

# IOBC Newsletter 62

ORGANISATION INTERNATIONALE DE LUTTE BIOLOGIQUE CONTRE LES ANIMAUX  
ET LES PLANTES NUISIBLES (OILB)

NOVEMBER 1995

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IOBC/OILB is affiliated to the International Council of Scientific Unions (ICSU)  
as the Section of Biological Control of the International Union of Biological Sciences (IUBS)

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## Nomination of a new Executive Committee of IOBC Global in 1996

The four years period of the Executive Committee will end after the General Assembly in September 1996. New officers are elected by all IOBC members by postal ballot which will be performed before the General Assembly in September 1996. By-Laws of the Statutes of IOBC Global stipulate the following procedure (Article 7):

„The Council shall propose a list of candidates to the Executive Committee. Other nominations supported by 10 regular members may be sent with the written consent of the nominee to the Secretary-General at least 1 month before the dispatch of the voting documents. All nominations shall be submitted by postal ballot to all regular members by the Secretary-General at least 3 months before the closing date“

The Executive Committee consists of the President, the immediate Past-President, the two Vice-Presidents, the Treasurer and the Secretary-General. All officers, except the immediate

Past-President, are elected by votes. With the exception of the Secretary-General, officers are not eligible for a second consecutive term in the same office.

**Proposals must be submitted to the Secretary-General by 31 March, 1996 (address see box on the right)**

It is planned to perform the postal ballot in early summer 1996.

Personal information of the present Secretary-General: Because of a number of new professional duties I will resign as Secretary-General after September 1996.

### Membership fees 1996

Please pay your 1996 fee promptly. Budgets of IOBC depend on your subscription. Delayed payments cause a lot of unnecessary administration and costs. Moreover, ENTOMOPHAGA subscribers are notified on the mailing list of the journal only if their fees are paid.

**President:** E.S. Delfosse, National Biological Control Institute USDA/APHIS, 4700 River Road Unit 5, Riverdale, MD 20737-1229 USA, Fax 301 734 78 23

**Vice-Presidents:** B. Napompeh, National Biol. Control Res. Centre, Kasetsart Univ., P.O. Box 9-52, Bangkok 10900, Thailand

A.I. Smetnik, All-Russian Institute for Plant Quarantine, Pogranichnaya 32, Bikovo, Moscow Region 140150, Russia

**Secretary-General:** F. Bigler, Swiss Fed. Res. Station for Agronomy, Reckenholzstr. 191, 8046 Zürich, Switzerland Fax 1 377 72 01

**Treasurer:** E. Hoebaus, Ministry of Agriculture and Forestry, Abt. II C12, Stubenring 1, 1010 Vienna, Austria Fax 711 006 507

**Past-President:** J.R. Coulson, Inst. Biocontrol Lab., USDA/ARS, BARC East BD. 476, Beltsville MD 20705, USA

# ENTOMOPHAGA

## Information summary of the *Ad hoc* ENTOMOPHAGA Review Committee

The Committee met in Zürich, Switzerland, on 22-23 May 1995 to exchange and discuss information obtained since its meeting in August 1994. Based on available information, tentative conclusions were reached as a basis for its final report.

Each comment from colleagues, solicited by individual letters and by notices in *Regional and Global Newsletters* in 1994, was reviewed. Many respondents noted that the journal should contain more pages, appear in a more timely fashion, and have higher standards; a number endorsed inclusion of short notes. The subject areas of biocontrol of weeds, and of the use of pathogens of various kinds in biocontrol programs, had strong support among areas that should be included in an expanded scope.

The Committee addressed a number of important questions, and explored details upon which to make recommendations to the Global Council. Among the questions and considerations addressed were the following.

### I. Does the IOBC need its own journal?

The International Organization for Biological Control is the focus group for research on biological control and integrated pest and disease management on a global basis. An outlet is needed for scientific and technical communication among its members, and to other interested individuals, organizations, and policy-making groups throughout the world. The

journal will integrate reports of research in biological control in the domains of entomology, weed science, and plant pathology, integration which will be unique in a single journal. The journal will indicate and reflect the general direction, policies, and future of biological control throughout the world.

It is the unanimous conclusion of the Committee that the IOBC does, indeed, need its own journal.

### II. Name of the publication

The Committee discussed the advantages and disadvantages of the current name of the journal, possible alternate names, and will make a specific recommendation to the Global Council.

### III. Scope of the journal

The Committee developed a statement to describe the scope of the publication, recognizing those items it believes justify publication of a journal by the Society.

### IV. Merger of publications

Because there are several journals dedicated to biological control in various of its aspects, as viewed by the Committee, there was discussion of potential merger of the publication of the Society with one or more of the existing journals. Each possible combination was considered and analysed. A recommendation, together with analysis of each of the options, will be a part of the Report to the Global Council.

### V. Discussion of Publishers/ Printers and Organizational Structure

Information from the publishers or printers of a number of journals was obtained. There was a consensus that printing/publication of the journal should remain in Europe. Contracts currently in place will have to be negotiated, or allowed to expire should an impasse be reached, before any changes can take place.

We discussed a proposed 'Administrative structure' for the journal, and considered roles of editor(s), an editorial board, oversight and liaison committees, and the editorial office. Details will be provided to the Global Council as a part of the report of the Committee.

The Committee concluded with an expectation of exciting improvements to our journal that will enhance its benefit to members, and which will provide a valuable service to the international biological control community.

Albert Minks and Alan Cameron  
for the *Ad hoc* Committee

**HAVE YOU CONSIDERED  
PUBLISHING YOUR  
SCIENTIFIC RESULTS AND  
REVIEW ARTICLES IN  
ENTOMOPHAGA?**

**IF NOT YET, JUST DO IT!**

# REGIONAL SECTIONS

## WPRS

### West Palaeartic Regional Section



President: D.J. Royle, University of Bristol, Long Ashton Research Station, Bristol BS18 9AF, UK. FAX 275 39 4007.

Secretary General: S.H. Poitout, INRA Stat. Zool., Domaine de St.-Paul, Site Agroparc, 84914 Avignon, Cedex 9, France. FAX 90 31 62 70.

Treasurer: J. Huber, Institute for Biological Pest Control, Heinrichstr. 243, 62287 Darmstadt, Germany. FAX 6151 40790.

### Meeting of the WPRS Executive Committee at Gent

A meeting of the WPRS Executive Committee took place at Gent (Belgium) on 16 and 17 June 1995. Most time was devoted to the preparation of the biannual meeting of the full WPRS Council and to the meeting between the Council and the Conveners of the Working Groups.

### IOBC/WPRS Bulletins are now also obtainable outside WPRS

During the IOBC/WPRS Executive Committee meeting at Gödöllő (Hungary), 6 April 1995, it was decided to offer subscriptions of the IOBC/WPRS Bulletins to anyone outside of the WPRS region who is interested. The Bulletins are used by WPRS to publish primarily results of its working groups and commissions. Eight to ten issues appear yearly with a total of 1500 to 2000 pages.

Most articles are progress reports of original research presented by working group members at conferences and workshops.

The subscription fee is CHF 100.- (US\$85.- approximately) per year for members of other IOBC regions and CHF 400.- for non-members. This sum should be transferred to the account of WPRS in Belgium: IOBC/WPRS, Kredietbank, account number 448-7987341-71, Martelaarslaan 310, B-9000 Gent, Belgium, and on the payment mentioning "subscription 'IOBC/WPRS Bulletins, year member region...'/or "non-member".

### New Study Group

The new Study Group: "Quantitative approaches in IPM" is about to start its activities. The group is aimed at investigating the contribution of modeling to practical IPM. The strategy of the group is to link up to existing Working Group activities and provide a framework for inventory and analysis of demand and supply in the areas of 1) decision support systems (or communication technologies in general) and 2) process-based models and other quantitative approaches in the areas of sampling and monitoring, population dynamics, injury and damage and decision making and uncertainty.

### EPRS East Palae- artic Regional Section



President: A.I. Smetnik, All-Russian Institute for Plant Quarantine, Pogradichnaya

32, Bikovo, Moscow Region, 140150, Russia; FAX 95 975 3971.

Secretariat: Journal "Plant Protection", Sadovaya-Spasskaya 18, attn. IOBC/EPRS Secretariat, Moscow, 107807, Russia; FAX 95 924 6655.

### SEARS South East Asian Regional Section



President: R. Muniappan, Agricultural, Experiment Station, University of Guam, Mangilao, Guam 96923 USA. FAX 671 734 6842.

Secretary-Treasurer: M. Marutani, (same address as R. Muniappan)

Two Newsletters were released (June and September 1995).

Ask R. Muniappan or M. Marutani for copies.

### NRS

### Nearctic Regional Section



President: G.R. Buckingham, USDA/ARS, P.O. Box 147100, Gainesville, Florida 32614. FAX 904 374 6801.

Secretary-Treasurer: D. Landis, Department of Entomology, 104B Pesticide Research Center, Michigan State University, E. Lansing, MI 48824-1115, FAX 517-353-5598.

Corresponding Secretary: R. van Driesche, Department of Ento-

mology, University of Massachusetts, Amherst MA 01003. FAX 413 545 2115.

## NTRS

### Neotropical Regional Section



President: Francisco Ferrer, Servicio Biológico, Carrera 5 No. 4-76, Urbanización del Este, Barquisimeto, Estado Lara, Venezuela. FAX 58-51 316 253.

Secretary: Miguel C. Zapater, Facultad de Agronomía, Universidad de Buenos Aires, 1417 Buenos Aires, Argentina. FAX 54-1 522 8395 or 522 1687.

Treasurer: Vanda Paes Bueno, Departamento de Fitossanidade, Escola Superior de Agricultura de Lavras, Caixa Postal 37, CEP 37200-000, Lavras, Minas Gerais, Brasil. FAX 55-35 829 1100.

## ATRS

### Afrotropical Regional Section



President: Dr. H.G. Zimmermann, Plant Protection Research Institute, Private Bag x 134, Pretoria 0001, Rep. S. Africa, FAX 12329 3278.

Vice-President: Dr. Ouayagode-Bakary, DPR, MESRS, B.P. V151, Abidjan, Ivory Coast.

Secretary-General: Dr. G. Bani, B.P. 2499, DGRST, Brazzaville, Congo. FAX 242 831337.

Treasurer: Dr. A. Paraiso, B.P. 12625, Niamey, Niger. FAX 227 73 22 37.

A brief meeting of H.G. Zimmermann and F. Bigler was held in September 1995 in Zürich. The present situation of ATRS and future activities were discussed. Among a number of other issues raised, the four points are important for the near future of ATRS:

- A biannual Newsletter is planned. Send items of interest for biological control in Africa to H.G. Zimmermann!
- Ideas for special working groups were raised and possibilities of funding discussed
- A database on biocontrol workers in Africa would be very useful and would facilitate

cooperation and exchange of information

- Funding of ATRS activities were evaluated

### Share your information

Activities and events within IOBC Regional Sections do interest your colleagues outside the Sections as well. They will most probably not be informed if you don't tell them. You may share information by sending any kind of NEWS to me.

F. Bigler, Editor

## WORKING GROUPS

### WG Quality Control of Mass-reared Arthropods

Chairman: N.C. Leppla, ASDA/APHIS, National Biological Control Institute, 4700 River Road Units, Riverdale, MD 20737-1229, USA. FAX 301 734 7823.

Co-chairman: M. Benuzzi, Biolab, Via Masiera 1, 1191, 47020 Martorano-Cesena, Italy. FAX 547 380795.

### Notes on the Santa Barbara meeting October 1995

The Eight Global Workshop of the Working Group on "Quality Control of Mass Reared Arthropods" was held in Santa Barbara, California, October, 9-12, 1995. The workshop was sponsored by the International Organization of Biological Control; The Department of Entomology, University of California, Riverside; University

of California Center for Exotic Pest Research; the National Biological Control Institute, Animal and Plant Health Inspection Service, US Department of Agriculture and the Association of Natural BioControl Producers. The meeting consisted of paper presentations to focus discussion of specific topics of relevance to mass production and poster presentations to provide specific examples of mass production, augmentative biological control projects, and sterile insect techniques (SIT).

The meeting consisted of four sessions. The opening session focused on general quality control procedures, with Mr. M. Burt, Executive Director, ANBP, presenting a paper on Total Quality Management (TQM) followed by a paper presented by Ms E. Borges of InterQual on ISO-9000. Both speakers sought to provide a structure in which to develop a mass production process to develop a defined level of quality as determined by the producer and end-user. They emphasized

the need to identify and develop criteria for judging quality, to identify stages (steps) within the production process in which quality is evaluated as part of the on-going production process, and to involve the production workers in the development of the production protocols, quality criteria, and evaluation procedures. Total Quality Management is based on the ideas of W. E. Deming (1986, *Out of Crises*, Massachusetts Institute of Technology, Center for Advanced Engineering Study, Cambridge, Mass.) and it is the reason for Japan's industrial revitalization following WW II and for the rapid improvement in the quality of its products. ISO-9000 is a specific program which, if implemented, develops production protocols and sets standards against which quality can be measured. It can also evolve into a process that certifies the attainment of specific producer/user defined quality criteria. ISO-9000 is one of several standards used in industry to insure that the quality of the sub-contractors (suppliers) meets the standards required by the contractor.

The second session focused on regulation of mass produced natural enemies, i.e. commercially produced biological control agents. Representatives from the US (Department of Agriculture, Animal and Plant Health and Inspection Service) and Canada (Health Canada, Pest Management Regulation Agency) presented the status of current regulations within the United States and Canada along with some idea of future regulatory developments. Professor J. van Lenteren provided an overview of the current status of regulations within Europe and of the United Nations Food and Agricultural Organization's Code of Conduct for the Import and Release of Exotic Biological Control Agents. Substantial discussion ensued on

questions of practicality, efficacy, purity, identification, and international shipments.

The third session focused on field efficacy. This session sought to stimulate thinking about quality in terms of obtaining economic suppression of the target organism in the field. It emphasized the difference between producing a viable organism in the mass production process and producing an organism with the attributes that manifest economic suppression of the target pest in the field. Dr. F. Bigler presented a paper on the Swiss experience with *Trichogramma brassicae* and its efficacy on the European corn borer, *Ostrinia nubilalis*. (See also, Bigler, F., 1994, Quality Control in *Trichogramma* Production, in Wajnberg, E. and Hassan, S.A. (eds.) Biological Control with Egg Parasitoids, CAB International, Wallingford, UK.)

The fourth session focused on the population genetics of mass production presented by Professor L. Nunney, Department of Biology, University of California, Riverside. Several conclusions were presented based on principals of population genetics and the limited studies on the population genetics of mass produced arthropods. Firstly, conditions in a mass production facility rapidly select for traits that maximize the organism's reproductive success in the mass production context and this usually occurs in about 10 generations. Secondly, such selection in a mass production facility usually manifests itself as a decrease in the organism's fitness in a field context when it is released (i.e. a reduction in the organism's reproductive success or sexual competitiveness). Thirdly, as a recommendation, consider developing tests to monitor for the loss of quality by mass produced arthropods in the field and its impact on success. Fourthly, consider establishing

mechanisms that minimize adaptation to the rearing conditions, e.g. provision of a remote food source to force the females to fly to reproduce and/or provide a variable temperature as a developmental regime for the organism during mass production. Finally, subject the organism to natural conditions periodically, e.g. rear the organism for one or more generations in a semiprotected field cage or recapture successfully organisms from the field.

Several additional sessions focused on specific topics, including a session on Nematode biological control agents organized by Dr. R. Ridgway US Department of Agriculture, Agricultural Research Service, and purity and contamination organized by Ms C. Glenister, IPM Labs, The Association of Natural BioControl Producers. The Associations of Natural BioControl Producers also finished the first version of their product profiles, that is information supplied to the end-user that specifies what to expect in the way of quality attributes in the enclosed natural enemy and how to test for these attributes.

A field excursion occurred on Wednesday of the meetings. We visited Buena BioSystems, Ventura, California, a commercial insectary that is implementing an ISO-9000 program for their production processes; the Fillmore Protective District Insectary, Fillmore, California, one of the first insectaries world-wide to mass-produce biological control agents and to use them as augmentive agents in an integrated pest management program, and an organic lemon orchard under the advisement of Mr. Tom Roberts of Integrated Consulting Entomology, a licensed self-employed pest control advisor and integrated pest management specialist in citrus and avocados. It was an enjoyable

day in the field, punctuated with a lunch of Mexican food.

R. Luck  
University of California  
Riverside, USA

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### WG Biological Control of Plutella

Co-chairmen: N.S. Talekar, AVRDS, P.O. Box 42, Shanhua Tainan 74199, Taiwan, FAX 06 583 0009.

J.K. Waage, CABI/IIBC, Buckhurst Road, Silwood Park, Ascot, Berks SL5 7TA UK. FAX 344 875 007.

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### WG Fruit flies of Economic Importance

Chairman: M. Aluja, Inst. Ecol., A.C. Apdo Post. 63, Xalapa, Veracruz 91000, Mexico. FAX 281 86 809

Co-chairmen: J. Piedade-Guerreiro, Div. Luta Biol., Inst. Invest. Cient. Trop., Junqueira 14, 1300 Lisboa, Portugal. FAX 364 20 08.

B.A. McPherson, Dept. Entomology, Pennsylvania State University, Univ. Park, PA 16802, USA. FAX 814 865 30 48.

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### WG Ecology of Aphidophaga

Chairman: D. Horn, Dept. Entom., Ohio State Univ., 1735 Neil Ave., Columbus OH 43210-1220, USA. FAX 614 292 2180

Co-chairmen: R. Chambers, Entom., AFRC Inst. Hort. Res., Worthing Rd. Littlehampton W. Sussex BN17 6LP, UK.

I. Hodek, Inst. of Entomology, Czech Academy of Sciences, Branisovska 31, 37005, Ceské Budejovice, Czech. Republic.

The next Aphidophaga Con-

ference entitled „Biological Control and Management of Aphids“ will be held at the Faculty of Agronomy of Gembloux, Belgium, in September 1996. For more information contact the Chairman of the Working Group or the local organizer J.L. Hemptienne, Faculté des Sciences Agronomiques, Passage des Déportés, 2, B-5030 Gembloux, FAX 32 81 62 22 86.

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### WG Chromolaena odorata

Chairman: R. Muniappan, University of Guam, Agricultural Experiment Station, Mangilao, Guam, 96923 USA. FAX 671 734-6842.

The 4th international workshop on biological control and management of *Chromolaena odorata* will be held October 14-19, 1996, in Bangalore, India. The Workshop will be organized by the „Association for Advancement of Pest Management in Horticultural Ecosystems“ in India, *Chromolaena* Network and the International Organization of Biological Control (IOBC) Global Working Group on *Chromolaena odorata*.

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### WG Trichogramma and other egg Parasitoids

Co-chairmen: S.A. Hassan, Inst. Biol. Pest Control, Heinrichstr. 243, 6100 Darmstadt, Germany. FAX 6151 40 790  
E. Wajnberg, INRA Station Zool., 37 Bv. du Cap, B.P. 2078, 06606 Antibes Cedex, France. FAX 93 67 88 25

The next symposium of the working group will be held within the XX International Congress of Entomology, 25-31 August 1996, Florence, Italy. Ask the co-chairmen for more information. It is planned to include a discussion and a training course with practical demonstration on the systematic of *Trichogramma* to be carried

out by Dr. Pinto (USA) and Dr. Pintureau (France).

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### WG IWGO - Ostrinia and other maize pests

Chairman: H.K. Berger, Federal Office and Research Centre, Institute for Phytomedicine, Spargelfeldstr. 191, 1226 Vienna, Austria. FAX 1 288 16 21 08.

Proceedings of the 17th Conference of IWGO held at Volos, Greece, 20-25 September 1993 are now available. Interesting information and papers presented are compiled on 71 pp. Ask H. Berger for a copy.

A report of the 18th Conference of IWGO held at Turda, Romania, 11-16 September 1995 will be published in the next Newsletter.

### Diabrotica subgroup

Due to the first appearance of the Western Corn Root Worm (*Diabrotica virgifera virgifera*) in Europe (in Serbia, Croatia and Hungary) the International Working Group on Ostrinia and other Maize Pests (IWGO - convenor Harald H. BERGER; Vienna) established a **Diabrotica subgroup** within IWGO. Convenor of this subgroup is **EDWARDS Prof. Dr. Richard C.**: Purdue University 1158 Entomology Hall; EST LAFAYETTE,

In 47907 -1158; Indiana; USA FAX: 001 317 494 2152. The objectives of the subgroup are:

- Better knowledge about biology and behavior of the pest and ways of control
- Possibilities of chemical and biological control
- Possibilities of monitoring and forecasting systems
- Training of trainees, advisers and farmers about *Diabrotica* in all possible ways
- Distribution of leaflets and diffe-

rent papers in native languages for information

The aim of the subgroup should be a better knowledge of the pest and the best ways of control, to avoid (or at least a slowing down) a further spread out in Europe.

H.K. Berger

### WG Training, Information, Education (TIE)

Chairman: M. Orazé, Nat. Biological Control Institute, USDA/APHIS/NBCI, 4700 River Road Unit 5, Riverdale, MD 20737 - 1229, USA, FAX 301 734 4329

R. Wang will resign as co-chairman of the working group at the end of 1995 because he returns to China where he will be in charge of new responsibilities. I would like to express my thanks to R. Wang for his efforts and assistance that facilitated cooperation between IOBC and IIBC during the planning of the training course on „Evaluation of Pesticide Effects on Natural Enemies“ held in March 1995 in Malaysia (see Newsletter 61, page 3).

F. Bigler

#### Requested:

#### Newsletter Contributions

I would like to thank all those members who are taking time to send items for the Newsletter. If you have not previously sent anything, please consider doing so. Remember, this is **your** opportunity to let others know what is going on in biocontrol. Take a few minutes and mail or fax items of biological control to the Newsletter editor, so they can be included in the next issue. Deadline for submitting items for the April 1996 issue of IOBC Newsletter is **March 15, 1996**. Send items to F. Bigler (address on page 1).

# Reports on Bio-Control Activities

## FAO Code of conduct for the import and release of exotic biological control agents

This Code of Conduct has been drafted by FAO following a suggestion of the global IOBC (cf. IOBC NEWSLETTER 49, p. 1). After a very large consultation procedure that took several years to be completed, its final version should now be ready for submission to the FAO, October 1995 Conference for endorsement.

Earlier this year, FAO has issued a set of 6 proposed additional guidelines for biological control operations. These are intended to be developed as a support to the practical implementation of the Code of Conduct, and deal with the following 6 topics:

- 1) Setting up a biological control programme
- 2) Tests for host specificity
- 3) Procedures to eliminate hyperparasites and diseases
- 4) Pest risk analysis
- 5) Quarantine procedures, and
- 6) Import and export documentations for biological control agents.

These draft documents are again being widely circulated by FAO, and comments on the present, first version are expected from all parties involved in biological control operations directed against pest organisms around the world.

J.P. Aeschlimann  
CSIRO, 34982 Montferrier-s.-L. (France)

## Guidelines to be issued to limit „insect-pesticides“

The Environment Agency is to begin working out guidelines governing the use of „living agricultural chemicals“ - insects released on crops to eat their natural enemies - so that the insects will not damage the ecosystem, agency officials said Tuesday.

The agency will launch a three-year survey next fiscal year on the effects of such insects on the environment, the officials said.

The insect-pesticides are widely used in the United States and in Europe.

In Japan, two kinds of insects were registered as agricultural chemicals for the first time in March and are already on sale.

Currently, they are only allowed to be used inside greenhouses, but some agricultural experts have voiced concern that they may escape from the greenhouses, multiply rapidly and damage the ecosystem.

The agency will study how these insects have been used in other countries and will draw up domestic guidelines to protect the environment, the officials said.

Only a few countries have governmental guidelines on the use of these pesticides, they added.

The Japan Times  
August 30, 1995

This is but one example that shows the present trend of government agencies to set new regulations for biological control activities. I certainly approve rules and laws for the introduction and release of organisms for biocontrol purposes. However, we have to be on the alert and exercise our influence when ever possible when we expect an „overregulation“ from new rules. Guidelines are useful tools if they balance in a reasonable way benefits and risks of biocontrol compared to other control measures. Environmental risk assessment studies in biological control are most often very time consuming and expensive. It is therefore necessary to develop simple methods and procedures which reduce risks on one hand and which will not hamper biocontrol on the other hand.

F. Bigler

## First Workshop held by COST Action 816

COST Action 816: Biological Control of Weeds in Europe held a workshop „Genetic variations in weed populations: implications for biological control of weeds“ on 5-6 October 1995 at De16mont, Switzerland, organized by the European Station, CAB International Institute of Biological Control.

The workshop was attended by some 40 scientists from 12 European countries and Israel cooperating in this first European programme on biological weed control.

Welcome notes by the organizer and the president of Action 816, Professor Heinz Müller-Schärer, were followed by reviews of the four Working Group Convenors on work carried out on their respective target weeds: 1) *Amaranthus* spp. (D. Schroeder)

are targets for inoculative biocontrol. Therefore, their population biology and crop-weed interactions are being studied in Switzerland and Slovakia, and surveys are being made for pathogens and phytophagous insects associated. 2) *Chenopodium album* (P. Scheepens) is a target for inundative biocontrol, and research is presently concentrating on the *Ascochyta caulina* - *Ch. album* pathosystem. 3) *Convolvulus* and *Calystegia* (G. Défago) are targets for inundative biocontrol as well, with research concentrating on the fungus *Stagonophora* sp. and its combined use with a living mulch. 4) *Senecio vulgaris* (J. Frantzen) is target for an augmentative approach using the rust fungus *Puccinia lagenophora*. The infection process of the fungus on *S. vulgaris* is quantified using a component analysis. This analysis provides a base for comparison of *S. vulgaris* lines on resistance avoidance to infection by *P. lagenophorae*, and to study the influence of pesticides (s.1.) on the infection process. In a later stage joint application of the fungus and pesticides will be investigated.

The research reviews were followed by an invited paper „Joint applications of pathogens and chemical synergists“, presented by Professor J. Gressel, The Weizmann Institute, Rehovot, Israel.

In the afternoon of 5 October, parallel sessions were held by the four working groups. The results of the first year's research and plans for further action were discussed.

During the plenary session on 6 October organised by J. Frantzen, five invited papers were presented and discussed. J. Zadoks, Department of Phytopathology, University of Wageningen, discussed the question whether or not resistance development is a

limiting factor to biological weed control. C. Kempenaar, Institute of Agrobiolgy and Soil Sciences, Wageningen, NL, presented the *Ascochyta caulina* - *Chenopodium album* pathosystem as a case study for resistance. 1. Crute, Horticultural Research International, Wellesbourne, UK, gave a detailed analysis of the genetics of plant-pathogen interactions, using *Senecio vulgaris* and *Arabidopsis* as an example. This was followed by another case study „Resistance of *S. vulgaris* to *Puccinia lagenophora*“ by J. Frantzen, Department of Botany, University of Fribourg, Switzerland. The session was concluded by a presentation of N. Paul, Institute of Environmental and Biological Sciences, University of Lancaster, UK, on „Pathogen-insect interactions: principles and possible applications“. The high quality of all presentations animated a vivid closing discussions. Abstracts of the five invited papers are available on request.

In the later afternoon, the larger number of workshop participants visited the European Station, IIBC. D. Schroeder informed the guests about the status and activities of the Centre for Agriculture and Biosciences International (CABI) and its Institute of Biological Control and co-operators of the station presented their weed biocontrol projects to groups of the visitors.

A press conference was held at the station in presence of Mrs. I. Portner, COST representative of the Swiss Federal Department of Education and Sciences, and Prof. J.-P. Masson, Scientific Secretary of COST-816, European Commission, Brussels. Reports on the workshop and the COST-Action were published in five major Swiss newspapers.

The workshop was concluded by a farewell reception at the meeting site. All participants found the



workshop useful, instructive and stimulating. The next workshop, organized by M. Greaves, will be held in autumn 1996 at Long Ashton, University of Bristol, on „Formulation and Delivery of Biological control Agents“.

D. Schroeder  
European Station, IIBC  
Delémont, Switzerland

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## Summary report of the IIBC-IITA-AGRHYMET Training Course on Microbial Control of Locusts and Grasshoppers and Insect pathology

17 April - 9 May 1995  
Niamey, Niger

### Introduction

The aim of the training workshop was to initiate African scientists of the national programmes to the techniques of Insect pathology and to reinforce the different working groups on biological control of the National Plant Protection Services working on ecologically sound plant protection strategies to control grasshopper pests and doing so, fit in the right line of the objectives of IITA in collaboration with NARS.

### Specific Objectives

- Apply insect pathology techniques
- Develop capability in the field of microbial control using pathogens against agriculturally important pests in general and locusts and grasshoppers in particular.

### Course Content

The course focused on the following topics:

- Principles in Insect pathology with emphasis on locust and grasshopper pathology
- Biology of the different diseases of insects in general and

locusts and grasshoppers in particular (Fungi, Bacteria, Virus, Protozoa and Nematodes)

- Laboratory work with pathogens, including methods of identification of insect diseases
- Mass production of fungi
- Formulation of biopesticides and spraying techniques
- Acridology
- Statistics

### Trainees

The participants were 15 from 9 different countries.

They were research officers, research assistants and senior technicians accepted for the training after selection made by LUBILOSA from the nominations of national agricultural research programs and PVs.

Successful candidates were already working on the different topics or will serve as resource people in the near future.

The trainees held B.S.c., MSc or Ph.D degrees in plant science, agriculture or related fields with minimum two years experience in plant protection especially in campaigns against locusts and grasshoppers.

### Instructors

LUBILOSA staff in Niamey and in Cotonou actively participated.

Introductory lecture on Entomology has been given by Dr. Amadou Bocar Bal from Centre AGRHYMET(DFPV)-Niger.

Lectures and laboratory works in Acridology were given by Dr. T. Diop from AGRHYMET DFPV - Niamey.

Insect pathology lectures and mass production of fungi were given by A. Paraíso.

Laboratory works in insect pathology and in mass production were led by A. Paraíso, Z. Ouambama and Romain Houenoussi.

Formulation and spraying tech-

niques were taught by A. Paraíso, Z. Ouambama and Romain Houenoussi and D. Kpindu.

Lectures on planning experiments and Statistic were given by D. Kpindu and C. Kooyman.

Dr. Hamidou Djibou gave socio economic lectures on participatory rapid appraisal tools and techniques.

Guest lecture was given by Dr. C. Lomer who actively participated in the socio economic trip in the village Babangata.

### Funding

The training course was fully financed by the IITA/IIBC/AGRHYMET project on Locust and Grasshopper Biocontrol (LUBILOSA).

### Manual

The english version of the training manual and the lectures given were photocopied and distributed to the trainees during the workshop. In addition, the english version and publications related to microbial control against locusts and grasshoppers and insects pathology as well as other material have been given to the trainees.

A. Paraíso, Z. Ouambama and  
C. Kooyman  
AGRHYMET-DFPV  
Niamey, Niger

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## Water Hyacinth in Lake Victoria: Biological control agent host- specificity

A two day regional meeting of technical experts sponsored by GTZ was held at Kisumu, Kenya, in December 1994 to discuss the results of host specificity testing of *Neochetina eichhorniae* and *N. bruchi* carried out by Kenya and Uganda. The tests were carried out under an FAO regional TCP project on the recommendation of an earlier meeting held

at Entebbe in November 1993.

The following plants were tested in both choice and no-choice tests: arrowroot, banana, beans, cabbage, coco-yam, eggplant, maize, onion, potato, rice. The results confirmed those of previous studies on these food plants that the beetles could not survive on them, though some minor adult feeding was observed on cabbages.

Technical recommendations from the meeting supported the release of the insects into Lake Victoria. However a final decision to release the agents has not been made as far as we know.

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### New GEF project

While the news on releases of biological control agents into Lake Victoria is still not encouraging, it is pleasing to report that an agreement has now been signed between Uganda, Kenya and Tanzania to proceed with a regional Lake Victoria Environment Programme supported by the Global Environment Facility (GEF). One component of this large programme will be water hyacinth control. This is being coordinated in Uganda by the National Agricultural Research Organisation (NARO) and the planning phase of the project has already begun. It is to be hoped that this proceeds quickly and does not hamper the speedy release of insects into the lake to begin the process of biological control.

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### Ongoing IITA/GTZ support

IITA is continuing its support of water hyacinth biological control activities via its project support to national biological control programmes in the three countries around the lake. This work is coordinated from IITA in Benin by

Mr Matthias Zweigert. In spite of the continuing block on releases of biological control agents into Lake Victoria, the national programmes are carrying out work programmes on water hyacinth in water bodies wholly within their boundaries while awaiting a decision on releases in Lake Victoria.

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### Specimens of *Monochoria africana* wanted for host specificity tests

*Monochoria africana* is a member of the same family as water hyacinth, the Pontederiaceae. There are five species in the genus, two of which occur in Africa. According to Gopal (Aquatic Plant Studies 1. Water Hyacinth, Elsevier 1987) *Monochoria africana* is recorded from Sudan, Kenya (Tana River) and Transvaal in South Africa. *Monochoria brevipe-tiolata* has been recorded from West Africa. Specimens of *M. africana* are required for host specificity testing of the two new candidate biological control agents in South Africa. Previous host specificity tests using the two *Neochetina* weevil species and *Sameodes albiguttalis* have been carried out on five members of the family, including *Monochoria cyanea*. The testing of this endemic member of the family is an expression of the desire of the South Africans to ensure that local biodiversity is not threatened by the introduction of these new agent.

Unfortunately, due to the dry conditions prevailing in South Africa recently, the team from the Plant Protection Research Institute (PPRI) in Pretoria has been unable to find specimens of *Monochoria africana* in South Africa. The plant superficially resembles water hyacinth and has

a blue flower, but grows in muddy areas and on the edge of wetlands, not as a floating water plant. Anyone finding this plant or knowing where it can be located should contact Dr Cilliers directly: Carina J. Cilliers, Agricultural Research Council, Plant Protection Research Institute, Private Bag XI34, Pretoria 0001, South Africa. Tel. 012-329 3276; Fax. 012-329 3278.

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### Water Hyacinth in South Africa: New candidates for biological control

*Eichhornia crassipes* is the most important floating aquatic weed in South Africa. It is a problem in subtropical, temperate and high elevation areas. In the last, cold winters and frost are common and this effects the survival and success of the introduced natural enemies. Since 1985/86 all natural enemies of water hyacinth used elsewhere in the world have been imported into South Africa, subjected to host specificity testing where necessary, released, and have become established. These enemies are: *Neochetina eichhorniae*, *N. bruchi*, *Sameodes albiguttalis*, *Orthogalumna terebrantis* and the fungal pathogens *Cercospora piaropi*, *C. rodmanii* and *Alternaria eichhorniae*. Two further natural enemies, *Bellura densa* (a large moth in the family Noctuidae - Ed.) and *Eccritotarsus catarinensis* (a bug in the family Miridae - Ed.), have now been imported and host specificity tests are nearing completion. Permission for their release into the field is expected during 1995.

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All reports on this page from:  
Water Hyacinth Newsletter  
May 1995

# PEOPLE

## IOBC has lost one of its former presidents

On October 10, 1995, Professor Emeritus Dr. Carl Barton Huffaker died quietly in his sleep after a prolonged illness, thus ending an influential and illustrious scientific career. Professor Huffaker was born September 30, 1914, at Monticello, Kentucky and was educated at the University of Tennessee (Bachelors of Science 1938 and Master's of Science 1939) and Ohio State University (Doctorate of Philosophy 1942). He began his entomological career as a medical entomologist in the United States Health and Sanitation Division of Inter American Affairs in Columbia. In 1946, he joined the faculty of the University of California, Department of Biological Control, Berkeley, as a biological control specialist in weeds. During his career, Professor Huffaker was involved in all aspects of biological control. Some of his better known applied biological control projects involved the control of Klamath weed, *Hypericum perforatum* L. in northern California and of olive scale, *Parlatoria oleae* (Colvec), on olives in California's great central valley. He also co-directed the large, six-commodity, multi-disciplinary Integrated Pest Control Project in the United States. This project was jointly funded by the National Science Foundation, US Department of Agriculture and the US Environmental Protection Administration and became known as the "Huffaker Project". In addition to his applied contributions to biological control, Professor Huffaker also contributed substantially to its theory, authoring several seminal, widely cited

chapters in the influential book edited by P. DeBach, (*Biological Control of Insect Pest and Weeds 1964 Chapman and Hall*). He also edited several influential books in biological control (*Biological Control*, C.B. Huffaker [ed.], 1971, Plenum Press, New York, and *Theory and Practice of Biological Control*, C.B. Huffaker and P.S. Messenger [eds.] 1976. Academic Press, New York), integrated pest management (*New Technology of Pest Control*, C.B. Huffaker [ed.], 1980, John Wiley and Sons, New York), and insect ecology (*Ecological Entomology*, C.B. Huffaker and R.L. Rabb [eds.], 1984, John Wiley and Sons). During his lifetime, Professor Huffaker published more than 200 scientific papers, several of which became citation classics in population ecology, biological control, and integrated pest management. His scholarship, research, and intellectual contributions won him numerous awards including, Fellow of the American Association for the Advancement of Science, election to the United States National Academy of Science and recipient of the Wolf Prize. He was awarded the latter a few months before his death. But even with all of his eminence and success, it is Professor Huffaker's kindness, collegiality and generosity as a mentor that will be missed most of all.

C.B. Huffaker served as President of IOBC Global from 1972 to 1976. From 1976 to 1978 he was Past-President and took over again the Presidency for a biennium in 1978 upon the death of E. Biliotti. Contrary to the system adopted by IOBC since its foundation - where the President had mainly a representative function and the business was entirely carried out by the Secretary-General - Huffaker's Presidency was characterized by a concentration of the most important IOBC activities

in Albany, California. He was particularly aware of the necessity to continuously publicize IOBC objectives (publication of pamphlets, regular issue of the IOBC Newsletters, etc.) and to improve the relationships at international level (his visits to URSS in 1974 and to P.R. of China in 1975, among others). Friends and colleagues remind him as a very active President.

R.F. Luck and V. Delucchi

# REQUESTS & OFFERS

## Information System on Biological Control

This information system was developed in 1994 to facilitate communication among people interested in research, regulatory aspects, and use of biocontrol agents around the world. It is available for on-line searching via Internet: <http://www.ftpt.br/structure/biocontrol/html>.

The available information in the system are:

### Data Bases

- Biological Control of Insects: Directory of Institutions (CENARGEM/EMBRAPA)
- Who is Who in Biodiversity (BDT)
- Who is Who in Risk Analysis of the Use of Biocontrol Agents (to be implemented shortly)

### Legislation related to Biological Control

GATT: Agreement on the Application of Sanitary and Phytosanitary Measures Argentina, Belize, Brasil, Chile

## Introduction of Biocontrol Agents

Reports of The Brazilian Quarantine Laboratory

## Publications on biocontrol

- CNPMA/EMBRAPA
- Bioline Publications (BDT)

## Discussion List

The aim of this list is to discuss subjects related to research, legislation, extension services, and education in biological control.

To subscribe, send the following message to: [listserv@ftpt.br](mailto:listserv@ftpt.br)

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[g.moraes@phx.ftpt.br](mailto:g.moraes@phx.ftpt.br)

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the meeting held at Wellesbourne (United Kingdom), 12-14 December, 1994. Editors: John M. Whipps & Thijs Gerlagh. 138 pp. ISBN 92-9067-071-1.

IOBC/WPRS Bulletin Vol. 18(4) 1995.

Working Group „Integrated Control in Oilseed Crops“. Proceedings of the meeting held at Zürich-Reckenholz (Switzerland), from 24-25 February, 1994. Editors: V.H. Paul, P. Gladders & I.H. Williams. 133 pp. ISBN 92-9067-072-X.

IOBC/WPRS Bulletin Vol. 18(5) 1995.

Working Group „Integrated Control in Citrus Fruit Crops“. Proceedings of the meeting held at Antibes (France), 27-28 October, 1994. Editor: Vincenzo Vacante. 199 pp. ISBN 92-9067-073-8.

IOBC/WPRS Bulletin Vol. 18(6) 1995.

Study Group „Integrated Protection in *Quercus* sp. Forests“. Proceedings of the meeting held at Tempio Pausania (Italy), 15-17 September, 1994. Editor: Pietro Luciano. 114 pp. ISBN 92-9067-074-6.

# PERIODICALS - PROCEEDINGS

IOBC/WPRS Bulletin Vol. 18(1.1) and (1.2) 1995.

Commission „Integrated Production Guidelines and Endorsement“, Vol. 1.1 is the Spanish version of the General Guidelines entitled: „Producción Integrada. Principios y Directrices técnicas“, 22 pp.; Vol. 1.2 is the Italian version called: „Produzione Integrata. Principi e Direttive tecniche“, 27 pp. Both versions were edited by A. El-Titi, E.F. Boller & J.P. Gendrier. Vol. 1.1 and 1.2 both have ISBN 92-9067-069-X

IOBC/WPRS Bulletin Vol. 18(2) 1995.

Working Group „Integrated Plant Protection in Stone Fruit“. Proceedings of the meeting held at Nîmes (France), from 6-8 September, 1994. Edited by P. Cravedi. 93 pp. ISBN 92-9067-070-3.

IOBC/WPRS Bulletin Vol. 18(3) 1995.

Working Group „Biological Control of Fungal and Bacterial Phytopathogens“. „Biological Control of Sclerotium-forming Pathogens“. Proceedings of

Notizzario sulla protezione delle piante No. 2 (nuova serie), 1994.

Proceedings of the Meeting of IOBC/WPRS Study Group „Integrated and biological control of stored products and other commodities“ held at Milano (Italy), 13-14 May, 1993. 61 pp.

IOBC/Global.

Working Group on *Ostrinia* (IWGO) Proceedings of the XVII Conference held at Volos (Greece), 20-25 September, 1993. 71 pp.

**IOBC/WPRS Bulletins are now obtainable for members of all other IOBC Regional Sections and for non-members (see information under Regional Sections, WPRS in this issue).**

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## September 4-6, 1996

Symposium of the IOBC Global working group "Ecology of Aphidophaga". Gembloux, Belgium. Contact: J.L. Hemptienne, Faculté des Sciences Agronomiques, Passage des Déportés 2, 5030 Gembloux. Fax 32 81 622 286.

## October 14-16, 1996

Review Conference on Ecotoxicology: Pesticides and Beneficial Organisms. Cardiff, UK. Contact: P.T. Haskell, School of Pure & Applied Biology, University of Wales, Cardiff, P.O. Box 915, Cardiff CF1 3TL UK. Fax 1222 450 538

## Training Courses

### March 18-29, 1996

Biological Control of Tropical Weeds. Organized by The Co-operative Research Centre for Tropical Pest Management, University of Queensland, Brisbane, Australia.

The main aims of the course are to give participants a balanced understanding of the theory of weed biological control and a practical exposure to the procedures followed in a weed biological control program.

The course is intended for scientists and managers interested in biological control of weeds who have limited experience in this field. It is assumed that participants will have a degree in agriculture or science or equivalent knowledge.

The course offers intensive hands-on training in theory and practice. Teaching will be conducted by scientists who are active in biological control of weeds.

Contact: The Conference Secretariat, Continuing Professional Education, The University of Queensland, 4072 Australia Fax +61 7 3365 7099 Telex

# CALENDAR

## Conferences

### January 21-26, 1996

IX Internationales Symposium on Biological Control of Weeds. Stellenbosch, South Africa. Contact: J.H. Hoffmann, Zoology Department, University of Cape Town, Rondebosch 7700, South Africa, Fax 27 21 650 3726.

### May 7, 1996

International Symposium on Crop Protection. Faculty of Agricultural and Applied Biological Sciences, University of Gent, Belgium. Contact: L. Tirry, Coupure links 653, B. 9000 Gent. Fax 32 9 264 62 49.

### May 26-30, 1996

Congreso de Entomología (VI Latinoamericano y XXXI Nacional), Yucatan, Mexico.

Contact: Viajes Novel de Mexico, S.A. de C.V., Hamburgo 55 Apdo. Postal 61856, 06600 Mexico D.F. Fax (5) 511-0971, 525-7643 y 207-0957.

### August 25-31, 1996

XX International Congress of Entomology, Florence, Italy. Contact the Organizing Secretariat O.I.C., Via A. La Marmorata, 24, 50121 Florence, Italy. Fax 39 55 500 19 12.

### August 25-31, 1996

Symposium on "Artificial rearing of insect parasitoids and predators as part of "Entomophagous Insects and Biological Control". XX International Congress of Entomology, Florence, Italy. Contact: Dr. Simon Grenier, Laboratoire de Biologie Appliquée, INRA, Bât. 406, INSA, 20 Avenue A. Einstein, 69621 Villeurbanne Cedex, France, Fax 33 72 43 85 11.

#### 22nd April - 17th May 1996

3rd international training course  
on Biological Control of Arthro-  
pods Pests & Weeds

Organized by International Insti-  
tute of Biological Control (IIBC)  
and Imperial College, University  
of London

4 week practical "hand-on"  
training on how to use natural  
enemies as biological control  
agents for pest problems in  
tropical and temperate agri-  
culture, forestry and biodiversity  
conservation. We welcome parti-  
cipants from crop protection  
research and extension services,  
universities and rural develop-  
ment NGOs.

Contact: Stephanie Williamson,  
IIBC, Silwood Park, Ascot, Berks.  
SL57TA, UK. Tel. 44 1344 8729  
99, Fax 44 1344 875007, e-  
mail: s.williamson@CABI.org

#### 8 - 19 July 1996

IPM-Tools for Implementation.  
Organized by CRC for Tropical  
Pest Management, University of  
Queensland, Brisbane, Australia.

The aim of the course is to provide  
participants with an under-  
standing of approaches, con-  
cepts, and techniques that will be  
of value to them in deciding on  
IPM research priorities, designing  
and implementing IPM strategies,  
and training pest managers and  
their advisers.

Contact: The Conference Secre-  
tariat (Sally Brown) Continuing  
Professional Education, The Uni-  
versity of Queensland 4072  
Australia. Fax 61 7 3365 7099,  
Telex AA40315 UNIVQLD, Tel.  
61 7 3365 6360, e-mail:  
sally@ceu.uq.oz.au

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U. Kläger, E. Weibel and K. Zangger, Swiss  
Federal Research Station for Agronomy,  
CH-8046 Zürich.

9. - 11. September 1996, Montpellier, France

### IOBC Conference on Technology Transfer in Biological Control: from Research to Practice

Contact person for the local organizing committee: J.P. Aeschlimann,  
CSIRO Biological Control Unit, F-34982 Montferrier s. Lez Cedex,  
FAX 33 67 59 90 40

Correspondence concerning the programme should be sent to W.M.  
Lonsdale, same address as J.P. Aeschlimann.

The 2nd announcement, including information on registration fees,  
deadlines for abstract submission and excursions, was released in  
July 1995.

Programme structure and content was established over the last  
months. A few highlights will show you how attractive the programme  
will be:

- An overview on technology transfer in biological control will be  
presented by the Director of the International Institute of Biological  
Control, Silwood Park, U.K.
- Each topic will be introduced by keynote speakers (main topics  
are: production, delivery, extension, evaluation and public policy)
- Fourteen half-day workshops which will exemplify the theme  
"technology transfer in biological control" will be held. The tentative  
titles of the workshops are:
  1. Biological control of *Bemisia tabaci*
  2. Public and private sector cooperation in mass-rearing
  3. Biological control of post-harvest fruit diseases: making it a reality  
through technology transfer
  4. Commercialization of insect viruses and expression systems
  5. Novel delivery systems for the application and/or introduction of  
weed and insect pathogens
  6. Biological control of soil-born nematodes and diseases
  7. Production and delivery of biopesticides
  8. Evaluation of the efficacy of biocontrol
  9. Locust and grasshopper control
  10. Productions of biocontrol agents in resource-poor regions
  11. Use of pheromones in biological control
  12. Biological control of plant diseases: strategies and implementation
  13. Problems in production, sales and distribution of biological control  
agents
  14. Genetic resources in biological control

### General Assembly of IOBC Global 1996

The General Assembly (GA) of IOBC Global will be held on Monday,  
9 September, at Montpellier, France, during the International  
Conference on "Technology Transfer in Biological Control: From  
Research to Practice", September 9-11, 1996.

The purposes of the GA are (see statutes of IOBC Global) the  
provision of information on the affairs of the Organization, and the  
provision of opportunities for members to express opinions on the  
activities of the Organization and to make recommendations to the  
Council. Try to attend - it's important!