orlando and London. \$129.00.
- Laird, Marshall; Lacey, Lawrence L.; Davidson, Elizabeth W., editors. 1990. Safety of microbial insecticides. 288 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-4793-9. \$139.95.
- Mackauer, Manfred; Ehler, Lester E.; Roland, Jens, editors. 1990. Critical issues in biological control. VCH Publishers, Inc., New York.
- Maramorosch, Karl, editor. 1987. Biotechnology in invertebrate pathology and cell culture. 511 pp. Academic Press, Inc., Orlando and London. \$127.00.
- Maramorosch, Karl, editor. 1991. Biotechnology for biological control of pests and vectors. 248 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-4836-6. \$149.95.
- Maramorosch, Karl; Sherman, K. E., editors. 1985. Viral insecticides for biological control. 809 pp. Academic Press, Inc., Orlando and London. ISBN 0-12-470295-3. \$121.00.
- Morse, Roger A.; Nowogrodzki, Richard, editors. 1990. Honey bee pests, predators, and diseases. Second edition. 496 pp. Cornell University Press, Ithaca and London. \$41.50.
- Nickle, W. E., editor. 1984. Plant and insect nematodes. 925 pp. Marcel Dekker, Inc., New York. ISBN 0-8247-7079-X.
- Pimentel, David, editor. 1990. Utilization of biological, cultural, and quarantine controls in crops. [Vol. 2 of CRC Handbook of pest management in agriculture; Second edition]. 784 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-3845-X. \$269.00.
- Poinar, George O., Jr.; Thomas, Gerald M. 1984. Laboratory guide to insect pathogens and parasites. 408 pp. Plenum Press, New York. ISBN 0-306-41680-8. \$79.50.
- Prior, C.; Lomer, C., editors. 1992. Biological control of locusts and grasshoppers. 256 pp. CAB International & University of Arizona Press, Tucson. \$64.50.
- Robertson, Jacqueline L.; Preisler, Haiganoush K. 1992. Pesticide bioassays with arthropods. 144 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-6463-9. \$95.00.
- Samson, Robert A.; Evans, Harry C.; Latge, Jean-Paul, editors. 1988. Atlas of entomopathogenic fungi. Springer-Verlag, Berlin, New York, Utrecht.
- Schwemmler, Werner; Gassner, George. 1989. Insect endocytobiosis: morphology, physiology, genetics, evolution. 288 pp. CRC Press Inc., Boca Raton, Florida. ISBN 0-8493-6404-3. \$149.95.
- Stirling, G. R. 1991. Biological control of plant parasitic nematodes. 220 pp. CAB International & University of Arizona Press, Tucson. \$66.50.
- Tanada, Yoshinori; Kaya, Harry K. 1993. Insect pathology. 666 pp. Academic Press, Inc., San Diego. ISBN 0-12-683255-2. \$129.00.
- Warr, Gregory W.; Cohen, Nicholas. 1990. Phylogenesis of immune functions. 304 pp. CRC Press Inc., Boca Raton, Florida. \$169.95.

Weiser, Jaroslav. 1991. Biological control of vectors. 189 pp. John Wiley & Sons, Inc., Somerset. \$57.95.

Wilding, N.; Collins, M.; Hammond, P. M. 1989. Insect-fungus interactions. 288 pp. Academic Press, Inc., London and New York. ISBN 0-12-751800-2. \$62.00.

LIST OF AUTHORS

- | | | | |
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| Glare, T. R. | (see Jackson) | Rovesti, L. | (see Deseö-Kovács) |
| Granados, R. R. | | Samson, R. A. | |
| Gupta, A. P. | | Schwemmler, W. | |
| Hammond, P. M. | (see Wilding) | Sherman, K. E. | (see Maramorosch) |
| Harvey, J., Jr. | (see Garner) | Stirling, G. R. | |
| Herzog, D. C. | (see Hoy) | Tahori, A. S. | (see Davidson) |
| Hickle, L. A. | | Tanada, Y. | |
| Hoy, M. A. | | Tanada, Y. | (see Fuxa) |
| Hull, R. | | Thomas, G. M. | (see Poinar) |
| Ignoffo, C. | | Thompson, S. N. | (see Beckage) |
| Jackson, T. A. | | Warr, G. W. | |
| Kaya, H. K. | (see Gaugler) | Weiser, J. | |
| Kaya, H. K. | (see Tanada) | Wilding, N. | |

CHRONOLOGICAL LIST**1981**

Burges, H. D., editor
Laird, M., editor (1)
Laird, M., editor (2)

1982

Kuno, G.; Mulett, J.; de Hernandez, M.
Kurstak, E., editor

1984

Garner, W. Y.; Harvey, J., Jr., editors
Nickle, W. E., editor
Poinar, G. O., Jr.; Thomas, G. M.

1985

Hoy, M. A.; Herzog, D. C., editors
Maramorosch, K.; Sherman, K. E., editors

1986

Brehlin, M.
Granados, R. R.; Federici, B. A., editors

1987

Fuxa, J. R.; Tanada, Y., editors
Maramorosch, K., editor

1988

Ignoffo, C., editor
Kuroda, Y.; Kurstak, E.; Maramorosch, K., editors
Samson, R. A.; Evans, H. C.; Latge, J.-P., editors

1989

Hull, R.; Brown, F.; Payne, C.
Krieg, A.; Franz, J. M.
Schwemmler, W.; Gassner, G.
Wilding, N.; Collins, M.; Hammond, P. M.

1990

Gaugler, R.; Kaya, H. K., editors
Hickle, L. A.; Fitch, W. L.
Laird, M.; Lacey, L. L.; Davidson, E. W., editors
Mackauer, M.; Ehler, L. E.; Roland, J., editors
Morse, R. A.; Nowogrodzki, R., editors
Pimentel, D., editor
Warr, G. W.; Cohen, N.

1991

Adams, J. R.; Bonami, J. R., editors
Bailey, L.; Ball, B.
Davidson, E. W.; Faust, R. M.; Margalit, J.;
Tahori, A. S., editors
Gupta, A. P., editor
Jackson, T. A.; Glare, T. R., editors
Kurstak, E., editor
Maramorosch, K., editor
Stirling, G. R.
Weiser, J.

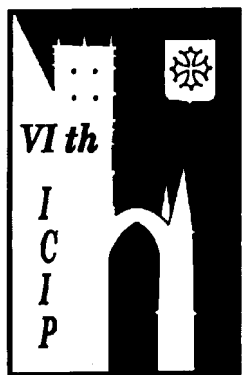
1992

Deseö-Kovács, K. V.; Rovesti, L.
Prior, C.; Lomer, C., editors
Robertson, J. L.; Preisler, H. K.

1993

Beckage, N. E.; Thompson, S. N.; Federici, B. A.
Kim, Leo, editor
Tanada, Y.; Kaya, H. K.

Completed: October 30, 1993



MONTPELLIER '94

**VIth INTERNATIONAL COLLOQUIUM ON INVERTEBRATE
PATHOLOGY AND MICROBIAL CONTROL**

and

**IIInd INTERNATIONAL CONFERENCE ON
BACILLUS THURINGIENSIS**

in conjunction with the

**27 th ANNUAL MEETING OF THE SOCIETY FOR
INVERTEBRATE PATHOLOGY**

Le Corum, Montpellier, France August 28 - September 2, 1994

**REGISTRATION
PACKAGE**

INSTRUCTIONS TO AUTHORS

DEADLINE : APRIL 30, 1994

The Abstracts of the VIth ICIP- 27th Annual Meeting of the Society for Invertebrate Pathology and IInd International Conference on Bacillus thuringiensis will be prepared by direct reproduction of the abstract(s) submitted by each author. There will be no editing of the author's copy. Thus, every error which appears in the submitted abstract will also appear in the printed Abstracts. Please use the following procedure for the preparation of the abstract.

If you are a student and wish your paper or poster to be entered in the student presentation contest, please indicate this as shown in the back model. To be eligible for the prize, the paper must be presented by the student. The student need not be the sole author, but must be the senior author.

- 1) Typewriter : Use a electric typewriter with a new cotton or silk carbon ribbon. Use a 12 or 10 character per inch font
- 2) Personal computer : Use preferably Times Roman Police, lettering size 12 pt, 1.0 line spacing. as indicated on the model. For printing use daisywheel or preferably laser printer. **Dot matrix printouts are not acceptable.**
- 3) Abstracts will be printed at the same size as the model. Type only within the space outlined in the model. Maximum line length must be 13.5 cm and maximal height must be 20 cm.
- 4) Type the title in CAPITAL LETTERS. Follow with the author's names in lower case and the address of the institution The presenting author should be underlined. Superscript numbers should indicate author affiliations when more than one institution is involved. Leave one blank line above the main text. The title, authorship and the text must be as shown on the model.
- 5) The Style manual for Biological Journals, published by the American Institute of Biological Sciences, should be used as a guide to abbreviations and symbols. Proprietary and trade names must be accompanied, at first mention, by the established or generic names. When using abbreviations for compounds, the name must be spelled out in full at the first mention.
- 6) **Remember** Your abstract will be printed exactly as submitted. Any smudges, errors and misspellings on your copy will also be evident in the printed abstracts. Abstract(s) page(s) should not be folded.
- 7) Poorly typed and improperly prepared abstracts, unsuitable for direct reproduction, will not be printed . Because of the various deadlines, there will be no time for returning the abstracts to authors for retyping. Therefore, please follow the instruction closely.
- 8) The maximum size for Posters is 120 cm X 100 cm.
- 9) Please submit two copies of your abstract(s) along with the registration form and registration fees to :

**VIth ICIP Montpellier 94
Laboratoire de Pathologie Comparée
CC 101
Université Montpellier II
Place Eugène Bataillon
34095 Montpellier Cedex 5
France**

REGISTRATION FORM

Mr Mrs Miss Title : Prof Dr
 Name : _____ First Name : _____
 Affiliation : _____
 Address : _____
 Postal Code : _____ City : _____ Country : _____
 Telephone : _____ Fax : _____ E-Mail : _____

Accompanying person(s) : Indicate number : ____

Mr	Mrs	Miss	Name	First Name
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Office use only

N° Enr : _____

Day reception _____

I am a member of SIP Yes No
 I am a full Student Yes No University : _____

REGISTRATION FEE

Regular Member	1400 FF	
Student member	800 FF	
Non Member	1600 FF	
Accompanying person	600 FF	
5km Race with T-Shirt included	100 FF	
T-Shirt only	60 FF	
Size S <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> XL <input type="checkbox"/>		
Late fee (after April 30)	300 FF	
TOTAL		

Participant's fees include :

- admittance to the Congress
- Congress documents and final program, abstract book
- Mixer, 8 coffee breaks, excursion + BBQ, Banquet

Accompanying person's fees include :

- Mixer, Excursion + BBQ, Banquet

Arrival Date : _____ Mode of transportation : Plane train car
 Departure Date : _____
 I wish to receive a form entitling me to a reduced rate for :
 Train (SNCF)
 AIR INTER (Paris - Montpellier round trip ticket (40%))
 I wish to receive :
 Information on Car rental

Payment : All registration fees must be sent with the completed registration form (see page 8)

Editor's Note: For your information, at the end of January, the exchange rate was approximately 5.9 FF to the US dollar. Exchange rates fluctuate daily and can change significantly over time. Check with your bank for the latest exchange rate.

SOCIAL EVENTS

	Yes	No	
I wish to participate to the Mixer party (Sunday evening)	<input type="checkbox"/>	<input type="checkbox"/>	Number :
I wish to participate to the Excursion + BBQ (Wednesday afternoon)	<input type="checkbox"/>	<input type="checkbox"/>	Number :
I wish to participate to the Banquet (Thursday night)	<input type="checkbox"/>	<input type="checkbox"/>	Number :

OPTIONAL EVENTS

	Price	Nbr	Total
Sunday 28 August	Medieval City of Carcassonne **	280 FF★	
Monday 29 August	Avignon - Les Baux de Provence **	280 FF★	
Tuesday 30 August	Montpellier - St Guilhem le Désert*	150 FF★	
Thursday 1 September	French Catalogne - Perpignan **	280 FF★	
Friday 2 September	Sete - Etang de Thau **	300 FF★	
Saturday 3 to Wednesday 7 September	Costa Brava (Spain) Figueras, Gerona, Barcelona *⊗	1490 FF★	
TOTAL :			

* A minimum of 30 persons is necessary for these tours to occur. All tours include coach bus transportation and an English speaking accompaniator.

* Lunch included

⊗ Breakfasts, lunches and dinners, 4 nights in *** Hotels (supplement of 400 FF for single rooms), guided visit of Barcelona etc.. included.

★ 30% deposit of the total cost necessary for registration. In case of insufficient number of participants, the deposit will be refunded for each tour.

STUDENT ROOMS ACCOMODATION

**No Hotel reservation will be provided through the Organizing Committee.
For Hotel reservation, see enclosed sheets**

Reservations for student rooms (single rooms only) will be on a one week basis (for example, Sunday night to Saturday night). The attendants will be lodged in Cité Universitaire Boutonnet located about 15 mn walking distance from le Corum. No Reservation could be secured after 30 April .

I would like a one week reservation Yes No Number : _____
 Dates : From _____ to _____
 Price per room (including breakfast) : 400 FF ★ per week

TOTAL :

★ A deposit of 200 FF (50%) is necessary before 30 April for reservation to be taken into consideration.

TWELTH ANNUAL SIP 5 KM RACE

August 3, 1994

Wednesday Evening at 6:00 pm

Pont du Gard, near Remoulins

The 100 FF entry fee includes a souvenir T-shirt. Please enter appropriate fee on registration form on page 1

Name : _____

Address : _____

Category	Men	Women
40 and over	<input type="checkbox"/>	Runner <input type="checkbox"/>
under 40	<input type="checkbox"/>	Walker <input type="checkbox"/>
Walker	<input type="checkbox"/>	

T-Shirt Size : S M L XL

I intend to participate in the race. I affirm that I am in proper physical condition to participate in this race and in consideration of the acceptance of this entry hereby release sponsor officials and organizers of this race from all claims of injury or damage to person or property, including death, resulting from my running in this event.

Signature :

I would like a souvenir T-shirt (at a cost of 60 FF each) but do not wish to enter the race. Indicate size and number desired. Please enter appropriate fee on registration form on page 1

Size : S M L XL Number :

ABSTRACTS

I am sending herewith enclosed ___ * Abstract(s) for presentation as :

- Plenary session paper
 Symposium paper
 Contributed paper
 Poster

Student paper or poster contest

- Paper
 Poster

* Please indicate the number of abstract(s) enclosed

TOTAL FEES

Registration fees including accompanying person(s) :

Optional events (30% deposit) :

Student rooms accomodation (50% deposit) :

Total amount enclosed :

Notice : all fees are VAT included

Payments :

Payments must be made either by International money order*, Bank cheque or Bank transfer (**all bank charges prepaid**). All other forms of payment cannot be accepted. International money order or Bank cheque must be in **French Francs** payable to : **Vith ICIP Meeting Montpellier 94**. Bank transfer should be addressed to :

Vith ICIP Meeting Montpellier 94
Caisse Régionale de Crédit Agricole Mutuel du Midi (CRCAMM)
Bank account Number : 005.0962.0.000
Bureau de Montpellier Facultés, Résidence le Montaigne
423 Route de Mende
34000 Montpellier, France

* The fee for the International money order is part of the sender's expenses

Cancellation :

Registrations cancelled by letter or fax will be honored at the following conditions : before June 30, 1994 : 100% ; before August 1, 1994 : 50 % refund of the fees. After August 1, 1994 all registrations will be considered definite and the corresponding fees owed in full.

Deposit for optional events will be fully refunded if cancellation is received before August 15, 1994.

Deposit for student room accommodation will be refunded only if received before May 1, 1994.

This form should be carefully completed and sent along with your payment (or document assessing the bank transfer) and Abstract(s) to :

Vith ICIP Montpellier 94
Laboratoire de Pathologie Comparée
CC 101
Université Montpellier II
Place Eugène Bataillon
34095 Montpellier Cedex 5
France

Tel. : (33) 67 14 32 20

Fax. : (33) 67 14 30 31

E-mail : bergoin@viro.univ-montp2.fr

COSTA BRAVA - LA FETE EN ESPAGNE**ITINERARY****DEPARTURE : SATURDAY SEPTEMBER 3RD****1490 FF****FROM MONTPELLIER**

situated between Gerone and Barcelona, Costa Brava offers to his hosts a nice climate, some daily excursions to discover the area, a very good quality-price : an opportunity to go and take the sun for a good price. Our program proposes you to visit Barcelona, olympic city, Dali' s fabulous museum and the opportunity to assist a party to the Big Palace which doesn't have anything to envy to the best show in Paris.

Day 1 : TO THE COSTA BRAVA

Departure early in the morning by the highways to Spain. Drive to Gerone and Lloret de Mar. Accommodation at Lloret de Mar. Lunch at the hotel. In the afternoon, free time to discover the resort. Welcome Cocktail. Dinner and overnight.

Day 2 : COSTA BRAVA

Free time this morning. Lunch at the hotel. In the afternoon, a splendid scenic drive along the "corniche de Costa Brava". Short stop at Tossa de Mar, San Feliu de Guixols and Playa de Aro, wealthy resort. Taste some wines in a "bodega". Dinner and overnight at the hotel.

Unforgettable Evening : Entertainment at the "Grand Palace". International performance and flamenco dances. Very good level. Champagne. OPTIONAL 160 FF by person.

Day 3 : GERONE

Free time in the morning. Lunch at the hotel. In the afternoon, departure to Gerone. Visit of the old city including the cathedral and arab baths. Dinner. Flamenco evening at the hotel.

Day 4 : BARCELONA, OLYMPIC CITY

Depart to Barcelona, the capital of Catalonia, a modern and original city which has been different since the olympic games. Guided tour of the city : la Sagrada Familia and Gaudi's masterpieces, the gothic area, the "port", olympic areas, le pueblo... Lunch in Barcelona. In the afternoon, free time in the lively and busy area. Dinner (special paëlla) and overnight at the hotel.

Day 5 : FIGUERAS - DALI'S MUSEUM - RETURN

Free time to enjoy the relaxed holiday atmosphere of Lloret de Mar, after a long evening. After lunch, departure to Figueras. Visit of Dali's museum. You will see his strange and odd and original works, sculptures. At the end of the day, return to France.

Package price per person includes :

- touring by luxury, air-conditioned motorcoach
- 4 nights hotel accommodation (bed and breakfast) in twin-bedded rooms in hotels ***
- services of a bilingual guide while touring
- all meals
- guide in Barcelona
- visits and excursions according to program
- free travel insurance
- taxes and services included

Package doesn't include

- drinks
- entrance fees

Optional

- single room supplement : 400 FF



MONTPELLIER

(Photos: E.W. Davidson)