IOBC

# Global

*International Organization for Biological Control*

IOBC Newsletter Issue 100, December 2016

***IOBC** is affiliated with the International Council of Scientific Unions (ICSU) as the Section of Biological Control of the International Union of Biological Sciences (IUBS)*

## Inside:

Message from the President……..……1

Les Ehler obituary……3

Inavasive *Parthenium*……4

Members honoured……5

Upcoming meetings..…… 10

New Global Working Group on cacti…….. 12

Regional section contacts..13

Working group contacts….14

## Message from the President

I'm greatly honored to have been nominated and selected to serve as president of IOBC Global for the next four years and will try my best to live up the charge. The last executive committee has done a tremendous job over the past 4 years and I'm very excited about the current committee, which includes Vanda Bueno and Jiangquing Ding as Vice Presidents, Ronny Groenteman as Secretary General, Josep Jacques as Treasurer, and Barbara Barrett as past president. I have high confidence in this committee and I know that we'll all try hard to hold up the mission of IOBC, which includes communicating the benefits of biological control, facilitating collaboration among biological control scientists throughout the world, advocating for a science-based approach to biological control, and supporting the next generation of biological control scientists.

It's a special time for IOBC as we celebrate 60 years as an organization and the 100th issue of this newsletter! I would like to take this opportunity to express what it is that I love about biological control as a field of study and outline some of the themes that the IOBC global executive committee are committed to pursuing over the next few years.

***continued on next page…***

Biological control is simultaneously a natural phenomenon, a management strategy and a scientific discipline, and it is this confluence of themes that makes it such a satisfying area of study. It means that biological control is composed of fascinating interactions that can make important contributions to society, and that these interactions are addressed using a rich array of theoretical and experimental approaches. I say this mainly to convey my enthusiasm for biological control on many levels. I often tell friends and family how lucky I feel to have found biological control as a calling. It is a field of study that never gets boring and allows for an extremely broad range of activities that range from sophisticated applications of mathematical modeling to molecular analyses and everything in between. I especially enjoy the grubby field work, observations of biocontrol interactions in the field and lab and scanning the old literature for gems of information. It is also worth noting that biological control, in many cases, is an international activity and that it allows for international collaborations of the type that go far beyond business deals or tourist trips.

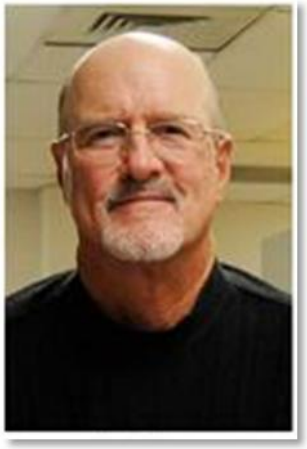
One message that I would like to emphasize is that biological control is inherently a **conservation science**. This is true whether we address issues of explicit conservation concern or if we are working in agriculture or human health-related arenas. Our goal is always to improve the health of the environment by reducing the impact of invasive species, pesticides or other potentially damaging management methodologies. Biological control therefore provides an exquisite platform on which to integrate environmental science with agricultural and health sciences. For example, in the research that I am involved with on biological control of the invasive soybean aphid in North America, we are determining the extent to which biological control can protect endangered prairie butterflies from insecticide sprays (and potential extinction). The project has led to very productive and interesting interactions between the agricultural and conservation communities without which true progress would not be possible. Thus, biological control can act as a bridge between relatively disparate communities and leads to concrete demonstrations of how differing (and sometimes antagonistic) stakeholders can find common ground.

The executive committee has some other goals and I'd like to share some of these here. One is that we want to promote collaborations between biological control scientists and pollination biologists. These two communities have much to learn from each other and they share many of the same goals. Once commonality is that some of the most important biological control agents (parasitoid wasps) share an insect order with the most important pollinators (bees), but more to point is that the same management practices that promote biological control also promote pollination (broadly speaking). A number of scientific synergies recognizing these commonalities are already in place and we will support this agenda within IOBC Global as well. Another area that we would like to foster is biological control of vector-borne diseases. Although there is a rich history of biological control of mosquitoes, for example, this history is being largely ignored in the excitement to develop genetic and symbiont-based methods to suppress mosquito populations in the face of chronic and emerging diseases such as malaria, dengue and Zika. We are not against these methods but would like to argue for a more inclusive approach that considers biological control as well and asks whether it is compatible or not with some of these other approaches. IOBC Global will advocate an approach to disease vector management that increases the consideration of biological control.

Of course, we will also strive to continue the excellent work that has been ongoing under the leadership of last executive committee. This includes engaging with the Convention of Biological Diversity on Access and Benefit Sharing so that biological control importations are not needlessly impeded under new international regulations, and supporting biological control activities and promotion throughout the world. We will also try to continue improvements in the website and social media presence, and simplify the membership application process.

In closing I would like to re-iterate how lucky I feel to be a biological control scientist and how honored I am to be president of IOBC Global. And I speak for myself and the rest of the executive committee when I say that we are always keen to hear comments, advice, etc. So feel free to stay in touch and let us know your thoughts!
**George Heimpel**

## OBITUARY FOR DR. LESTER (LES) EHLER



Dr. Lester E. Ehler left for his heavenly home on September 2, 2016, in Vacaville, California.

Les was born January 3, 1946, in Slaton, Texas, the third of seven children of Ervin & Irene Ehler. He was raised on the family farm in Idalou, Texas, and was enamored with insects from an early age. After graduation from high school, he attended Texas Tech University from which he graduated with a Bachelor's degree in entomology in 1968. Les then attended the University of California-Berkeley, graduating with a Doctorate in entomology in 1972.

Dr. Ehler was a UC Davis emeritus professor of entomology, retiring after 35 years in 2008. Dr. Ehler was a noted entomologist and biological control specialist. Over his career, he taught entomology students and conducted research on many types of insects. He became a respected scientist, not only in academic circles, but also in agriculture in many countries where he provided consulting services to solve for pest problems. He was a prolific author, writing and co-writing publications on various topics in pest management and the use of biological control to eradicate specific pests. In 1990, he co-authored the book Critical Issues in Biological Control. In 2003, his book Genetics, Evolution and Biological Control was published.

Dr. Ehler was an advocate for biological control of insects and a national leader in the discipline of biological control. In 2000, he was elected president of the International Organization for Biological Control (IOBC) headquartered in Montpellier, France.

An example of his work occurred in the Capitol Park of Sacramento, CA. Obscure scale was threatening the park's oak trees. Les used an imported parasitic wasp to the scale. In a few years, the scale had been significantly reduced. In less than 10 years, scale levels were reduced to near complete control.

An avid fisherman, Les loved fishing the lakes of Northern California as well as a trek or two to Alaska fishing for salmon. His wit and charm and his intellectual perspective will be missed by many.

Les is survived by his son Brian of Susanville, CA and daughter Mary Ehler Yung and husband Eric, granddaughters Emma Yung and Georgiana Grace Yung of Sacramento, CA. He was preceded in death by his parents, brother Joseph, and sister Loretta. He is survived by brothers Eugene (Mary) of Denton, TX, Howard (Rita) of Midland, TX and sisters Jan Chapman (Carl) of Houston, TX and Amy Willingham of Irving, TX. He is also survived by numerous nieces and nephews. Memorial services will be held at a later date.

Provided by Jan Chapman

## Invasive weed *Parthenium* damaged by beetle thanks to IPM IL project

*Parthenium hysterophorus L*. is a native plant of tropical and sub-tropical South and North America that adversely affects food security, biodiversity, and the health of both humans and livestock in East Africa. In East Africa, *Parthenium* reduces the yield of many major crops such as sorghum and corn, competes with preferred pasture species, and, when consumed by domestic animals, taints their milk and meat, thereby reducing their value. It also causes human health problems such as severe contact dermatitis and respiratory problems. In addition, because of its ability to release toxic chemicals, *Parthenium* can replace natural vegetation, thus adversely affecting plant biodiversity.

In July, *Zygogramma bicolorata*, a leaf-eating beetle that feeds on *Parthenium*, was released at several sites around Wollenchiti, Ethiopia. The sites included a farmer`s field, a big uncultivated and a fenced area nearby a railway. The released *Zygogramma*, especially the second generation, has begun causing damage to *Parthenium* in cultivated as well as in non-cultivated areas. We are encouraged by the rapid establishment and spread of *Zygogramma*. Wollenchiti this year received heavy rain and that resulted in lush growth of *Parthenium,* which is ideal for the bioagent. Fencing the release plots also allowed *Zygogramma* to have adequate time to build its population before spreading to surrounding fields.

This release was done through the "Biological control of the invasive weed *Parthenium hysterophorus* in East Africa" project led by Virginia State University, which has been awarded a grant of $748,465 by USAID through the Integrated Pest Management Innovation Lab managed by Virginia Tech. The goal of the project is to build on the accomplishments of the two previous USAID IPM IL-funded *Parthenium* projects to abate the spread and impact of the weed in east Africa. One of the objectives of the project is to scale-up the rearing and release of approved biocontrol agents, *Zygogramma* along with the stem boring *Listronotus setosipennis* in Ethiopia.

# Six IOBC Members Honoured

Six eminent IOBC members were honoured at the organisation's 60th anniversary and 17th general assembly, and awarded life membership in recognition of their contribution to the field of biological control and to IOBC. They are listed below in alphabetic order, along with their short biographies. More information about these and past honorary members is available on our website.

**K.J.F. Bolckmans (1966, Belgium)**

Karel Bolckmans obtained his BSc and MSc at the Faculty of Agricultural and Applied Biological Sciences of the Catholic University Louvain (KU Leuven), Belgium. His MSc thesis was on "Genetic transformation experiments with Belgian Endives (Cichori¬um intybus L.)".

After his study, he started to work as Market Development Manager at Biobest biological control in Belgium, where he later became Product Development Manager and Business Development Manager. In these functions he was, among others, responsible for acquisition of new biological control agents, microbial and botanical pesticides, development of new field application methods and mass-rearing systems, testing of pesticide side effects and set up of bumble bee production in New Zealand and Canada. Next he moved for a year to Australia to become Insectary Project Manager at Integrated Pest Management Pty Ltd ("Bugs for Bugs"), followed by an appointment as International Field Research Coordinator at Koppert Biological Systems in the Netherlands. Later at Koppert he became R&D manager Entomology, International Production, R&D manager and Member of the Corporate Management team, Director Business Unit Microbials and Director Global R&D and Production. At Koppert he worked in many different areas, such as coordination of international field research on biological control agents, pesticide side effect testing, development of business plan and project leader of construction of production facilities for the Spanish subsidiary of Koppert, implementation of a long-term continuous improvement and continuous innovation plan in the production department which lead to (1) major cost savings, (2) substantial increase of the reliability of the production systems and (3) improvement of product quality, coordination of the production departments for production of natural enemies in the Netherlands, Spain, Korea and Mexico (±150 people), coordination and organization of Koppert Global Research and Development of invertebrate biological control agents (20 researchers in the Netherlands, Spain, France, Mexico and Canada), new product development, and production technology development and improvement, and deeply involved in the development and execution of the company's strategy since 1999. Since 2014 he is employed as Business Development Director at Special Fruit, Belgium where he is responsible for sustainability issues, new product development and marketing. At the end of 2016, he will accept a new position at Biobest Belgium.

Karel taught Crop Protection at the Catholic University of Louvain, Belgium for several years and is teaching Biological Control at Wageningen University, The Netherlands. He has also been very active in the field of creative thinking and facilitation, systematic innovation and inventive problem solution. He has been a very active member of IOBC/WPRS where he participated in several working groups and presented a number of talks. He published many papers on biological pest control in reviewed journals, IOBC/WPRS bulletins and growers' journals, and wrote several book chapters. He also holds several patents related to mass rearing and release methods for predatory mites.

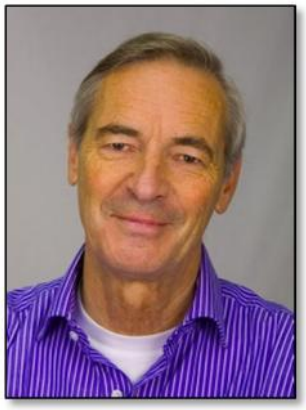
**Dr. Marshall Johnson (USA)**

Marshall Johnson has established an outstanding international reputation for contributions to the fields of biological control and entomology in research, teaching, extension, and administration. He advanced entomology during the past three decades by developing successful IPM programs in several cropping systems. His work has focused on conservation biological control, specifically the integration of natural enemies into systems where heavy pesticide use is common, such as vegetable crops. Almost 100 of his publications specifically deal with aspects of natural enemy biology or ecology, including suppression of pest populations, classical biological control, mass rearing natural enemies, sampling natural enemy populations, host specificity, use of entomopathogenic nematodes, lethal and sub-lethal impacts of pesticides on natural enemies, and pesticide resistance in natural enemies. To achieve integration, he not only focused on the biology and ecology of natural enemies, but also examined various components of agro-systems to determine how pesticide applications could be reduced. This included the development of sampling methods to time control actions, as well as determination of pest impact on crop yields to determine the need for control actions.

Johnson has published more than 240 publications, including 155 refereed journal articles, book chapters, and review articles. Nearly 100 of his articles specifically deal with some aspect of natural enemy biology or ecology. His published works have been cited over 4,100 times in the scientific literature.
But Johnson's impact on biological control extends far beyond the number of articles he has published. He has served in a leadership role in several organizations focused on coordinating and expanding the role of biological control. He served as President of IOBC- NRS; he also served on the US Western Regional Committee on Biological Control; the Customer Advisory Group of the National Biological Control Institute; and the Experiment Station Committee on Policy (Biological Control Working Group). He also served for seven years as an editor of the journal *Biological Control – Theory and Application in Pest Management*, and continues to serve on the journal's editorial board. He has helped organize and coordinate several conferences on biological control.

His many awards and honors include being named a fellow of both the Entomological Society of America and also the American Association for the Advancement of Science. He is a recipient of the C. W. Woodworth Award from the Pacific Branch of the Entomological Society of America, and the Entomological Society of America Recognition Award for Contributions to Agriculture. Notably, he received the Distinguished Scientist of the Year Award in 2012 from the International Organization for Biological Control - Nearctic Regional Section (IOBC-NRS).
He helped train the next generation of biocontrol practitioners by teaching a biological control course at the University of Hawaii at Manoa from 1983 to 2000, where eleven of his graduate students conducted research on aspects of biological control.

**Prof. Dr. J. C. van Lenteren (1945, The Netherlands)**



Joop van Lenteren obtained his PhD. degree in ecology from Leiden University in 1976. He was Professor of ecology and biological control at the same university from 1981-1983. Joop next moved to Wageningen University where he served as Professor of ecological entomology, Chair and Head of department (1983-2003); Professor of entomology (2003-2010); and active Emeritus Professor (2010-onwards). Prolific researcher with more than 200 refereed publications, Joop has made significant contributions in ecology, entomology and biological control, including population dynamics and behavioural ecology of insects, trophic interactions, biological control, pre-introductory evaluation criteria for selection of natural enemies, quality control of biocontrol agents, environmental risk assessment of exotic natural enemies, and sustainable agriculture.

Throughout his career Joop has nicely and successfully combined applied and fundamental research. His contributions are recognized internationally and his outstanding research on natural enemies has contributed directly to the implementation of several biological control programmes around the world.

Owing to his strong and passionate commitment to biological control and sustainable agriculture, Joop has provided admirable service to the community by actively serving on numerous national and international committees, boards, and experts panels (e.g. Member (2006-2015) and Vice-chair (2009-2015) of the Panel of experts on Plant Health of the European Food Safety Authority (EFSA), member of Council of IOBC-WPRS (2000-2004), member of the Dutch Governmental Board for of Pesticides (1997-2007), Vice-president of the Netherlands Entomological Society (1994-2006), consultancies for FAO, World Bank, CGIAR institutes, European Community and Dutch Ministry of Foreign Affairs in Africa, Asia and Latin America. Joop has been truly dedicated to IOBC Global and his contribution is unique. He served as President (2004-2008), Vice-President (2000-2004; 2012-2016), and Secretary General (2008-2012).

Joop has received numerous and prestigious awards and distinctions throughout his career, including the Royal Netherlands Society for Sciences and Arts Life Sciences Award (1982); "Professor Harry Scott Smith" Award of the University of California (1992); "Professor Jozef van den Brande" Award of the University of Ghent (1994) for fundamental and applied entomological research; "Delta d'Oro" Award of the Province of Ferrara (Italy): Eminent scientist in field of environmental sciences and sustainable pest management (1996); Doctor Honoris causa of Szent Istvan University, Budapest, Hungary (1999); Royal/Shell Sustainability Prize, in recognition of fundamental and applied research in biological crop protection, The Hague (2005); Rank Prize in recognition of studies on plant, herbivore natural enemy relationships and biological control, London (2005-2006) (with Dicke and Vet); Lifetime Achievement Award of the world-wide biological control industry for outstanding contribution (2010); Doctor Honoris causa of Warsaw University of Life Sciences, Warsaw, Poland (2011); Certificate of distinction in recognition of outstanding achievements in Entomology by the Council of the International Congresses of Entomology (ICE 2012); Fellow of the Royal Netherlands Academy of Sciences and Arts (2001); Fellow of the Royal Netherlands Society for Sciences and Arts (1994); Honorary fellow of the Italian Academy of Entomology (2005).

**Dr. Peter Mason (1952, Canada)**

Peter has contributed extensively to the knowledge and management of insect biological control agents and insect pest targets, and has been instrumental in the education of new entomologists in that field. He has worked on a diverse range of insects, including bertha armyworm, *Lygus* plant bugs, cabbage seedpod weevil, and leek moth. His research on these and other systems has made applied contributions in pest management and in the regulation of biological control, which are of great significance in Canada and around the world.

Peter has been instrumental in the development of procedures for testing biological control agents against non-target species. The changes in perception of the safety of introduction of natural enemies for classical biological control of pest insects led governments in North America and around the world to implement new regulations that required extensive testing of candidate biological control agents against species that might be harmed by the introduction. Through his work, Peter and collaborators have developed scientifically-sound approaches to meeting the non-target testing regulations. These include procedures for the selection of key species for non-target testing, the recognition of potential conflicts between weed and arthropod biological control agents, and the development of non-target testing lists for insect biological control projects that are pre-approved by regulatory agencies. As chair of the Canadian Biological Control Review Committee, which oversees the importation of biological control agents into Canada, Peter has been instrumental in assisting entomologists to meet these guidelines. These approaches are being adopted by the international community of biological control practitioners.

Peter has been instrumental in the promotion of biological control approaches to insect pest management. His book "Biological Control Programmes in Canada, 1981-2000" (Edited by Mason and Huber), and a new volume in the series, "Biological control Programmes in Canada 2001 – 2012" (in press), highlight biological control programmes and practices in Canada and provide a much-needed justification for ongoing support of these programmes, including programmes in entomology.

Peter's achievements can be summarized as follows:

- Over 60 published research papers, with an average citation rate in excess of 3 per title.
- Numerous book chapters and reviews on insects and insect biology.
- Management of the AAFC National Arthropod Quarantine facility.
- Leadership of scientists in the Biodiversity section, AAFC Research Centre, Ottawa, ON, since 2001.
- Entomological Society of Canada President (2011-12); a long serving member of committees, organizer of meetings in the ESC; a key member of the North American Plant Protection Organization, Biological Control Committee; a co-convenor of the IOBC Global working group on benefits and risks of biological control agents.
- Recently awarded an OECD Co-operative Research Programme Fellowship.
- Co-supervisor and committee member for graduate students at universities across Canada and internationally in China and Europe.

**Dr. Eric Wajnberg** (France)

Eric Wajnberg graduated from the Université de Lyon in 1986 with a PhD in population biology of entomophagous insects. He next took a position at the National Institute for Agronomic Research (INRA) in Sophia Antipolis, France. His research focused on experimental and theoretical studies of parasitoid behaviour and ecology. He has published more than 100 scientific papers on a broad spectrum of topics in excellent scientific journals. Throughout his career, Dr. Wajnberg has repeatedly showed his dedication to biological control. He was director of the European Science Foundation programme 'Behavioural Ecology of Insect Parasitoids' from 2004-2009.

He currently chairs the INRA group 'Theoretical and Applied Ecology in Protected Environments and Agrosystems'. His contribution to IOBC-Global has been outstanding. He is since 2006 the Editor-in-Chief of IOBC's scientific journal BioControl. He has also served as associate editor of Entomologia Experimentalis et Applicata, Neotropical Entomology, Applied Entomology and Zoology and Acta Oecologia. Dr. Wajnberg served as Secretary General of IOBC-Global from 1996 to 2000. He chaired the IOBC working group on egg parasitoids during 12 years, from 1988 to 2010. He has organized several national and international scientific meetings. Through the IOBC working group on *Trichogramma* and other egg parasitoids, he co-organized several meetings (San Antonio, 1990; Cairo, 1994; Perugia, 2002) and symposia (Firenze, 1996; Cali, 1998; Foz do Iguacu, 2000). On behalf of IOBC-Global, he also co-organized the International meeting 'Quality Control of Mass-Reared Arthropods' in France in 1996 and the International symposium 'Evaluating Indirect Ecological Effects of Biological Control', in France in 1999. He has also been involved in several activities for the promotion of biological control to the public. Dr. Eric Wajnberg is a passionate and dedicated researcher and his contribution to biological control science and IOBC-Global has been outstanding.

**Dr. Ren Wang (China)**

Dr. Ren Wang obtained his PhD in Entomology focusing on biological control of weeds with insects in 1985 at the Virginia Polytechnic Institute & State University, Blacksburg, Virginia, USA. He was a researcher (Assistant Research Professor, Associate Professor and Professor) at the Institute of Biological Control of the Chinese Academy of Agricultural Sciences (CAAS) during 1985-1993, and pioneered China's program of biological control of invasive weeds. He studied insect and weed biology and ecology, and developed techniques of mass rearing and releasing insect biocontrol agents.

Dr. Wang was the founding director of the joint Sino-American Biological Control Laboratory between USDA and the Chinese Ministry of Agriculture during 1987-1993. From 1993 to 1995, he was the Deputy Director, Program Development of the International Institute of Biological Control (IIBC), CAB International, UK. In 1994, he was appointed by the Chinese State Council as Vice President of CAAS. He had played a key role in developing collaboration between Chinese and international colleagues on biological control of weeds and pest insects from 1980-2000. During this period, he also developed and led biological control programs against alligator weed, common and giant ragweed as well as water hyacinth in China. He was vice-president of IOBC-APRS in the early 1990s.

From 2000-2007, Dr. Wang served as Deputy Director General for Research at the International Rice Research Institute (IRRI) based in the Philippines. In July 2007, He became the Director of the Consultative Group on International Agricultural Research (CGIAR) based at the World Bank in Washington, DC, USA. In Oct 2010, he returned to CAAS and was appointed as the First Vice President of the Academy, responsible for international cooperation and technology transfer. On Feb 28, 2013, Dr. Wang took his current position in Rome, Italy as Assistant Director General of FAO's Agriculture and Consumer Protection Department.

Dr. Wang served on a series of high level international boards and committees in the area of agriculture and agricultural research, and was an invited speaker at numerous conferences and forums in both China and throughout the world.

**The 5th International Symposium on Biological Control of Arthropods** will take place in Langkawi, Malaysia, September 11-15, 2017.

This conference continues the series of international symposia on the biological control of arthropods held every four years. Dr Roy Van Driesche was the founder of the series and held the first meeting in Hawaii in January 2002. The second meeting took place in Davos, Switzerland, in September 2005, the third in Christchurch, New Zealand, in February 2009. The latest one was held in Pucón, Chile, in March 2013. The upcoming 5th symposium will follow the proven format and framework of the previous four symposia, as they have all been very successful and highly appreciated by the participants.

For more information: **www.isbca-2017.org**

or contact the Secretary: info@isbca-2017.org



The purpose of the conference is to familiarize participants with new developments, trends and challenges related to insect pest management, both in the fields of agriculture and public health, and to foster a broad exchange of information. The conference and its deliberations and conclusions will provide useful feedback to the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture and, in particular, to its future programme to address Member States' needs in the rapidly evolving field of insect pest management. It will also highlight the challenges faced by Member States, such as the loss of insecticides due to resistance and other causes, climate change, and the global spread of invasive species and diseases in new regions.

- Abstract submission deadline: 31st Dec 2016

More information about:

- the conference https://conferences.iaea.org/indico/event/121/overview
- Abstract submission: https://conferences.iaea.org/indico/event/121/call-for-abstracts/


7th meeting of the IOBC/WPRS Working Group "**Landscape management for functional biodiversity**" will be held in conjunction with a British Ecological Society Agricultural Ecology Special Interest Group meeting on
**29-31 March 2017 Dundee, Scotland**

To receive announcements about the meeting contact Group Convenor John Holland

***BioControl***, the official journal of IOBC

BioContorol has just celebrated its 60th anniversary!
Submit your best work to our journal this year.

Some recent articles of interest:



BioControl
DOI 10.1007/s10526-016-9766-8
CrossMark
REVIEW

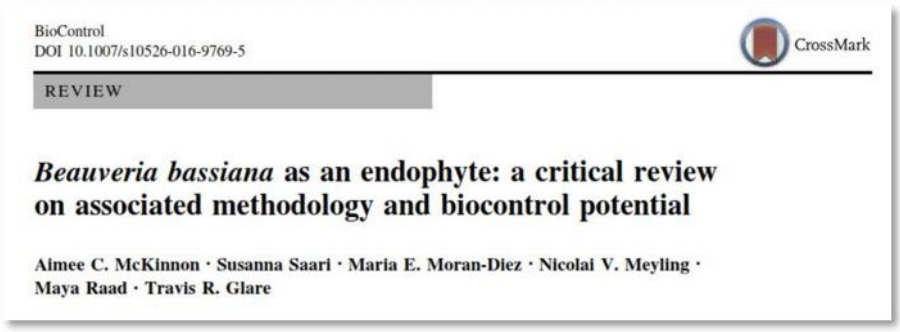
**Parasites of *Harmonia axyridis*: current research and perspectives**

Danny Haelewaters · Serena Y. Zhao · Susana Clusella-Trullas · Ted E. Cottrell · André De Kesel · Lukáš Fiedler · Annette Herz · Helen Hesketh · Cang Hui · Regina G. Kleespies · John E. Losey · Ingrid A. Minnaar · Katie M. Murray · Oldřich Nedvěd · Walter P. Pfliegler · C. Lidwien Raak-van den Berg · Eric W. Riddick · David I. Shapiro-Ilan · Rebecca R. Smyth · Tove Steenberg · Paul S. van Wielink · Sandra Viglášová · Zihua Zhao · Piotr Ceryngier · Helen E. Roy


BioControl (2016) 61:615–630
DOI 10.1007/s10526-016-9744-1
CrossMark
REVIEW

**Encompassing the relative non-target risks from agents and their alien plant targets in biological control assessments**

Paul O. Downey · Iain D. Paterson


BioControl
DOI 10.1007/s10526-016-9769-5
CrossMark
REVIEW

***Beauveria bassiana* as an endophyte: a critical review on associated methodology and biocontrol potential**

Aimee C. McKinnon · Susanna Saari · Maria E. Moran-Diez · Nicolai V. Meyling · Maya Raad · Travis R. Glare

New Global Working Group Announced

# MANAGEMENT OF CACTUS SPECIES

**Mission**

The family Cactaceae contains some of the most damaging invasive plant species in the world. The regions with the largest numbers of invasive cactus species are Australia (39 invasive cacti species), South Africa (35), Spain (23), Italy (13), Pacific Islands (13), France (10), Namibia (8), Portugal (7), China (5), Zimbabwe (5) and Hawaii (4). Each of these areas has its own management strategy to deal with cactus invasions. We, therefore, believe that there may be opportunities for increased collaboration among countries with the same problems for which the solutions could be shared.

Biological control has been proven to be one of the most successful methods to control invasive cactus species outside their native range. Therefore, the International Organization for Biological Control (IOBC) is the perfect organization from where to start improving collaboration between countries. Overall, the main aim of this working group is share, design, discuss and promote best management practices (including biocontrol) of cactus species in their introduced range.

**Future activities**

- Develop an on-line survey to determine the impacts of cactus species, as well as capture any perceived benefits of any of the species.
- Create an accessible website to inform as well as gather information on the management of cactus species.

**Group Convenor:** Dr Ana Novoa: novoa.perez.ana@gmail.com

Image credit:
Ignacio Baez - bugwood.org, Public Domain,
https://commons.wikimedia.org/w/index.php?curid=14986324

## West Palearctic Regional Section (WPRS) www.iobc-wprs.org

| | |
|---|---|
| President | Dr. Philippe C. Nicot, France: nicot@avignon.inra.fr |
| Vice Presidents | Dr. Andrea Lucchi, Italy: andrea.lucchi@unipi.it |
| | Dr. Ilaria Pertot, Italy: ilaria.pertot@fmach.it |
| | Dr. Lene Sigsgaard, Denmark: les@plen.ku.dk |
| Secretary General | Dr. Gerben Messelink, Netherlands: Gerben.Messelink@wur.nl |
| Treasurer | Dr. Sylvia Blümel, Austria: sylvia.bluemel@ages.at |

## Nearctic Regional Section (NRS) www.iobcnrs.com

| | |
|---|---|
| President | Jim Nechols, Kansas, USA: jnechols@ksu.edu |
| President-Elect | Cesar Rodriguez-Saona, New Jersey, USA : CRodriguez@aesop.rutgers.edu |
| Vice President | Mary Gardiner, Ohio, USA: gardiner.29@osu.edu |
| Secr. / Treasurer | Stefan Jaronski, Minnesota, USA: bug@midrivers.com |
| Corresponding Sec. | Paul Abram, British Columbia, Canada: paul-abram@hotmail.com |
| Past President | Donald Weber, Maryland, USA: Don.Weber@ars.usda.gov |

## Asia and the Pacific Regional Section (APRS) www.aprs.iobc.info

| | |
|---|---|
| President | William (Bill) Palmer, Australia, bill.palmer@daf.qld.gov.au |
| Vice Presidents | Yulin Gao, China, ylgao@ippcaas.cn |
| | Mark McNeill, New Zealand, mark.mcneil@agresearch.co.nz |
| Secretary General | Dr. Barbara Barratt, New Zealand: barbara.barratt@agresearch.co.nz |
| Treasurer | Mike Cripps, New Zealand, treasurer.aprs@iobc.info |
| Past President | Leigh J. Pilkington, Australia, president@aprs.iobc.info |

## Neo-tropical Regional Section (NTRS) www.iobcntrs.org

| | |
|---|---|
| President | Dr. Yelitza Colmenarez, Brazil & Venezuela: y.colmenarez@cabi.org |
| Vice Presidents | Dr. Bruno Zachrisson, Panama: bazsalam@gmail.com |
| | Ximena Cibils Stewart, Uruguay: xcibils@inia.org.uy |
| Secretary General | Prof. dr. Maria G. Luna, Argentina: lunam@cepave.edu.ar |
| Treasurer | Dr. Marcus Vinicius Sampaio, Brazil: mvsampaio@iciag.ufu.br |
| Past President | Dr. María del Rosario Manzano, Columbia: mrmanzanom@unal.edu.co |

## East Palearctic Regional Section (EPRS)

| | |
|---|---|
| President | Academician Dr. Victor Dolzhenko, St. Petersburg, Russia: vid@iczr.ru |
| Vice Presidents | Prof. Danuta Sosnowska, Poznan, Poland: Danuta.Sosnowska@iorpib.poznan.pl |
| | Prof. Milka Glavendekic, Belgrade, Serbia: milka.glavendekic@sfb.bg.ac.rs |
| | Prof. Vladimir Nadykta, Krasnodar, Russia: vnadykta@mail.ru |
| Secretary General | Eduard Sadomov, Moscow, Russia |

## Afro-Tropical Regional Section (ATRS)

| | |
|---|---|
| President | Dr. René Noël Poligui, Gabon: rnpoligui@gmail.com |
| Vice Presidents | Dr. Costas Zachariades, South Africa: ZachariadesC@arc.agric.za |
| | Dr. Samira A. Mohamed, Kenya: sfaris@icipe.org |
| Secretary General | Dr. Jean-François Vayssières, Benin, J.Vayssieres@cgiar.org |
| Treasurer | Dr. Koffi Eric Kwadjo, Ivory Coast: kokoferic@yahoo.fr |

## Mass Rearing and Quality Assurance www.amrqc.org

Contacts: Dr. P. De Clercq, BELGIUM: Patrick.DeClercq@ugent.be
Dr. T. Coudron, USA: coudront@missouri.edu

## Ecology of Aphidophaga http://aphidophaga.de

Contacts: J. P. Michaud, USA (chair): jpmi@ksu.edu, Kris Giles (USA), Nick Kavallieratos, GREECE; Carlo Ricci, ITALY; Wolfgang Weisser, GERMANY

## Biological Control and Management of Eupatorieae Weeds

http://www.arc.agric.za/home.asp?pid=5229
Contact: Michael Day, Australia: michael.day@daf.qld.gov.au

## Biological Control of Diamondback Moth & other Crucifer Insects

http://web.entomology.cornell.edu/shelton/diamondback-moth/
Contact: Dr. Tony Shelton, USA: ams5@cornell.edu

## Benefits and Risks Associated with Exotic Biological Control Agents

Contacts: Dr. Peter Mason, CANADA: peter.mason@agr.gc.ca
Dr. George Heimpel, USA: heimp001@umn.edu

## Biocontrol of *Ostrinia* and Other Maize Pests www.iwgo.org

Contacts: Dr. Ulli Kuhlmann, SWITZERLAND: u.kuhlmann@cabi.org
Dr. Tom Sappington, USA: tsapping@iastate.edu
Dr. Wang Zhenying, China: zywang@ippcaas.cn

## Biological Control and Management of Parthenium Weed

Contacts: Lorraine Strathie, South Africa: strathiel@arc.agric.za
Wondi Mersie, USA: wmersie@vsu.edu
Rangaswamy Muniappan, USA: ipm-dir@vt.edu or rmuni@vt.edu

## Management of Cactus Species

Contact: Dr Ana Novoa, South Africa: novoa.perez.ana@gmail.com

## Commission on Biological Control and Access and Benefit Sharing

www.iobc-global.org/download/659ABSinBiCoAddMat2009.pdf
Contact: Dr Peter Mason, CANADA: peter.mason@agr.gc.ca

Join an IOBC International Working Group…. or propose a new one!
Working groups can operate on the global level, or within a regional section…

# Join IOBC…

Membership in IOBC is open to all individuals and all organizations, public or private, who desire to promote the objectives of biological control. There are four categories of membership:

- Individual Membership is open to all individuals engaged or interested in biological control.
- Institutional Membership is open to any institution, including government departments, academies of science, universities, institutes and societies participating in biocontrol activities.
- Supporting Membership is open to any person or institution interested in promoting the objectives of the Organization.
- Honorary Membership may be conferred by the Council to anyone who has made outstanding contributions to biological control.

For more information and application forms:
http://www.iobc-global.org/member.html

## Biocontrol in Action Corner

Send photos of biocontrol agents or biocontrol practitioners in action to fill this corner of the newsletter. Remember to include a descriptive caption

groentemanr@landcareresearch.co.nz

Send ideas for the IOBC Global newsletter to:

Ronny Groenteman,
IOBC Secretary General
Landcare Research
Gerald Street.
Lincoln 7608, Canterbury
New Zealand

groentemanr@landcareresearch.co.nz

## IOBC Global Executive Committee:

| | |
|---|---|
| President: | Prof Dr. George Heimpel<br>University of Minnesota, USA<br>heimp001@umn.edu |
| Vice-Presidents: | Prof Dr. Vanda Bueno<br>Federal University of Lavras BRAZIL<br>vhpbueno@den.ufla.br |
| | Dr. Jianqing Ding<br>Chinese Academy of Sciences CHINA<br>dingjianqing@yahoo.com |
| Secretary General: | Dr. Ronny Groenteman<br>Landcare Research Lincoln NEW ZEALAND<br>groentemanr@landcareresearch.co.nz |
| Treasurer: | Prof. Dr. Josep Jacas Miret<br>Universitat Jaume SPAIN<br>jacas@camn.uji.es |
| Past president: | Dr. Barbara Barratt<br>AgResearch Invermay NEW ZEALAND<br>barbara.barratt@agresearch.co.nz |

*Full contact details: http://www.iobc-global.org/contacts.html*