

IOBC-NRS NEWSLETTER

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IOBC-NRS Distinguished Scientist Award Winner: Dr. Jack DeLoach

Dr. Culver (Jack) DeLoach, the 2008 recipient of the IOBC Scientist of the Year Award, was honored at our Annual Meeting in Reno, Nevada. Jack is an international authority on the biological control of weeds and has been highly recognized for his productive career that spans over 40 years with the United States Department of Agriculture-Agricultural Research Service. Jack is a graduate of Auburn University where he received his BS and MS degrees before attending North Carolina State University where he received his PhD in 1964. After working for the University of Hawaii for 2 years on rice stem borer biological control, he joined USDA-ARS in Columbia, MO, and then later moved to Argentina, where he headed the ARS South American Biological Control Laboratory. While in Argentina, Jack discovered and evaluated over 100 insects with potential to control 6 aquatic and 8 rangeland weeds. Four of these currently provide control of water hyacinth in the U.S. and 10 other countries; water lettuce in the U.S. and 7 other countries; mesquite and Parkinsonia in Australia and South Africa, and field bindweed in the western U.S. He conceptualized the saltcedar biological control program and worked with others to make it a reality. That program has been extremely successful through the import and release of the saltcedar leafbeetle, *Diorhabda elongata* (and related spp.) that has produced widespread defoliation in over 14 western states. The beetles are now being used to reduce the impact of saltcedar on several western waterways. Literally hundreds of miles of native riparian vegetation along the Colorado River, including the Nature Conservancy's Refuge in Moab, UT, are being released from the strangling grip of saltcedar monocultures through the specific feeding activity of this beetle. Only time will tell the overall magnitude of this control effort, but it clearly is an outstanding career accomplishment.

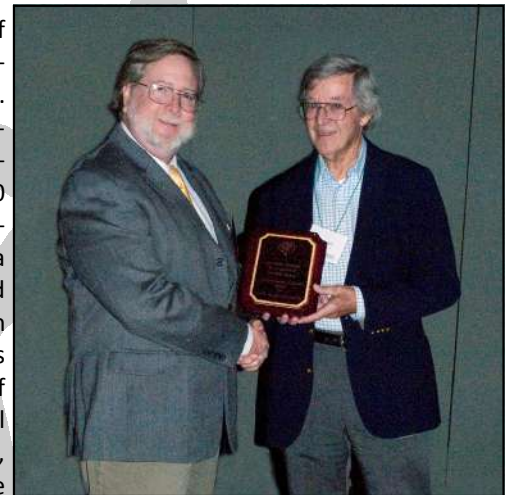
Continued on page 2

2009 Midwest Institute for Biological Control: Basic and Applied Ecology of the Coccinellidae

Jonathan Lundgren, John Obrycki, Ted Evans, Michael Seagraves, Yukie Kajita, and Nat Vandenberg will be instructing a modular 4-d shortcourse on the Coccinellidae. Topics to be covered include the effects of

habitat manipulation on coccinellids, lady beetle feeding ecology, intraguild interactions, population genetics, and morphology and taxonomy of the group. The course is tentatively set for July 7-10, 2009 at

Richardson Wildlife Center in central Illinois. Additional details will be forthcoming, and inquiries can be made to Jonathan Lundgren: Jonathan.Lundgren@ars.usda.gov



Marshall Johnson presenting Jack DeLoach his award



MESSAGE FROM THE PRESIDENT:

Changes to the IOBC-NRS Governing Board

Welcome to the new members of our governing board!

It is a new year and a new beginning, certainly for me as in-coming President of the Nearctic Regional Section. I am excited about the next two years, but also a little nervous following in the footsteps of such competent people. I would first like to thank the outgoing Governing Board for a job well done, especially Marshall Johnson and Rob Wiedenmann. Marshall was an excellent President and leader and with Rob, I have never seen anyone who worked as hard and tirelessly to promote IOBC and biocontrol. I think that the NRS has moved ahead considerably over the past two years due to the efforts of everyone on the Board. The new governing Board also has some excellent individuals. The Members-At Large bring a new slate of people who are well respected in the field of biological control. James Hagler will remain as Vice President and is organizing a symposium on molecular tools in biocontrol for our next meeting in Indianapolis. Jonathan Lundgren will be Corresponding Secretary for another term and will be spear heading a major overhaul of our website. Stefan Jaronski will continue for another two years as Secretary / Treasurer. These days it can be difficult to get sound financial advice, but Stefan has served the Society well in this capacity. I am really looking forward to working with Doug Landis as President-Elect, as Doug is well recognized as a leader in biocontrol and how it is integrated in the bigger agricultural landscape picture. Of course, Marshall will be invaluable with his experience as Past President and I will be seeking his guidance often. Although Rob Wiedenmann is no longer on the Board, he has been an excellent resource person in the past to me. So Rob, do not be surprised if you get an email out of blue from me asking for your advice!

You have heard from Marshall in the Fall Newsletter of how membership in NRS is now increasing again. However, this is not the time to sit on our laurels. We need to continue to add new members and promote biological control and the role that IOBC can play. We are trying to increase our profile and visibility as an important regional and global organization in biocontrol issues and activities. One way to achieve this goal is to partner / collaborate more with other biocontrol associations and working groups. Last year, the NRS sponsored the registration of an invited speaker at the Annual Meeting of the Association of Natural Bio-Control Producers. We also established an Education Development Award last year. The objective of this program is to partner with existing or new courses and workshops to facilitate educational opportunities that advance the knowledge and practice of biological control. I feel that NRS must continue to expand these initiatives. As a goal for my two year term, I am going to try to build closer linkages with the other biocontrol associations and working groups in North America and our colleagues to the south in Central and South America. I am planning to organize a joint IOBC NRS and Neotropic Regional Section meeting covering all aspects of biological control at Niagara Falls Canada in May 2010. We will be encouraging other biocontrol groups to partner with us as we can all gain from expanding our networks, especially in other disciplines. You will be hearing more about the meeting in the near future. As an association, we must always be open to new ideas and suggestions. Thus, I encourage you to provide your comments and input to myself or other Board members as to how the NRS can better serve you.

*Les Shipp
Agri-Food Canada
Harrow, Ontario*

Distinguished Scientist Award: Jack DeLoach

Thus throughout his career, Jack has developed and applied biological control methods that have significantly advanced the science of biological control and have resulted in many benefits for agriculture and the natural environment. In doing so, Jack has taken the initiative to organize teams to address critical invasive plant issues, a multi-\$billion problem, by developing action plans, forming inter-agency consortia, pulling together diverse groups to address common problems, and by breaking down boundaries that have limited projects in the past. Jack's stature and impact are also supported by his strong record of scientific publication and his frequent national

and international consultation. He is well known for mentoring other scientists, cooperators, and students, worldwide. For his efforts, Dr. DeLoach has been recognized with a Certificate of Appreciation from USDI-Bureau of Reclamation, with a USDA-ARS Certificate of Merit, with the USDA Secretary's Honor Award for Excellence, USDA-ARS Southern Plains Area Scientist of the Year Honor in 2005, and most recently with the last year's IOBC award. Please extend your congratulations to Jack at:

Jack.Deloach@ARS.USDA.GOV.

*Ray Carruthers
USDA-ARS
Albany, CA*



***Diorhabda elongata*: a biocontrol agent of saltcedar.**

IOBC-NRS Graduate Student Awards

Robert J. O'Neil Outstanding PhD Student in Biological Control Award : Ezra Schwartzberg

Ezra received his B.S. in Environmental and Forest Biology with an Entomology concentration from the State University of New York College of Environmental Science and Forestry. He received his M.S. degree in Entomology from the University of Kentucky

where he studied the chemical defenses of the ladybird beetle *Scymnus louisianae*, a predator of the soybean aphid.

For his doctorate, Ezra is studying plant defenses in response to feeding by aphid herbivores. Plant defenses, including the release of airborne volatile chemicals, have been shown to play an important role in attracting natural enemies. Ezra's current research investigates how aphids manipulate their host plant environment by counteracting defense-related phytohormones and natural enemy-attracting volatiles.

In addition to his dissertation research, Ezra has been very active with the Entomological Society of America where he has served as an integral part of several committees. He has been active in teaching both graduate and undergraduate courses at Penn State and participating in several outreach events throughout Pennsylvania. Ezra received the Kozak Fellowship Award for Public Education from Penn State in 2008.

*Jim Tumlinson
Pennsylvania State University
University Park PA*



Ezra Schwartzberg and IOBC-NRS president, Les Shipp

Outstanding MS Student in Biological Control Award: Thelma Heidel

Thelma Heidel received a joint Bachelors degree in Plant Pathology and Entomology from the University of Wisconsin in 2003. During this time she worked with Dr. Gary Jahn of the International Rice Research Institute (IRRI) rice stem borer parasitoids as part of a year long internship at the University of the Philippines-Los Baños. When residing in Madison, she worked

with Dr. Walt Stevenson as a lab technician in the Plant Pathology Department. In 2004 she took a job with Syngenta Corporation where she worked on the development of products for managing corn pathogens.

Thelma joined Dr. Robert O'Neil's Biological Control Laboratory at the Department of Entomology of Purdue University in May of 2005. There she assessed the potential non-target effects of a soybean aphid parasitoid on aphid communities in Indiana prairies. In addition to collecting thousands of aphid colonies on a wide variety of

plant hosts, she supervised the summer laboratory workers responsible for carrying on Dr. O'Neil's work as his health declined. Thelma received her MS in May of 2008. In August of 2008 Thelma accepted a 5 year NSF-IGERT Fellowship at the University of Minnesota where she works on risk assessment with Dr. George Heimpel in the Department of Entomology.

*Cliff Sadof
Purdue University
West Lafayette, IN*



Thelma Heidel and IOBC-NRS president, Les Shipp

DON'T FORGET!

IOBC-NRS sponsors educational opportunities in biological control. If you have any concepts for a biological control course, please consider including it as part of our IOBC-NRS Education Curriculum. Details can be requested from Education Development Committee Chair, Jonathan Lundgren, jonathan.lundgren@ars.usda.gov

Deke Dietrick (1920-2008): A Pioneer in Commercializing Augmentation Biological Control

Everett "Deke" Dietrick, entomologist and pioneer in the field of biological pest control, died at his home in Ventura on December 23. His scientific training in entomology and his boundless interest in insect ecology on farms led him to collaborate in founding Rincon-Vitova Insectaries. Through his leadership many hundreds of farmer clients have transitioned to biological control for managing pests.

Dietrick studied entomology at UC Berkeley, and in 1947 he began work with UC Statewide Department of Biological Control, led by Harry Smith. Twelve years of research at UC Riverside made him a stalwart supporter of biological

control.

Together with Ernest "Stubby" Green, Dietrick founded the commercial insectary Rincon-Vitova Insectaries, Inc. in 1971 (now owned and managed by daughter Jan Dietrick). Deke Dietrick also started the D-Vac Company, which made suction sampling methods for insects a more routine procedure throughout the world.

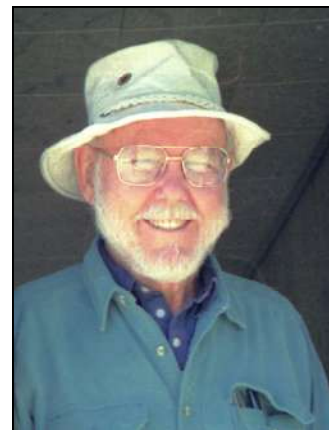
His professional involvement has led him to be honored with a Lifetime Achievement Award from the Association of Applied IPM Ecologists, named an Emeritus member of the Entomological Society of America, and was appointed the first Steward of Sustainable Agriculture by the Ecological Farming Associa-

tion.

For over 40 years Deke mentored scores of individuals who wanted to be part of his work, many of whom followed his intuitive, generous, practical advice to build successful careers and businesses promoting biocontrol and sustainable agriculture.

Expressions of remembrance and support for Deke and his work may be directed in the form of tax-deductible donations to the Dietrick Institute for Applied Insect Ecology, www.dietrick.org, a non-profit organization offering training in ecologically based pest management.

*Jan Dietrick
Rincon-Vitova
Ventura, CA*



Everett "Deke" Dietrick, 1920-2008

Announcements

IOBC-NRS Awards for 2009

Distinguished Scientist Award

The IOBC-NRS is soliciting nominations for the 2009 Award. Nominees must have spent most of their career in the Nearctic Region, and have made significant contributions to biological control., but need not be members of IOBC. Nomination narratives are restricted to one page in length and should contain a thorough but concise summary of the principle contributions of the nominee. The nominator should include the names and current contact information of both nominator and nominee on a separate page. A copy of the nominee's CV (no page limit) should also be included that provides the nominee's professional record (i.e., employment affiliations), list of prior awards, description of biological control related activities (in paragraph form), publications lists, and extramural grant record.

This is a major way for our organization to tell key contributors how much their work is appreciated. The recognition of those scientists who have made out-

standing contributions to the science and implementation of biological control over extended and illustrious careers is an important function of IOBC. Many members have expressed their enjoyment of seeing colleagues honored with our Distinguished Scientist Award. Help us honor our deserving colleagues!

Please send nominations or questions electronically by May 30, 2009 to the IOBC-NRS President, Les Shipp Les.Shipp@AGR.GC.CA

IOBC Graduate Student Awards

The IOBC-NRS is sponsoring two Graduate Student Awards (The Robert O'Neil Award for Outstanding PhD Student in Biological Control, and a Master's-level award), to be bestowed on students whose contributions are likely to shape the future of biological control. The recipients will be recognized at the IOBC-NRS Informal conference held at the ESA Annual Meeting. Winners will receive cash awards (\$300 for PhD, \$200 for Masters), and the PhD winner will also give a research presentation during the IOBC business meeting. See IOBC-NRS website for

information on previous winners.

Eligibility: All students enrolled in a graduate program in Bermuda, Canada, or the U.S., and who are members of the IOBC at the time of the application deadline are eligible. Please indicate that you plan to attend the Annual meeting of the ESA—preference will be given to students planning to attend.

Application Guidelines: Students should send: a letter that details the significance of their research and its relevance to biological control; a CV that includes contact information; and the names of two referees who will provide letters of support. Criteria (and relative ranking) to be assessed are: publications (15 pts), presentations (15 pts), outreach activities (15 pts), teaching (15 pts), grantsmanship (15 pts), current and future contributions to biological control (15 pts), and letters of support (10 pts). Application materials and questions should be sent electronically to Doug Landis landisd@msu.edu. **Application deadline is May 30, 2009.**

First International Entomophagous Insects Conference: Minneapolis, MN, July 28-31, 2009

This conference is a merging of the previous 'Entomophagous Insects Workshop' and 'European Parasitoid Workshop'. The following themes will be emphasized with a focus on entomophagous insects:

- Evolution, Genetics & Systematics
- Behavior and Life Histories
- Ecology & Applications
- Physiology and Chemical Ecology
- Entomophagous Insects in Minnesota: Community Genetics and Invasive Species

For more information, see <http://www.cce.umn.edu/conferences/entomophagous/index.html>

George Heimpel & Paul Ode
Univ. of MN & CO State Univ.

Biocontrol Musings: 4,000 years before Nicholson-Bailey



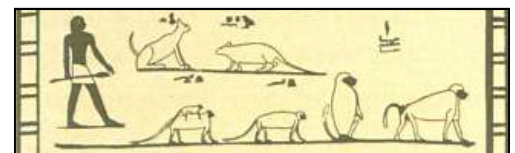
Ahmes was an Egyptian scribe that lived from 1680 - 1620 BC. He copied a mathematically-oriented text known as the "Rhind Mathematical papyrus" that dates from around

2000 BC, adding his own explanations of the more difficult bits. The work contains some brain-teasers that have gotten quite well-known over the years since the Scot-

tish Egyptologist A. H. Rhind bought the scroll in Egypt in 1858 and introduced it to the Western world. One of these goes as follows:

*Seven houses each have seven cats.
Each cat kills seven mice. Each of the mice, if alive, would have eaten seven ears of wheat. Each ear of wheat produces seven measures of flour.*

How many measures of flower were saved by the cats?



Hieroglyph of a cat and rat (upper figures)

Not only does this puzzle show clearly that Egyptians 4,000 years ago were aware of biological control services provided by cats, but it must be the first biological control model ever written!

George Heimpel
University of Minnesota
St. Paul, MN

RESEARCH BRIEFS

Ranking Predators as Biological Control Agents Using the Detectability Half-life of Prey-Associated Markers.

A challenge associated with conservation biological control programs is figuring out which predators within a diverse community are the most important consumers of a target prey. Matt Greenstone and Don Weber of the USDA-ARS Invasive Insect Biocontrol and Behavior Laboratory in Beltsville (IIBBL), Maryland, have come a step closer to making the prey detectability half-life useful for decision-making in conservation biocontrol.

The detectability half life applies conventional PCR to amplify prey-specific DNA sequences within the stomachs of predators. But a central problem with this technique is that each predator species digests a prey's DNA at different rates, which makes ranking consumption rates of different predators challenging. The detectability half life allows researchers to determine how long a prey meal is detectable within 50% of a predator species.

Together with colleagues Zsofia Szen-drei, formerly of IIBBL and now at Rut-



A clutch of CPB eggs being devoured by *Coleomegilla maculata*.

gers University, Mark Payton of Oklahoma State University, and Tom Coudron of ARS's Biological Control of Insects Research Laboratory in Columbia, Missouri, they determined detectability half-lives for Colorado potato beetle (CPB) DNA in the guts of all of its key predators in the Eastern US. These species and their stages display order-of-magnitude variation in half-life for the Cytochrome Oxidase I sequence of a single CPB egg, from 7.0 hours in larval *Coleomegilla maculata* to 84.4

hours in nymphal *Perillus bioculatus*. Consequently, the digestion rates of these different predators need to be accounted for when interpreting their relative frequencies of prey consumption.

Using two years' field data from conventionally-tilled potatoes, they showed that while raw gut content data imply that adult and nymphal *Perillus bioculatus* have the highest per-capita consumption of CPB, half-life-adjusted data show that the adults of *Lebia grandis* and *Podisus maculiventris* actually have the highest per-capita consumption rates of CPB. Results such as these should help managers make the appropriate decisions on which of the numerous predator species in a crop are most worthy of conservation efforts for biological control of specific pests.

Matt Greenstone
USDA-ARS
Beltsville, MD

Your membership is crucial to our society!

If you have not renewed your membership for 2009, please take a moment to do so! Contact Stefan Jaronski (bug@midrivers.com) with questions.

NEWSLETTER WRAP-UP

The world of biology is a quickly changing place, and biological control scientists are continually demonstrating the ability to creatively apply new methods and tools to better understand how natural enemies function within agricultural and natural habitats.

Although challenging to determine, a firm understanding of the dietary breadth of entomophagous arthropods must be determined before habitat management can be appropriately applied to conserving natural enemies in cropland.

New tools (or new applications of old ones) are currently being widely adopted within the biological control scientific community to better define the dietary breadth of natural enemies and establish which are consuming target pests. The research brief above by Greenstone is a great example of advances in one of these technologies.

To highlight the most current approaches to defining natural enemy feeding ecology, James Hagler (IOBC Vice-President) and I have organized the IOBC symposium for the upcoming Ento-

mological Society of America meeting to focus on this topic.

We hope that it will highlight the potential that these tools have for advancing biological control research, and will also underscore that approaches like ELISA, PCR, and biochemical analyses are not as intimidating as they look. Indeed, they can add an entirely new perspective to a research program.

Jonathan Lundgren
IOBC-NRS Newsletter Editor
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International Organization for Biological Control of Noxious Animals and Plants. Nearctic
Regional Section
Organisation Internationale de Lutte Biologique Contre Les Animaux et Les Plantes Nuisibles:
Section de la Region Nearctic



The International Organization for Biological Control—Nearctic Regional Section Newsletter is published 3 times a year in February, June, and October to provide information and further communication among members of the Region (Bermuda, Canada, and the United States).

Send items for the IOBC-NRS Newsletter

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