

The Entomological Society of Manitoba *Newsletter*



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About the ESM Newsletter

The Entomological Society of Manitoba Newsletter is published three times per year. It is a forum whereby information can be disseminated to Society members. As such, all members are encouraged to contribute often. The Newsletter is interested in opinions, short articles, news of research projects, meeting announcements, workshops, courses and other events, requests for materials or information, news of personnel or visiting scientists, literature reviews or announcements and anything that may be of interest to ESM members.

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Editor's Commentary

The editorial torch has been formally passed and with many thanks to Jason Diehl for his dedication and fine work with previous issues, I begin my own with a little self-indulging introduction to me. As a note of caution, I am not indigenous to Manitoba, but a recent migrant from the deep deep south of Ontario (as such, I find your mosquitoes to be of sci-fi proportions and I will most likely obsess about this in future commentaries). In Ontario my move towards entomology began early as an insect activist and my fondest memory is of the summer mornings I spent liberating bluets from spider webs north of the city. Ecological reasoning aside, I will not be departing from my favourite childhood slogan of "Six legs good! Eight legs bad!" and I here extend apologies to you spider enthusiasts for any biased editing that may come in future ESM newsletters.

I completed my bachelors at the University of Guelph in what many of the undergrads at the time liked to call it, the entomology underground. Of course, on official documents *entomology* amalgamated to *environmental biology* and is now a chemistry, ecology and economics degree peppered with entomology. Although I am familiar with the arguments for, the amalgamation of departments continues to be a sad reality for many Canadian students and staff. In the coming newsletters I hope to coax some lively debate on the issue of amalgamation and other issues of importance to entomologists in an editorial column entitled "Y-Tube" so please stay tuned. But with that, I feel extremely fortunate that I came to this beautiful province that hosts the last standing department of entomology in Canada. I have recently graduated from the University of Manitoba with my Masters and a wealth of Manitoban experiences with both bug people and bugs alike. So many thanks to all for electing me as the ESM Newsletter Editor and I hope that I can help to address the issues that are important to you, the entomologists of Manitoba.

All the best,

Nicole Lauro,
Newsletter Editor



Tales from the Head Bug

Nicole Lauro as new editor of the newsletter has started a new column, “Tales From the Head Bug”. As president, I lauded her effort, until I had to get down to putting pen to paper, or more literally fingers to keyboard.



Paul Fields: Newly elected ESM President

She asked a question that I haven't thought of for a while: “Why and how did you end up working as an entomologist?” I started my life as a scientist, when I was five years old pulling tadpoles and bugs out of a pond in suburban Toronto. In high school, I graduated to pulling tardigrades out of moss. While working on my B.Sc. at McMaster, I realized that there wasn't much demand for experts in tardigrade biology, whereas whole university departments were devoted to insects, and they are the most successful group of animals on the planet.

In my third year at McMaster, I had as my entomology lab supervisor Cathy Salki, fresh from her M.Sc. in entomology at the University of Manitoba. Her enthusiasm for entomology was infectious. For a summer job, she steered

me towards Manitoba to work for Dave Rosenberg as a technician pulling Chironomidae adults from emergence traps along a 100 km trap line in South Indian Lake. The Fresh Water Institute was running an impact study of the damming of South Indian Lake. It was my first job in science and I loved it.

My second job in science was for the Quebec Ministry of the Environment in a water quality lab in Montreal, and I was bored to tears. It was an exchange program to promote understanding between Anglophones in Ontario and Francophones in Quebec. Since the language at work was French, and they didn't expect the students from Ontario to speak much of la langue de Molière, they trained us to filter water samples and slap the filter paper on a petri dish with agar. In the fall, with my B.Sc. in hand, I hitchhiked back to Winnipeg, and found a job at Delta Marsh counting aquatic insects. I came into Winnipeg for a seminar at the Department of Entomology, given by Jeremy McNeil. I eventually ended up in Quebec City completing a Ph.D. at Université Laval with Jeremy on the overwintering of Lepidoptera. After doing a postdoc at the University of Ottawa on plant insect relationships, two job interviews at the Cereal Research Centre, one unsuccessful and one successful, I moved back to Winnipeg to work on stored-product entomology. Although I did none of my schooling in Winnipeg, my professional life as an entomologist seems to have kept bringing me back to Manitoba.

The moral of this tale is watch where your summer job takes you; it could just develop into something more than you thought.

Paul Fields, Research Scientist, AAFC

Label Data Standards for Terrestrial Arthropods

The Biological Survey of Canada (Terrestrial Arthropods) has released a document useful to all actively collecting entomologists on the proper methods of preparing specimen labels. The hard copy is a 20-page booklet filled with recommendations and standards for label data. Limited copies are available from the Biological Survey of Canada (Terrestrial Arthropods), Canadian Museum of Nature, P.O. Box 3443, Station “D”, Ottawa, Ontario, Canada K1P 6P4. The complete document is also available on line at <http://www.biology.ulaberta.ca/esc.hp/bschome.htm>. In the following ESM newsletter, Dr. Roughley will be unveiling some of the new changes to the J.B. Wallis Museum at the U. of Manitoba and providing us with a more detailed look at the bar coding system he has adopted as a unique method of labeling.

Insects on the Move: A Report on the 57th Annual Meeting of the ESM

The 57th Annual meeting of the Entomological Society of Manitoba was held on November 2 and 3, 2001 at the Freshwater Institute in Winnipeg, Manitoba. The theme of the meeting was “Insects on the move” and was well attended, with 61 people registering and 27 presentations.

Dr. Dan Quiring, from the University of New Brunswick, gave the keynote address titled “Insect movement in young forest stands”. Dr. Quiring described factors affecting the movement of the spruce bud moth (*Zeiraphera canadensis*), the yellow-headed spruce sawfly (*Pikonema alaskensis*), and the balsam fir sawfly (*Neodiprion abietis*). The influence of variations within the crowns of young conifers on the movement of larvae of these insects was examined. The keynote address was followed by the submitted papers session. There were 19 submitted papers for the 2001 meetings. Ten of the papers were entered in the student paper competition. There were also 3 poster presentations in this year’s meetings.

On the morning of November 3, a symposium was held on insect movement. Dr. Matthias Schöller, of Biologische Beratung, in Berlin, Germany spoke on “Movement of pests and beneficials: Do we know who is in?”. Examples from the families Chrysomelidae and Braconidae were presented where both the specific identity and the geographical range was not clear due to the occurrence of sibling-species. One of the species used as an example was the cereal leaf beetle (*Oulema melanopus*), an insect that has been expanding it’s range and is now found in North Dakota not too far from the Manitoba border.

Dr. Lloyd Dosedall from the Department of Agricultural, Food and Nutritional Science, at the University of Alberta spoke on “Temporal and geographical movements of cabbage seedpod weevil, *Ceutorhynchus obstrictus* in canola”. Of particular interest was how since 1995 this insect has expanded it’s range in Alberta and into Saskatchewan, but that the conditions present in the

canola growing areas of Manitoba should be ideal for the establishment of this insect pest of canola.

Dr. Marion Harris, from the Department of Entomology at North Dakota State University spoke on “Insect movement during host-finding: contributions of plant stimuli, internal state, and motor programs”. Dr. Harris discussed how random and non-random movement are manifested in two very different systems: 1) Hessian fly females foraging for oviposition sites, and 2) tortricid larvae responding to food that contains Cry 1 Ac, an endotoxin produced by *Bacillus thuringiensis*.

Brain Rex, of the Canadian Food Inspection Agency in Winnipeg (speaking in place of Jon Bell) presented on “Quarantine practices, and monitoring for potential new insect pests in Canada”. Some recent exotics being found in Canada include the Brown Spruce Longhorn Beetle in Halifax, Cereal Leaf Beetle in Creston BC, and the Asian Gypsy Moth in BC. It is believed that it is only a matter of time before the cereal leaf beetle naturally spreads or is moved in hay to the Canadian prairies. More information on the Canadian Food Inspection Agency and their programs can be found at <http://www.inspection.gc.ca>.

The annual banquet was organized by Heather White and Michael Alperyn and took place at the Canad Inns Fort Garry on Friday, November 2nd. Cocktails were from 6:00 p.m. until 7:00 p.m. followed by a buffet meal. An awards ceremony was held after the meal. The following awards were presented: the Student Paper Award to Heather White, the ESM Student Achievement Award to Marla Riekman, the SWAT Team Student Award to Nancy Dewar, and the ESM Graduate Scholarship to Heather White. Ian Wise, president of the Entomological Society of Manitoba, presented a special honoring of Sam Loschiavo for receiving the Order of Canada. An informal mixer was held on the evening of November 3rd at the home of Bob Lamb and Pat MacKay.

**Submitted by: John Gavloski,
Chair, Scientific Program Committee, 2001**



Featured Article: Gavloski's Trails

Editor's Note: On February 1st the ESM hosted a luncheon in Winnipeg with invited guest speaker, John Gavloski. For those of you who were unable to attend this luncheon (or for those who were too busy enjoying the good food!), we will be featuring the stories of John Gavloski in his travels to southeast Asia over the next three issues.

Chapter 1: Honey Production, Collection, and Uses in Nepal

During two recent visits to southeast Asia, I had the opportunity to observe many aspects of agricultural practices and the use and control of insects. Countries that I visited included Nepal, India, Thailand, Cambodia, and Vietnam. In some areas of Southeast Asia, insects are of great value in meeting the basic needs of food and clothing, as well as providing economic value to the economy. One activity I had the pleasure of witnessing was honey production by various methods in Nepal. While touring in Nepal with the staff from an international development agency, I had the opportunity to visit some farms in the hills of Nepal, which is where I was shown local beekeeping techniques. I also visited the International Centre for Integrated Mountain Development (ICIMOD), where beekeeping techniques were demonstrated

The life of an Extension Worker in Nepal. As an extension entomologist, I found the farm visits a bit different in Nepal than I am use to. After a very terrifying ride on a narrow and very bumpy road (most of the way at the edge of a cliff!) we still had several hours of hiking through the mountains to get to the villages we were to visit. A farm visit here is not a 1-day affair, so we had the opportunity to overnight in the region. There is no electricity there, so after eating everyone went to bed at about 8:15 p.m. Some of the people got up at 4:30 to feed and milk the buffaloes. The milk has to get to the milk collection centre by 6:30 a.m. Since I was a guest I was left to sleep-in until 6:30!

Honeybees of Nepal. Nepal is home to at least 5 different species in the genus *Apis*, the honeybees. *Apis mellifera* is present as an introduced species – confined primarily to the lowland Terai and mid-hill regions. The other

Apis species present are all native to Nepal. *Apis cenera* is commonly used in beekeeping. This bee is referred to as the eastern honeybee, the Asian hive bee, the Indian honeybee, or the Himalayan honeybee. *Apis cenera* is well adapted to the Himalayan region. In addition to these 2 species, which are kept in hives, colonies of the giant honeybees *Apis dorsata* and *Apis laboriosa* each produce a single, exposed comb. Their combs are about half the size of an average door. More will be said on them in the section on honey hunting.

Wallhives. While visiting a local farmer, Ram Prasad Sapkata, and his family, we were shown two methods of keeping bees that he was using. One type of hive was called a wallhive. This is a cavity inside the wall of the house, with one or two small opening for the bees toward the outside and a small door inside, which the beekeepers open to harvest honey. The bees nest within the wall. This is the more traditional method of honey collection.

Frame hives. At the same farm, we also saw a more modern frame hive kept on the porch area. The bees are pacified with smoke from a burning wick, and the frames are pulled from the hive. The waxy comb and honey are placed in containers for the honey to drain out. We were given chunks of the honeycomb to have some fresh honey. You would bite off a chunk and spit out some of the wax, eating the honey. Sometimes after taking a bite I would notice bee larvae or pupae in the cells near where I bit. The honey appeared to be collected from different flowers, as some parts of the comb had very dark and strong flavored honey, and other areas of the comb had lighter and milder honey.



Harvesting honey. With traditional hives, the combs are cut from the hive and the honey is often squeezed out of the combs by hand. With frame hives, the frames are taken out and the bees are gently removed. The beekeeper removes the wax cappings with a Khukuri, the traditional Nepali knife, or a special fork. In addition to placing the comb in a container for the honey to drain out, hand operated extractors are available for use in some of these local areas. I got to see one of these later in the day.



Straw Hives. While visiting ICIMOD near Kathmandu, I came across a display of a straw hive. The claims regarding this hive are: that a straw hive is a modern type of beehive - with easy possibilities for inspection, easy honey harvesting, and colony dividing; a straw hive is the most comfortable hive for bees (insulation against cold and heat); straw hive is the cheapest available modern type of a beehive and it is a low cost technology. For more information on straw hives and beekeeping in Nepal, I recommend the following website:



http://web.utahnet.at/huttinge/projekte/nepal/book_off/trainbook.htm#strawhive

Honey hunters. One thing I did not get a chance to see, much to my disappointment, were the honey hunters of Nepal, which I had read much about. But no article describing honey production in Nepal would be complete without at least mention of this. Traditional honey hunting still occurs in South Africa, Southern Arabia, India (the Himalayan regions), and Nepal. The honey hunters in Nepal are mainly from a tribe of Gurungs in central Nepal. The honey hunters in Nepal harvest honey from nests made on cliffs by *Apis laboriosa*, the world's largest honeybee. Harvesters climb down rope ladders, which have been lowered from the top of the cliff, and using bamboo poles maneuver baskets into position beneath the combs. The comb is then cut to fall into the basket. Fires are set at the base of the cliff to pacify the bees to some extent. For more information on the honey hunters of Nepal, see the following sources below.

“Honey Hunters of Nepal” by Eric Valli and Diane Summers. National Geographic, Vol. 174, No.5 (November 1988), pp. 660-671. There are some amazing pictures in here of honey hunters dangling from rope ladders while harvesting the honey. Another account of the honey harvesters can be found at <http://www.beekeeping.com/articles/us/nepal/>. A related article regarding honey hunters in Nepal is: “Golden Harvest of the Raji,” National Geographic June 1998, Volume 193, No. 6. The Raji are a semi-nomadic people in the forests of Nepal that are honey hunters. A preview of this article is on the website: <http://www.panasia.org.sg/nepalnet/socio/raji.htm>. And the film “The Honey Hunters of Nepal” (1989) co-produced by Eric Valli, Diane Summers, Alain Majani, Antenne 2 and National Geographic Explorer; won the International Documentaries Association Prize, Los Angeles 1989, and First Prize in the Monte Carlo, Chicago and La Plagne Film Festivals.

Why is beekeeping a potentially beneficial activity in Nepal? ICIMOD has put a lot of effort into promoting beekeeping in Nepal. Reasons for this are summarized by the following points, which are paraphrased from the 1997 Annual Report of ICIMOD.

- Beekeeping does not require land, only a place by the house for hives.
- Beehives can be made of cheap, locally available materials without capital investment or technical training. Logs, straw, grass, mud, cow-dung, pots, or other materials are appropriate for beekeeping, depending on the resources and traditions of the area.
- Beekeeping is only a part-time activity, and it can be carried out in between other household and agricultural tasks. It requires less labor and fewer inputs than other agricultural tasks.
- Beekeeping does not require a sophisticated understanding of bee biology, nor literacy. Practical training and experience are sufficient to become a good beekeeper.
- The medicinal and nutritional values of honey are among its key benefits in mountain societies where access to medicines and first aid is severely limited.

One of the points they seem to be trying to make is that in areas where little land is available and there is widespread poverty and illiteracy, such as the mountain regions of Nepal, beekeeping is an option to help them expand their production.

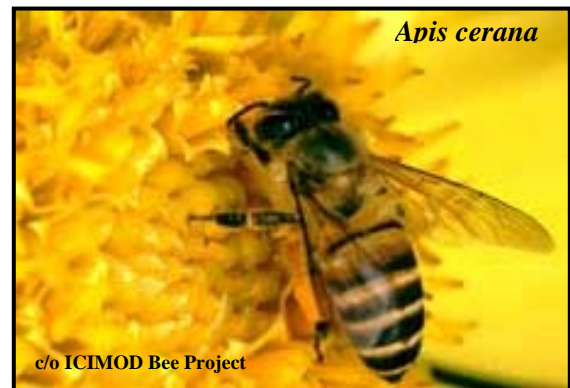
Other Uses of Honey and Bee Products in Nepal. “In the Hindu culture honey is regarded as one of the five 'Amrit', heavenly foods. Together with cow milk, yogurt, ghee and sweet syrup (molasses), honey is offered during worship. Honey also plays a role in the Hindu wedding ceremony in which 'Kasaar', a sweet made out of roasted rice and honey, is offered to the guests. The medicinal qualities of honey are commonly recognized in Nepal. Ayurvedic

medicines are often taken together with honey, and in rural Nepal pure honey is being used as a disinfectant, a cough medicine and a digestive.”¹ My apologies for this last paragraph to those who are reading this while eating and may not be adventurous eaters, in which case you may want to stop reading now. There is a Nepalese recipe called, Bakuti, which is based on the extraction of the water soluble protein and liquid fats from whole larvae and pupae of honey bees while still in the wax comb. Sections of the brood comb are placed in a woven, fabric bag and hand squeezed over an open container that collects the liquid phase. The liquid fraction is then heated and gently stirred which, after about 5 minutes, results in a product that closely resembles, in color and texture, soft scrambled eggs².

¹Quoted from “The story of Nepalese Honey: A taste of Nature.” A leaflet offered by The Beekeeping Shop, Kathmandu, Nepal.

²The Food Insects Newsletter. Vol.3, No.3. 1990. Also available at <http://www.food-insects.com/Vol3%20no3.htm>

Submitted by: John Gavloski, Extension Entomologist, Manitoba Agriculture and Food. jgavloski@gov.mb.ca



Editor's Note: In the coming issues... silk production in Thailand and some traditional techniques of insect management in Southeast Asia.

A New Order!!

Look! It's a Preying Mantis! It's a Walking Stick! No wait, it's Mantophasmatodea; the first insect order to be described since 1914, bringing the total count up to 32 orders (31 if you prefer to lump the Homoptera and Hemiptera orders). Entomologist, Oliver Zompro from the Max-Planck Institute in Ploen, Germany, discovered the first specimen in a 45-million year old piece of Baltic amber. Three additional specimens were found in British museums and a living population was soon discovered very high up in the Brandberg Mountains of Western Namibia. John Irish, who was originally searching for silverfish at the time, found the first live specimen when it dropped out of a bush of grass (this, of course, is one of the principle governing laws of insect collecting trips). The Mantophasmatodea specimens collected in Namibia are up to 4 cm in length, wingless as adults and superficially "look like a cricket too lazy to jump" said Zompro in an interview with Jay Ingram of the discovery channel. One of the most



distinctive features is the large lobe between each pair of tarsal claws. However, the specimens share similar morphological characteristics within the orders Mantodea, Phasmatodea and Orthoptera, but in particular there is a striking resemblance to the rare order, Grylloblattaria or Rock Crawlers. Rock Crawlers were the last order to be described by Walker in 1914 from a specimen collected in Banff, Alberta and there was some speculation that it was a living remnant of the extinct order Protorthoptera. Similar to Rock Crawlers, there is some speculation that Mantophasmatodea is a primitive order that has survived in very isolated pockets of habitat. The scientific value of discovering this order lies in its potential to unveil common links among the insect orders. However this discovery also points directly to "how little we do know [about these isolated habitats] and how much we still need to learn" explains Dr. Rob Roughley from the Department of Entomology, University of Manitoba. Ongoing will be studies on the biology, behaviour and distribution of Mantophasmatodea and of course the ongoing unraveling of systematics and taxonomy; of common ancestry; of the insect world that we adore. For the rest of us, we are left to ponder what new frontiers lie ahead. It seems there are still uncharted territories in entomology. Engage.

Mites, Maggots and Moths

Long time ESM member and practical joker, Cam Jay, unearthed an unusual article while perusing the 1997 May/June issue of Canadian Geographic. The one page insert is an entomological map of Canada that highlights all the place names of a buggy nature. Although creepy crawlies such as spiders, centipedes and ticks were disappointingly lumped into the entomological endeavour, the map acts as an excellent resource for any person intending to relocate within Canada. I noticed, for instance, a pattern of 'bug pressure indicators' across the country, with hard, telling names like 'Roachville' and 'Louse Head' dominating the far east and serene names like 'Ladybird Creek' and 'Walking Stick Mountain' sprinkling the far west. As for Manitoba, I am very curious why not a single place is named after mosquitoes. Could this be a government cover-up to draw more people to the province or simply a population with a superhuman tolerance to pain?

Publish or Perish

Oh the proverbial principle of personal prosperity. Sometimes stimulating, sometimes stymieing your scientific scribblings. The Society sympathizes with your struggle and aspires to acknowledge your activities by annotating your authorships. Reply with a reference record of your recent (w)ritings related to all relevant and revered 'thropods. If the relevance of this is not readily ringing, engage your ESM editor's email, etcetera, etcetera.

New Members Social

The ESM hosted it's annual new members social on Thursday May 9th. The venue took place at the residence of Mr. Mark Lowdon and featured the highly acclaimed "Around the World in 80 Plates" or so potluck dinner and payed tribute to the following new members: Maggie Glasgow, Lori-Ann Kaminski, Brian Rex, Ingrid Stevenson, Ray Godard, Mark Lowdon and Nancy Dewar. After the dinner, entomologists got to sharpen their bug trivia skills by answering some exam style questions on movies depicting our six legged stars. Top scores went to Bob Lamb, Robyn Underwood, David Wade and Terry Galloway. Our gratitude goes out to the Lowdons for their warm hospitality and to Michael Alperyn for organizing the festive event.



Bottom L to R: Nicole Lauro, Tonya Mosseau, Robyn Underwood, Bob Lamb, Pat Mackay. Middle L to R: Mark Lowdon, Lorraine Forbes, Todd Underwood, Diane Saunders, Lori-Ann Kaminski, Noel White, Sandy White. Back L to R: Michael Alperyn, Terry Galloway, The Head Bug, David Wade.

Insects in the Garden

The "Prairie Garden" has started a series of articles on insects to increase the awareness of their readers about the insect species they may encounter. Many gardeners now plant species to attract beautiful butterflies but then ruthlessly kill their progeny (ugly worms). The Prairie Garden, western Canada's only gardening annual, has been produced as a non-profit service by a volunteer committee for over 60 years. I have been a member of this committee for the past 4 years. Each issue, of about 140 pages with black and white illustrations, plus 16 pages of colour prints, reaches over 5000 people. The 2002 issue, just now available, contains an article on oak galls that I wrote. This article stimulated the committee members to ask me to get more articles on insects. For most species, information on the plant hosts, life histories, etc., is easy to find, but clear, attractive, colour photos of the conspicuous life stages are not. We are soliciting articles with pictures on one or more species of common garden insects whether they are beautiful, beneficial, conspicuous or pest. For further information contact **Bill Turnock**: ph. 269 4229 or wturnock@em.agr.ca



photo by Nicole Lauro

Editor's Note: We invite you to also enter your submissions to the esm newsletter's **featured article contest**. The winning article will be featured in the upcoming winter issue of the newsletter and a prize (consisting of your choice of ESM paraphernalia) will also be awarded. Good luck and get writing!



Graduate Position Available

A graduate (MSc) assistantship is available for a project examining the impacts of selenium contamination on invertebrate food webs of foothill streams in Alberta. The successful candidate will have a background in aquatic ecology, entomology or ecotoxicology and possess experience in the sampling and identification of benthic macroinvertebrates. The degree will be completed within the Department of Entomology, University of Manitoba and the student will work in the lab of Dr. Cheryl Podemski at the Department of Fisheries and Ocean's Freshwater Institute (Winnipeg, MB.). Two year of stipend are available at \$15,000 per year with enrollment to start no later than September 1, 2002. For more information about graduate studies at the University of Manitoba, Entomology Department please see: <http://www.umanitoba.ca/afs/entomology/grad.html>. Letters of application will be accepted until June 30, 2002. Interested candidates should submit a C.V. that includes a list of relevant coursework they have completed, an unofficial copy of recent transcripts and the names of three references with contact information. Please direct correspondence to: Dr. Cheryl Podemski, Freshwater Institute, 501 University Crescent, Winnipeg, MB, R3T 2N6 or email Podemskic@dfp-mpo.gc.ca Tel: 204 984-1775.

Meetings of Interest



❑ 2002 Joint Annual General Meeting of the ESM and the ESC “Insects and Humans: Confrontation and Coexistence?”

52nd Annual Meeting

October 5th to 9th, 2002 at the Delta Hotel, Winnipeg, Manitoba.

Contact Don Dixon Tel.: 204-945-3861 email: ddixon@gov.mb.ca

Four additional meetings associated with the ESM/ESC JAM 2002 include:

Canadian Forum for Biocontrol: October 2

Agriculture and Agri-food Canada Working Group on Biocontrol: October 3

Western Committee on Crop Pests and Western Committee on Plant Diseases: October 4

Western Forum Board Meeting, and Entomological Society of Canada Board Meeting: October 5

Visit the official ESM website at <http://home.cc.umanitoba.ca/esm/index.html> for more details!



❑ 2002 Entomological Society of America Annual Meeting and Exhibition “Entomology: An Integrated Science.”

November 17th to 20th, 2002 in Fort Lauderdale, Florida.

Contact: ESA, 9301 Annapolis Rd. Lanham, MD 20706-3115, USA

Fax: 1-301-731-4538 Tel: 1-301-731-4535 email: esa@entsoc.org

Other meetings of interest in lands far far away...

- ❑ **22nd International Congress of Entomology.** August 15th to 21st, 2004 in Brisbane, Australia
Contact: www.ice2004.org
- ❑ **5th International Conference of Hymenopterists.** July 22nd to 26th, 2002 at the Friendship Hotel, Beijing, China. Contact sea@panda.ioz.ac.cn
- ❑ **Annual Meeting of the American arachnological Society.** June 25th to 30th, 2002 in Riverside, California, USA. Contact Rick Vetter at VETTER@CITRUS.UCR.EDU
- ❑ **5th International Congress of Dipterology.** September 29th to October 4th, 2002 in Brisbane, Australia. Contact Sally Brown sally.brown@uq.net.au Tel: 617-3201 2808 Fax: 617-3201-2809.
- ❑ **4th International Conference on Urban Pests.** July 7th to 12th, 2002 in Charleston, South Carolina. Contact at <http://entweb.clemson.edu/urban/ICUP2002.htm>



General Information

If you are interested in becoming a member contact Tannis Mayert at Cereal Research Centre, Agriculture and Agri-Food Canada, 195 Dafoe Rd, Winnipeg, Manitoba, R3T 2M9, Telephone: 204-984-6494, Fax: 204-983-4604, tmayert@em.agr.ca. Annual dues are \$10 for students and \$25 for regular members.

Please notify us of any changes in address by contacting Tannis Mayert at the above address.

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