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IOBC - NRS Newsletter

*International Organization for Biological Control
Nearctic Regional Section*

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Upcoming IOBC Symposium at the ESA Annual Meeting

The annual meeting of the IOBC-NRS will be held at the Entomological Society of America Annual Meeting in Cincinnati, Ohio on Tuesday, October 28, 2003. This will be just a small part of the activities at the IOBC session from 6:30 to 10:00 p.m. in the Room 232 of the Convention Center. The evening is focused on the symposium, this year entitled *Landscape Structure, Non-Crop Habitat*

and Biological Control. The evening will also include presentation of the IOBC-NRS Distinguished Scientist Award and Outstanding Graduate Student Award. The student winner, Jonathan Lundgren, will be the first presenter of the symposium. After the talks, join the speakers and your colleagues for beverages and light snacks at the reception.

IOBC Symposium, Business Meeting and Reception

- 6:30 IOBC-NRS Business Meeting
- 6:50 Presentation of IOBC-NRS Distinguished Scientist Award, **Robert F. Luck**, University of California, Riverside

Landscape Structure, Non-Crop Habitat and Biological Control

- 7:00 Introductory remarks. **Nick Mills**, University of California, Insect Biology, Berkeley, CA
- 7:05 Pollen feeding by the predator *Coleomegilla maculata* and transgenic insecticidal corn. **Jonathan Lundgren**, University of Illinois, IOBC-NRS Student Award winner
- 7:20 The influence of landscape structure and farm management on biological control of aphids in cereals. **Barbara Ekbom**, Swedish University of Agricultural Sciences, Department of Entomology, PO Box 7044, Uppsala, Sweden
- 7:40 Influence of aphids, habitat, and landscape extent on coccinellid populations. **Norman Elliot**, USDA-ARS, PSRL, 1301 N Western Rd., Stillwater, OK
- 8:00 Parasitoid communities and impacts in agricultural landscapes. **Douglas Landis**, Michigan State University, Department of Entomology, 204 Center for Integrative Plant Systems, East Lansing, MI
- 8:20 Herbaceous crop fields, non-crop habitats, and invertebrate weed seed predation. **Fabian Menalled¹** and Douglas Landis², (1) Department of Agronomy, Iowa State University, 2501 Agronomy Hall, Ames, IA, (2) Michigan State University, Department of Entomology, 204 Center for Integrative Plant Systems, East Lansing, MI
- 8:40 Landscape effects: predation of leafrollers in pear orchards in California. **Nick Mills**, University of California, Insect Biology, Wellman Hall, Berkeley CA

9:00 - 10:00 Mixer



FROM the PRESIDENT

Greetings from Brisbane, Australia

You probably know that the process of becoming IOBC-NRS President involves a couple of years as President-Elect. For this reason, I had no idea, when I accepted the nomination as President-Elect, that I could be spending a year of my tenure as President on sabbatical at the University of Queensland. Call it poor planning on my part, or a confirmation of the truly international nature of IOBC; I'm here and you're there (or vice versa). Luckily for me, Rob Wiedenmann has agreed to do step in for me at the Governing Board meeting and meeting of the membership at the ESA meeting in Cincinnati (thanks Rob!)

I'd like to highlight a couple of great things that will happen at the IOBC-NRS Informal Conference. Nick Mills has organized a symposium program (see page 1). Also, this is my opportunity to leak the identity of the honorees for the Dis-

tinguished Scientist and Outstanding Graduate Student awards, so you can spread the word and make sure everyone knows to come at the start of the meeting. Bob Luck will be honored for his many contributions to biological control with the Distinguished Scientist Award. Bob is one of those rare individuals whose research in biological control and ecology are known in multiple communities from growers to theoretical ecologists. I don't want to say too much about our awardees contributions since this will be covered in more detail in the next newsletter, so if you're not yet familiar with Bob's career, come and hear Richard Stouthamer (also at UC Riverside) tell you about it. The Outstanding Student award this year will go to Jon Lundgren, University of Illinois. Jon's PhD work focuses on risk assessment of transgenic plants, and he will give a talk about his research in the symposium.

So what's Entomology like in Brisbane? I've only been here a couple of weeks, but it seems like a very excit-

ing place to be. I'm at the University of Queensland, working in the Department of Entomology and Zoology, in association with a few labs that study symbiont genetics, insect development, and aphelinid parasitoids, respectively. Just a few miles down the road in Indooroopilly, another suburb of Brisbane, is a combined CSIRO (USDA equivalent)/DPI (Queensland Ag.) and USDA/ARS facility. For those considering coming to the International Congress of Entomology in Brisbane next (northern) summer, I've also visited the site in downtown Brisbane and it seems like a spectacular place to have a meeting, just along the river in a park with lots of restaurants and easy access to the University of Queensland. Brisbane is a beautiful, relaxed, and easy city to navigate with spectacular beaches and wildlife to see near by.

Until next time, then. As usual, please let me know if you have comments or concerns for the IOBC/NRS Governing Board. You can still reach me by email at mhunter@ag.arizona.edu

— Molly Hunter

MEETING CALENDAR

ISHS International Symposium on Protected Culture in a Mild-Winter Climate

March 23-27, 2004

Kissimmee, FL

The Protected Agricultural Working Group is organizing this symposium through the International Society of Horticultural Sciences. Attendees will include academicians, scientists, and students with interests in protected cultivation. Some private consultants may be interested as well as corporate representatives.

For more information contact Silvia I. Rondon (srondon@mail.ifas.ufl.edu), Daniel J. Cantliffe (djc@mail.ifas.ufl.edu), or James F. Price (jprice@mail.ifas.ufl.edu), University of Florida, Horticultural Sciences Department, 717 Hull Road, 1143 Fifield Hall, PO Box 110690, Gainesville, FL 3261, (352) 392-9905. Or visit the conference website at <http://conference.ifas.ufl.edu/ishs/>.

NEWSLETTER INFO

Improve This Newsletter by Submitting Articles

Submission of news items from the membership is what makes this newsletter of value to all.

Please consider contributing some interesting (or not so interesting) articles to make this a great newsletter!

Although a deadline is set for the editor's sake, please submit at any time for future newsletters (address is on the back page). Suggested topics include:

- Issues affecting biological control
 - Taxonomy (revisions or studies impacting biocontrol)
 - Reports of Working Groups
 - Announcements
 - New research projects
 - Thesis or dissertation topics
 - Open Forum type letters
 - Biocontrol position announcements
 - New appointments or people moving around
 - Awards or honors received by members
 - Meetings or workshops related to biological control
 - New publications
- Items for the Winter Newsletter are due by 15 January 2004**



ANNOUNCEMENT

Request for Ectoparasites of Vertebrates and For Parasitoids of Filth Flies

Canadian researchers studying *Wolbachia* bacteria associated with arthropods need YOUR help! These bacteria influence the reproductive ecology of their host species. Effects may include parthenogenesis, death of male embryos, feminization of genetic males, and reduced or no offspring from matings between infected and uninfected insects.

Kevin Floate's lab has been studying these bacteria for potential application in biological control programs. To advance two of their projects, they are soliciting from IOBC-NRS members, samples of arthropods that are parasites of vertebrates (e.g., lice, fleas, mites, ticks, oestrid flies) from any host species (birds, mammals, reptiles) and also parasitoids (Ichneumonidae, Braconidae, Pteromalidae) of filth flies (e.g., house fly, stable fly, horn fly, face fly, black dump fly - Diptera: Muscidae).

Ideally, samples would be freshly collected material preserved in 95% EtOH, with 5-10 males and females per species. But they have successfully worked with material up to 3 years old, preserved in 70% EtOH. They will pay shipping costs.

Kevin would be happy to receive both colony or field-collected material from anywhere in the world. He will provide the results of his analyses to the sender.

Some recent research results on *Wolbachia* in parasitoids can be found in *Kyei-Poku, G.K., K.D. Floate, B. Benkel and M.S. Goettel. 2003. Elimination of Wolbachia from Urolepis rufipes (Ashmead) (Hymenoptera: Pteromalidae) with heat and antibiotic treatments: implications for host reproduction. Biocontrol Science and Technology 13:341-354.*

If you can help with this research, or need further information, please contact Kevin directly:

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NEWS

2003 Midwest Institute for Biological Control Shortcourse a Success

The 13th annual Midwest Institute for Biological Control shortcourse, entitled "Risk Analysis in Biological Control", was held June 22-27 at the USDA-ARS European Biological Control Laboratory in Montpellier, France. The ten course participants came from Illinois, Wisconsin, California, Florida, New Mexico, Indiana and Honduras, and included graduate students, a post-doc, a technician, an extension educator, and several faculty. The four US-based instructors

were Bob O'Neil (Purdue Univ), Ernest Delfosse (USDA, Beltsville, MD), Bob Nowierski (USDA, Washington, DC) and Rob Wiedenmann (Illinois Natural History Survey); ten other instructors included scientists from the USDA-ARS and Australian CSIRO labs in Montpellier.

Participants used case histories, materials and field exercises to understand conducting biological control programs overseas, and placing those pro-

grams into a risk-analysis framework. Field trips illustrated weeds in their native settings, to contrast with risks for agents in new locales. Student presentations on risk analyses of selected weed and insect targets were made in collaboration with EBCL scientists. Major funding for the course was made through the generosity of the USDA-ARS. The 2004 Midwest Institute shortcourse will focus on Insect Pathology; contact Dr. Lee Solter (Isolter@uiuc.edu) for details.

Florida A&M Grad Student Wins Award for Biocontrol Research

Mr. Nathan Herrick was awarded the Sustainable Agriculture Research and Education (SARE) Graduate Student Award 2002. SARE is a competitive grants program funded by USDA and EPA to promote research and education regarding sustainable agriculture. The program "enables farmers and ranchers to move profitably toward production systems compatible with the concept of sustainable agriculture."

Nathan is currently a graduating M.S. student at the Florida Agricultural and Mechanical University and employed by the USDA-ARS. Among the 1890's Universities, this award is the first that Florida A&M University has received through the work of a graduate student. The award titled, "Analysis of a Biological Control Strategy and its Potential in a Pest Management Program in Florida Cabbage," was received for

his research involving the mode of action that multiple natural enemy species have in suppressing diamondback moth populations in cabbage. He has since presented his research at the 2002 Entomological Society of America 50th Annual meeting in Ft. Lauderdale, Florida and plans to present current research findings at the 2003 Entomological Society of America 51st Annual meeting in Cincinnati, Ohio.



Easier Measurement of Egg Production in Mass Rearing Systems

Commercial producers of mass reared beneficials need to be able to assess the quality of the insects raised on artificial diets. One measure of quality is the rate of egg production, but determining that rate is a difficult and time-consuming process with very small insects. A new test that determines the health of beneficial insects raised on artificial diets has been developed by USDA-ARS scientists in Gainesville, Fla.

ARS research entomologists found a way to measure egg production with

enzyme-linked immunosorbent assays (ELISAs) that measure yolk proteins in hemolymph or body to predict how many eggs the insects will lay while feeding on artificial or natural diets.

Monoclonal antibodies were used in ELISAs to measure minute quantities of yolk proteins in the spined soldier bug, *Podisus maculiventris* and the minute pirate bug, *Orius insidiosus*. This is the first time an ELISA has been used to predict the reproductive fitness of mass-reared insects.

ARS is negotiating a license for cloned hybrid cells and associated antibodies used in the ELISAs, even though they will not be patented. The licensee should have a commercial test available within one year.

— Adapted from *ARS News & Information, A Fertility Test for Beneficial Insects*, May 23, 2003 by Jim Core; for the complete article see <<http://www.ars.usda.gov/is/pr/2003/030523.htm>>

The Potential of a Native Wasp as a Biocontrol Agent for Filth Flies

A field study was performed in southern Alberta, Canada, to assess the native wasp, *Trichomalopsis sarcophagae* (Gahan), as a potential biocontrol agent for house fly, *Musca domestica* L., and stable fly, *Stomoxys calcitrans* (L.). The wasp was readily reared in large numbers, which allowed for the cumulative release of an estimated 4.63 million wasps into three commercial feedlots during the 2-year study.

Each of several releases predictably and repeatedly enhanced parasitism of sentinel house fly pupae, whereas parasitism remained low in three paired control feedlots where wasps were not released. Releases every 2nd week had a disproportionately greater effect than

releases every 2nd month. In 1998, 1.2 million wasps were released into treatment feedlots resulting in the recovery of 3,952 *T. sarcophagae* from 31,500 sentinel pupae (0.13 wasps/pupa). In 1999, 3.43 million wasps were released into treatment feedlots, with the recovery of 37,763 wasps from 47,720 sentinel pupae (0.79 wasps/pupa). Hence, a 2.8-fold increase in the number of wasps released in 1999 resulted in a 6.1-fold increase in the recovery of wasps.

This result supports industry recommendations of regular, repeated releases of wasps every 2nd or 4th week versus one or infrequent releases throughout the summer. There was no evidence that releases augmented over-

wintering populations of the wasp in subsequent years. These results provide proof-of-concept for the mass-rearing and release of *T. sarcophagae* as an inundative biocontrol agent for the control of pest flies in cattle confinements. Further studies will be required to assess the effect of *T. sarcophagae* releases on natural populations of pest flies.

— Floate, K.D. 2003. *Field trials of Trichomalopsis sarcophagae (Hymenoptera: Pteromalidae) in cattle feedlots: a potential biocontrol agent of filth flies (Diptera: Muscidae)*. *The Canadian Entomologist* 135: 599-608.

Integrated Application of Beneficial Insects for Reduced Insecticide Use on Strawberry in Florida. A Protected Agricultural Working Group Project

Biological control of arthropod pests is often disrupted by the use of insecticides and miticides. The highly intensive cultivated strawberry crop, *Fragaria ananassa* (Duch.), requires high chemical inputs, which may disrupt the population dynamics of the different pests and natural enemies. The two-spotted spider mite, *Tetranychus urticae* Koch (Acari: Tetranychidae), aphids, *Aphis* spp. (Homoptera: Aphididae), and flower thrips, *Frankliniella* spp. (Thysanoptera: Thripidae) are considered serious pests in open and greenhouse strawberry production areas. In Florida, the two spotted spider mite can

be effectively controlled by releasing the predatory mite *Phytoseilus persimilis* (Acari: Phytoseiidae).

The objective of the project is to demonstrate the effectiveness of natural enemies, as part of an Integrated Pest Management program that will reduce the use of pesticides, in the control of strawberry pests on commercial farms (greenhouse and field). The beneficials under study are the lady beetle, *Coleomegilla maculata* (Coleoptera: Coccinellidae), the big-eyed bug, *Geocoris punctipes* (Hemiptera: Lygaeidae), and the minute pirate bug, *Orius insidiosus* (Hemiptera: Antho-

coridae). In 2002, a series of laboratory studies were carried out during the first year of research. During the second year, sampling protocols are being developed for predator and pest population on the field. In the 2003-2004 season, a series of trials will be set up on grower's farms in Plant City, Florida, where approximately 90% of the strawberry crop is grown.

— submitted by Silvia I. Rondon, Daniel J. Cantliffe, and James F. Price, University of Florida, Horticultural Sciences Department, 717 Hull Road, 1143 Fifield Hall, PO Box 110690, Gainesville, FL 3261, (352) 392-9905



Application For Membership
in
**INTERNATIONAL ORGANIZATION FOR BIOLOGICAL CONTROL
OF NOXIOUS ANIMALS AND PLANTS (IOBC)
NEARCTIC REGIONAL SECTION (NRS)**

Membership (check one): NEW ___ RENEWAL ___

Category of Membership:

- Individual (in Canada, U.S. or Bermuda; U.S. \$25) ___ (elsewhere, U.S. \$30) ___
Student (all locations, U.S. \$15) ___

Of these funds \$10 will be forwarded to the Global Body for each member. Members receive both Global and NRS newsletters, and publication privileges in *BioControl*.

- Individual, with subscription to *BioControl* (U.S. \$115) ___
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- Institutional member (U.S. \$300) ___
Includes 2 copies of Global and NRS newsletters, *BioControl*, and \$150 forwarded to Global Body
- Supporting member (U.S. \$1000) ___
Includes 2 copies of Global and NRS newsletters, *BioControl*, \$900 for support of Global organization, and \$100 to support NRS

U.S. \$ ___ enclosed for annual membership for the year 200__ (January to December)

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Brief description of specialty area: _____

Please add on the reverse of this form comments concerning any services or assistance that IOBC/NRS could/should provide that would be helpful to you.

Send application form and payment to:

Stefan Jaronski
Secretary-Treasurer IOBC/NRS
P.O. Box 232
Sidney, MT 59270 USA

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<http://www.entomology.wisc.edu/iobc/nrs.htm>

IOBC website: <www.iobc.agropolis.fr>

**Send items for the
Winter 2004 IOBC-NRS Newsletter
by 15 January to:**

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