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**NOTICE: Compiler Needed for Ontario Moth Summaries.** Enquire to Colin Jones,
Email: colin.jones@mnr.gov.on.ca, Work: 705-755-2166, Home: 705-652-5004

**Front Cover Photograph:** Meadow Fritillary (*Boloria bellona*) adult emerging from chrysalis.
Photo taken on October 5, 2007 at Listowel Ontario, by TEA President Glenn M. Richardson.

Issue Date: January 31, 2008
W.J.D. Eberlie Award for Original Research into Ontario Insects

The TEA offers a $300 award in memory of John Eberlie to assist students conducting original field research. The award is intended to help defray travel costs incurred in travelling to field sites used for research. To be eligible to apply for the award, the student must participate in the 2008 TEA Student Symposium with either a presentation or a poster.

The deadline for applications is April 15, 2008.

Annual Student Symposium

The Toronto Entomologists’ Association (TEA) is pleased to announce that the annual Student Symposium will be held Saturday March 29, 2008 at 1PM.

Graduate students, senior undergraduates and post-doctoral fellows are eligible to present either a talk or a poster. Everyone is welcome to attend the symposium. The audience is usually a mix of professional and amateur entomologists.

Students interested in participating should contact Doug Currie, academic coordinator of the symposium (dcurrie@zoo.utoronto.ca) with a provisional title. He will discuss with them the feasibility of a talk or poster. We would like to cover a broad range of topics in the limited time available for talks. This year, the deadline for submissions will be March 7, 2008.

Talks will be restricted to 10 minutes, plus 5 minutes for questions. Posters must be self-standing, without damage to walls and of a reasonable size (3 - 4 feet). Abstracts for the talks and posters (250 words) will be published in Ontario Insects.

Participation in the Symposium with either a talk or a poster will make students eligible to apply for the Eberlie Travel Research Award. This $300 award is intended to assist students with travel expenses associated with their research. Relevance to Ontario entomology and contribution to scientific knowledge are a few of the criteria used in making the award. Further information is available on the TEA website www.ontarioinsects.org.

Request for Help- Black Witch Moth Sightings

Mike Quinn is Invertebrate Biologist for Texas Parks & Wildlife, Austin, Texas, and has compiled records for Black Witch moth sightings from the United States and Canada. For further information, please go to: http://www.texasento.net/witch.htm

Please report BWM records to: mike.quinn@tpwd.state.tx.us Please include date, location (distance to nearest town), province. Also please include sex, condition of moth & prevailing weather conditions. If possible, send a photo, low resolution “much” preferred.

A Black Witch moth landed on the back of a young girl at a barbeque in Waterloo this year (2007). A photograph was taken of this moth. A previous record from Port Hope (1995 - Rod and Joan Parrott) had not been submitted to Mike Quinn.

Keeping In Touch

Dave Punzalan, a participant in three TEA Student Symposia, now has a postdoctoral fellowship in the Department of Biology at the University of Ottawa. A paper from his PhD thesis appeared in the November 07 online Proceedings of the Royal Society of London. Co-authors are Drs Helen Rodd and Locke Rowe from the University of Toronto.

Dave’s PhD research was on thermoregulation and sexual dimorphism in the ambush bug Phymata americana. An additional article on the website LiveScience summarized his findings as: “Hot Bugs Get More Sex”. The complete article is at http://www.livescience.com/animals/071218-ambush-bug.html.

Dave won the W. John D. Eberlie award for Field Research Travel in 2004 (he credits the TEA in his article) and hopes that the TEA continues to support graduate student research.

Peter Hall to Compile Status Report of Butterflies in Canada

Peter Hall, co-author of The Butterflies of Canada, is compiling information and images for a status and trends report on the butterflies of Canada. The book is intended as an overview analysis to complement the number of ranking systems that are now ongoing, to assess the conservation status of butterfly species in Canada, including COSEWIC, NatureServe, The Nature Conservancy, IUCN and others. For further information about this project, please contact Peter Hall, Senior Advisor, Biodiversity Agriculture and Agri-food Canada at halljp@orgers.com.

Emerald Ash Borer Discovered in Toronto

In December 2007, the emerald ash borer, first discovered in Michigan in 2002, was detected in a stand of 30 trees on a condominium property near Hwy. 404 and Sheppard Avenue in Toronto.

MNR is seeking emergency federal approval for use of an insecticide derived from the seed of the neem tree which grows in India. This compound was developed at the Canadian Forest Service laboratory in Sault Ste Marie in partnership with Bio-Forest Technologies, and was tested in London, Ontario, this past summer.

Source: Globe and Mail, Jan. 8/08, Page A10
Ontario Insects

Upcoming Meetings

Everyone is welcome. Bring a Friend!

Saturday February 23, 2008  1:15 PM
THE STATE OF HONEY BEES IN ONTARIO - NO COLONY COLLAPSE DISORDER
Doug McRory

Doug McRory is the Ontario Provincial Apiarist and responsible for the bee inspectors who work to keep Ontario bees free from disease. He covers the entire province, speaking to local beekeeper associations and organizing the educational components for the Ontario Beekeeper Association meetings.

Doug's presentation will bring us up to date on how honey bees are doing here: so far no CCD (Colony Collapse Disorder) but there are always challenges to their health.

Saturday March 29, 2008  1 PM
ANNUAL STUDENT SYMPOSIUM
Room 432 Ramsay Wright Building 25 Harbord St (SW corner of St George and Harbord)

Graduate students from Ontario universities present short talks and display posters relating to their work in entomology. They cover a variety of topics - bees, beetles, spiders, etc - and are amazingly accomplished speakers! There is lots of opportunity to engage with the students and show TEA interest and support for these future entomologists.

Coffee and refreshments are served.

Saturday April 26, 2008  1:15 PM
THE DEMISE OF THE GREEN DRAKE MAYFLY:
WHAT IT TELLS US ABOUT THE HEALTH OF S.ONTARIO TROUT STREAMS
Henry Frania

Henry Frania is an Entomological Research Associate in the Dept. of Natural History at the ROM. He has done taxonomic work on various groups of terrestrial and aquatic insects and is also a consultant involved in environmental monitoring of fresh waters.

The Green Drake Mayfly, Ephemera guttulata Pictet, is an environmentally sensitive burrowing mayfly well known to fly fishermen. Over the past 10 years it has virtually disappeared from large stretches of streams where it was formerly abundant: the upper Credit, Rocky Saugeen and Beaver rivers. These are considered to be pristine cold-water streams so the trend is alarming. Henry has been very involved in studying what is happening there and his presentation will bring us up to date on the latest research.

2008 FIELD TRIPS:
The May 2008 issue of Ontario Insects will provide a full listing of the field trips scheduled for the 2008 season.
If you have ideas for outings - a location, subject matter, or leader - please pass them along to:
Steve LaForest, Field Trips Coordinator
Telephone: 905-720-2784   email: fieldtrips@ontarioinsects.org

All meetings (except March - see above) are held at:

Northrop Frye Hall Room 106
Victoria University (at the University of Toronto)
73 Queens Park Crescent Toronto, ON
(Museum subway stop; opposite the Museum, on the east side).

See the next page for map and parking directions.
For more information, call Carol Sellers at (416) 421-7398
Also check www.ontarioinsects.org

January 2008
To reach Northrop Frye Hall by subway or bus:

Get off at the Museum stop on the University-Spadina subway line or take the Avenue Bus #5 south from the Eglinton Subway Station. Go to the east side of Avenue Road and walk south. Northrop Frye Hall is on the left just at the bend.

To reach Northrop Frye Hall by highway:

QEWh: If you are driving in on the Queen Elizabeth Way (QEW), follow the Gardiner Expressway to York Street. Go north on University Avenue (University Avenue changes into Queens Park Crescent above College St, and then into Avenue Road above Bloor St.). Northrop Frye Hall is just south of Bloor Street.

Highway 401: From Highway 401, take Avenue Road south to Bloor Street OR take the Don Valley Parkway south to the Bloor Street Ramp and proceed west along Bloor to Avenue Road.

Parking

There is some on-street parking in the area (check the signs carefully!) and there are several paid parking lots within walking distance of Northrop Frye Hall:

- Bloor Street and Bedford Road, 1 Block west of Avenue Road.
- On Cumberland Street, 1 block north of Bloor, east off Avenue Road.
- Behind the Colonnade at 131 Bloor St. West.
- One block north of Bloor Street West on Avenue Road.
- Parking on a Saturday is usually a flat rate of $5 or more depending on the lot.
New Monarch Butterfly Blog

Monarch Watch is planning some big changes for 2008. To kick things off, they’re launching a new blog which will allow Monarch Watch to distribute up-to-date information in an efficient, flexible, and timely manner. Here you’ll find all of the information previously reserved for their “monthly” email updates plus a whole lot more! Go to: http://www.Monarchwatch.org/blog/

As always, they welcome your comments and suggestions along the way; if you’d like to provide feedback please do so via their online community forums (there’s a “suggestions and comments” forum set up for just this type of communication).

Monarch Butterflies Abundant During Autumn 2007 Migration

Observers began to report what appeared to be migratory flight of Monarch butterflies in early August 2007. Reports of small overnight roosts of migrating Monarchs surfaced in the middle of the month and on August 19th, Rayfield Pye reported that between 50 and 100 Monarchs PER MINUTE were migrating westward along the north shore of Lake Ontario at Second Marsh, Oshawa. By August 20th, Ontario newspapers published photographs and reports of large clusters of Monarchs. The Kitchener Record reported large numbers on August 21st in the Kitchener/Elora area and the Cobourg Daily Star published photographs on August 22nd of clusters in the Cobourg and Port Hope area. Various observers, including Craig and Bev McLauchlan observed about 10,000 – 12,000 roosting Monarchs at Thickson’s Woods in the early morning of August 25th (this writer stopped by Thickson’s Woods at dusk and using a flashlight, could see various clusters on trees in a clearing in the middle of the forest). Various bird banding stations and migratory observatories on the north shores of Lakes Ontario and Erie, including Hawk Cliff at Port Stanley (Sept. 11/08) and Holiday Beach Migration Observatory near Windsor similarly reported 100’s and 1000’s of Monarchs roosting in adjacent trees. Bird watcher Dr. Fred Helleiner at Presqu’ile Provincial Park reported that birdwatchers were being distracted by migrating Monarch butterflies and large numbers of dragonflies!

Using many nature-related internet-based discussion groups – some of which had little to do with butterfly discussions and observations - but which none-the-less generously posted notes requesting Monarch butterfly observations - it was noted that Monarch butterflies were abundantly found across Canada this year and in locations far from what might be ordinarily considered their normal range. Observers often submitted digital photographs to confirm their observations. Sightings came in from as far north as Edmonton, Alberta and Prince Albert, Saskatchewan. From Aug. 24 – 26, Ken Burrell observed about 5 Monarchs in Moosonee (Ontario) area. Monarchs were particularly abundant all along the Okanagan River Valley in British Columbia. In the Calgary area, more Monarchs were seen than in previous year. In late May Monarchs were seen in Thunder Bay, and later Monarchs were reported to be unusually abundant in southern Manitoba and Saskatchewan. In Ontario, various 4th of July butterfly counts usually noted record numbers of Monarchs seen. Monarchs were reported way up the St. Lawrence River west of Quebec City, where one travels to see whales, and a few were reported on various parts of the Gaspe peninsula, even near the famous Perce Rock. Reports came in from New Brunswick and Jim Wilson of Nova Scotia tagged Monarch Monarchs there this fall.

As a result, there were many late reports of Monarchs, including late September larva in Saskatoon, Saskatchewan. Naturalist Carole Payne of Port Hope reports seeing a Monarch butterfly in the lee of the west headland at Cobourg Harbour, Cobourg, Ontario on November 24th. The record late record for a Monarch butterfly at Point Pelee National Park is December 8th (although one was seen one year during a Christmas bird count!).

Canadian and North American Monarch Butterfly Conservation Plans

Work continues on developing the Canadian Monarch Butterfly Conservation Plan. Recently, the first public draft copy was distributed to over 125 individuals and groups for peer and jurisdictional review and comment. Committee members include Don Davis of the T.E.A. and Jean Lauriault of the Canadian Museum of Nature. Chair Robert Decarie of Environment Canada is taking an educational leave, and will be replaced by another CWS representative in the new year.

From December 5 – 7/08, meetings were held in Morelia, Mexico between delegates from Canada, the United States
and Mexico to develop a North American Monarch Butterfly Conservation Plan under the guidance of a facilitator and in response to the resolution adopted in Morelia, Mexico this past June 2007 by the Council of the CEC (the Council consists of the three environmental ministers of Canada, U.S.A. and Mexico). This resolution provided directions and funding to develop the NAMBCP (http://www.cec.org/files/PDF/COUNCIL/Res-07-09-Monarch_en.pdf). Representing Canada were TEA member Don Davis, Jean Lauriault, Sandy Baumgartner of the Canadian Wildlife Federation and Tara Crew of Bird Studies Canada.

A draft of this report will be made available for peer review in early spring 2008. Don Davis and Jean Lauriault have volunteered to serve as Canadian editors in the production of this report.

On December 8th, delegates from this conference took a three-hour drive to the Macheros Monarch Sanctuary near the mountain Cerra Pelon and rode horses for 1.25 hours up very steep rocky mountain trails to see the overwintering Monarchs there.

Anyone wishing further information on these two conservation plans or interested in reviewing them is welcomed to contact Don Davis: donald_davis@yahoo.com.

Some Reflections on Visiting Mexico and the Overwintering Monarch Butterflies

This Letter to the Editor was written by TEA member Davis in response to an article entitled “In search of Monarchs; Mexican mountains offer spectacular hikes to see butterflies during winter” by Jessica Bernstein-Wax and distributed by Associated Press in December 2007:

I have just returned from riding a horse up the mountain Cerro Pelon (3000 m) near Mancheros, Mexico, to see the overwintering Monarch butterflies. While the huge clusters have been described as the “Eighth Wonder of the World” and are particularly spectacular to see, those planning a trip to Mexico should be aware that this is a particularly violent time in Mexico. During my recent trip, 600 Federal officers arrested 52 illegal loggers and sawmill operators near Zitacuaro in the protected buffer zone of the Monarch Biosphere, and seized about 6000 tons of illegally cut wood. Similar ruthless mafia-type gangs are also engaged in drug dealing and other illegal activities in and near the Monarch Biosphere. Visiting birdwatchers and journalists have been assaulted and had their valuables stolen.

For these reasons, I recommend tours offered by Maraleen Manos-Jones at www.spiritofbutterflies.com. Tour leader Jose Luis Alvarez is fluent in English, Spanish and French, is very accommodating and provides his guests with great views of the Monarchs. I have always felt very safe with Jose. In 2002, these trips won a conservation award from Smithsonian Magazine. Mexico City, the world’s largest city, can present risks, so choosing Continental or Mexicana Airlines flights into the colonial city of Morelia, the capital of Michoacan, may be preferred.

As Jessica points out, the trip to the sanctuaries is quite strenuous, and I usually engage in a regimen of physical exercise many weeks before my trip. Driving and climbing up to 3000 metres can result in nausea from car sickness or the higher elevation. While walking up the mountain, you will sweat, huff and puff and stop to rest frequently in the thin air. Riding a horse up the narrow, steep, rocky mountain trails is also strenuous, and for this trip, it took us 1 ¼ hours to reach the Monarchs.

Before the trip, I take Ducoral vaccine to help prevent “Montezuma’s Revenge”, as well as Hepatitis A vaccine. I bring a supply of Gravol, Immodium, Pepto Bismal chewable tablets and a broad-spectrum antibiotic (just in case). It is possible to contract parasites and fungi.

Experienced travelers will know about the importance of handwashing, and to drink only bottled water or beverages. Bottled water should also be used for brushing your teeth and avoid rinsing your mouth out in the shower, particularly in rural areas. Generally I avoid salads except in higher-end restaurants and hotels. Traveling or driving at night carries risks. Watch where you are walking! Sidewalks and trails are often very rough and uneven.

As Jessica noted, there are many other attractions to see in and near the Monarch Biosphere, including archaeological sites (i.e. Tarascan pyramids) and the huge lava field near the Paricutin volcano (you can hike to see the buried town’s half exposed
Ontario Insects

Lincoln Brower Honoured For 50 Years of Monarch Butterfly Research and Conservation

Virginia based Professor Lincoln Brower, who has spent over 50 years studying the Monarch, was honoured in Great Britain and Italy on the occasion of his 75th birthday. Dr. Brower, who presented lectures in Ontario in the fall of 2004, was jointly honoured in England by the Marsh Christian Trust and the Royal Entomological Society. Dr. Brower was presented with the Marsh Award for Insect Conservation for his lifetime contribution to the field of entomology. Accepting his £1,000 award, Professor Brower said: “I am extremely pleased and enormously grateful for this wonderful honour. England has always held a special place in my heart, and to be selected for this award is indeed gratifying.” Lincoln Brower is Distinguished Service Professor of Zoology, Emeritus at the University of Florida. In 1997, he was appointed Research Professor of Biology at Sweet Briar College, Virginia.

At the 5th International Conference on the Biology of the Butterfly, held July 2 – 7 in Rome, Italy, a symposium was held in Lincoln’s honour. About 200 scientists from around the world were in attendance. Dr. Karen Oberhauser, along with Michael Boppré of the Albert-Ludwigs-Universität Freiburg in Freiburg, Germany, and Dick Vane-Wright of the Natural History Museum in London, proposed the idea to honor Brower’s more than 50 years of research on milkweed butterflies and his 75th birthday.

In making their case, Oberhauser, Boppré and Vane-Wright wrote, “He has taken up the cause of conservation with much passion, as he tries to lobby both the U.S. and Mexican governments and other organizations to intercede on behalf of the insects. In so doing, he has become instrumental in reforestation and organic farming projects in Mexico, and a voice of caution regarding the impacts of agribusiness on all of our lives.”
T.E.A. Lepidoptera and Odonata Summaries

T.E.A. invites all members and non-members to contribute sightings to the annual insect summaries. There are two summaries: one for Lepidoptera (butterflies and moths); and one for Odonata (dragonflies and damselflies). The sightings are published in two separate publications. Both summaries also feature papers, articles and notes on a variety of topics covering the respective insect orders. The Lepidoptera summary is sent to members as a benefit of membership. The Odonata summary (entitled Ontario Odonata) is not included with membership but is offered to members at a discounted price. Either of the yearly summaries may be purchased by non-members. We recommend that you contact the compiler directly for more details.

Lepidoptera summary

What information to send:
Make note of the name of the butterfly or moth, the date seen, and where it was seen. Be fairly specific if possible indicating at least a city/town/conservation area and the county. Including geographic coordinates in the form of a UTM or Latitude and Longitude (read from a topographic map or derived from a handheld GPS unit) would also be beneficial but is not mandatory. Please also note how many individuals you see and, if possible, whether they are male or female. Distinguishing between sight and specimen based records is also tremendously useful. Any particular behaviour such as nectaring, egg-laying etc. is also of interest. Please send in the order that the species are listed in the summary.

When and where to send:
Submissions should be sent by January 31, 2008. Electronic submissions are encouraged, preferably in a spreadsheet or database application such as Microsoft Excel or Corel Quattro Pro. Records submitted in a wordprocessing application (e.g. Microsoft Word or Corel Wordperfect) are also fine as are handwritten records. Records should be sent to the following compilers:

Butterflies: Colin D. Jones (Box 182, Lakefield, ON K0L 2H0. work: 705-755-2166, home: 705-652-5004, colin.jones@mnr.gov.on.ca).
Moths: Compiler needed. See details on inside front cover

Odonata summary

What information to send:
Species name, county, precise location (e.g. 1 km W of Mine Centre on south shore of Little Turtle Lake), number of individuals seen, an accurate UTM and/or Lat./Long. reference either using a GPS or 1 inch maps, and observation date. Please contact one of the compilers to receive an electronic form (or a hard copy) containing all of the necessary fields. It is strongly encouraged that (if possible) you compile your data using a database file such as dBase, Access, or Excel.

When and where to send:
All submissions should be received by December 31, 2006. Late submissions will be included at the discretion of the compilers.

Northern Ontario: The regional compiler for northern Ontario (all parts of Ontario north of Algonquin Park and Nipissing District, and including Haliburton, Muskoka, Renfrew and Peterborough) is Colin D. Jones (Box 182, Lakefield, ON K0L 2H0. work: 705-755-2166, home: 705-652-5004, colin.jones@mnr.gov.on.ca).
Central Southern and Eastern Ontario (Provincial Compiler): The regional compiler for this part of the province (most of the region east of a line from the south end of Georgian Bay east to the Ottawa and St. Lawrence valleys (with the exceptions of Peterborough, Haliburton, and Muskoka) is Paul Catling (2326 Scrivens Drive, RR 3 Metcalfe, Ontario K0A 2P0. 613-821-2064, brownell@achilles.net). Paul is also the Provincial Compiler.
Southwestern Ontario: The regional compiler for this region (the south and southwest of a line connecting the south end of Georgian Bay to Hamilton and Niagara on the Lake) is Paul Pratt (7100 Matchette Rd., LaSalle, ON N9C 2S3. 519 966 5852, prairie@netcore.ca).

For more details, see http://nhic.mnr.gov.on.ca/MNR/nhic/odonates/atlas.html
A Brief History of the Annual Summaries of Ontario Lepidoptera

By Quimby Hess

Father J.C.E. Riotte, M.A. S.J., was a research associate in the R.O.M.’s entomology department. In 1969 he brought together a group of Toronto Lepidopterists and the TEA was formed. He was the first president. Also, he started the publication of the first TEA Annual Summary of Ontario Lepidoptera, using data submitted by Lepidopterists.

The TEA’s annual summaries have been published by the TEA every year since to 2005, except for 1971. A brief History follows below:

1969 – P.M Catling, C.H. Walker (11 pages)
1971 (NO SUMMARY)
1975 – Q.F. Hess, A.J. Hanks (#6-76) (21 pages)
1982 – Q.F. Hess, A.J. Hanks (#14-83) (73 pages)
1992 – A.J. Hanks (#25-93) (102 pages)
1993 – A.J. Hanks (#26-94) (100 pages)
1994 – A.J. Hanks (#27-95) (91 pages - First Colour Plates)
1995 – A.J. Hanks (#28-96) (95 pages)
1996 – A.J. Hanks (#29-97) (96 pages)
1997 – A.J. Hanks (#30-98) (89 pages)
1998 – A.J. Hanks (#31-99) (81 pages)

Notes:
1) Father J.C.E. Riotte is the author of Annotated List of Ontario Lepidoptera published by the R.O.M.
2) Refer to Ontario Insects notice of May 1999 next page.
Notice to Contributors to the TEA Annual Summaries on Ontario Lepidoptera
By Quimby Hess

Contributors, members and researchers are advised that eleven hardcover volumes containing the Annual Summaries for the years 1971 to 1995, inclusive, are now with the Centre for Biodiversity and Conservation Biology, at the Royal Ontario Museum, 100 Queen’s Park, Toronto, phone (416) 5764/8059. Each volume has an index for the contents. Each volume has been corrected in accordance with the Corrections Section of Succeeding Summaries and other data. The volumes are illustrated with the original colour/black and white photographs as submitted by the contributors. For example, the volume covering the years 1980 to 1988 has 85 colour plates in appropriate places.

As members of the TEA know, the Annual Summaries for Ontario Lepidoptera include records and reports on flight periods, abundance, occurrence, habitats used, life history, foodplants, nectar sources, weather, unusual observations, etc.

Original Ontario Insects Notice that appeared in May 1999

Overwintering Monarch Clusters on One Tree on the Mountain Cerro Pelon
Photo by Don Davis (full story on pages 17-18)
Ontario Insects

Carolina Locust Caught by Burdock

By W.D. McIlveen
and Rebecca Gaunt

In the process of performing a site assessment on the banks of Bronte Creek near Zimmerman in northern Burlington on August 23, 2007, an interesting situation was observed. It was apparent that a Carolina Locust (*Dissosteira carolina* (L.)) had been trapped by the hooks on the flower head of a Great Burdock (*Arctium lappa* L.) (Fig. 1). The locust appeared to have been dead for some time but was more or less still intact. About eleven hooks of the flower head had caught on the extended right hind wing. The hooks had also caught on the right (outer) forewing but the exact number of hooks involved was not determined.

It appeared that the locust had simply flown too close to the burdock plant and its wing had become ensnared in the hooks present on the bracts of the flower. The orientation of the insect was such that its legs were left dangling and therefore it had almost no means to struggle free. The photograph (Fig. 1) shows a few holes but no tearing or conspicuous punctures of the wing in the vicinity of the hooks. It cannot be known with certainty if the holes observed were caused by the struggles of the trapped insect or were created in an unrelated incident. The tissue at the leading edge of the wings is toughened by the presence of the longitudinal veins (costa) and is therefore somewhat resistant to tearing.

No literature references could be found of a similar entrapment of insects on burdock plants. By contrast, information about birds trapped in burdocks is well known. The threat posed to small birds has been known now for nearly a century [7]. We were able to locate references to thirteen specific species (Table 1) plus an unidentified warbler [1, 3, 4, 5, 6]. Generally these are all small birds although there are a few that are in a just slightly larger class. Golden-crowned and Ruby-crowned Kinglets that are among our smallest species appear to be most at risk because they lack the strength and body mass to struggle free once caught.

Table 1. Species of Birds Reported to have been Trapped by Burdocks

<table>
<thead>
<tr>
<th>Species</th>
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</thead>
<tbody>
<tr>
<td>American Goldfinch</td>
</tr>
<tr>
<td>Barn Swallow</td>
</tr>
<tr>
<td>Black-capped Chickadee</td>
</tr>
<tr>
<td>Blue-gray Gnatcatcher</td>
</tr>
<tr>
<td>Blue-headed Vireo</td>
</tr>
<tr>
<td>Common Yellowthroat</td>
</tr>
<tr>
<td>Golden-crowned Kinglet</td>
</tr>
<tr>
<td>Magnolia Warbler</td>
</tr>
<tr>
<td>Pine Siskin</td>
</tr>
<tr>
<td>Red-breasted Nuthatch</td>
</tr>
<tr>
<td>Ruby-crowned Kinglet</td>
</tr>
<tr>
<td>Ruby-throated Hummingbird</td>
</tr>
<tr>
<td>Yellow-rumped Warbler</td>
</tr>
<tr>
<td>Unidentified warbler</td>
</tr>
</tbody>
</table>

In addition to the birds, bats have been known to become entangled in burdock [5]. Chrisholm [2] found a bat entangled in Teasel (*Dipsacus fullonum* L.) under similar circumstances. Iron [4] has suggested that some birds might be attracted to burdocks because they sustain a population of insects in their flowers and seed heads. That might well be the case for some species of birds but other bird species may simply have had the misfortune of flying too close to the hooks. If the birds, or in the present case the locust, are unable to use their feet and legs in the struggle, the probability of escaping is much diminished. As well, the moderately large size of the locust must also have played a role in its capture (e.g. the wing was long enough to catch on several hooks at the same time).

We would be interested in learning if other people have witnessed capture of insects in a similar manner by hooks of burdock or any other plant species that might have hooks or spines.

References


Figure 1. Carolina Locust trapped in Great Burdock seed head, Zimmerman, Ontario, August 23, 2007
Life Cycle of the Meadow Fritillary (*Boloria bellona*)

Photos and text by Glenn Richardson

**Field Notes:**

Eggs (*see inside back cover*) are laid secretively in the debris, near but not on violets. They hatched in 7 days.

First and second stage larvae ([Figure 1, Figure 2](#)) hid during the day at the base of a violet leaf, feeding mainly during the night. However, the last stage larvae ([Figure 3](#)) also fed during the day. The full grown larvae was surprisingly large, reaching 1 1/2 inches. Larvae matured in 20 days. The larvae did not wander any distance from the violets to pupate ([Figure 4](#)).

Adults ([Figure 5](#)) emerged in about 9 days. Note that the same individual pictured here is also seen emerging in the front cover photo. The adults fly (Listowel, ON) in three broods: May 15-30, June 20-July 5, August 15-30. Rarely, a few are seen October 1-15, if the season is warm enough.
Donating Insect Specimens and Collections to the Royal Ontario Museum

by Chris Darling

The Royal Ontario Museum is internationally recognized as a world class institution housing both cultural and natural history collections. The ROM’s entomology collection currently contains more than one million specimens and includes many Ontario specimens of historical importance. Specimens collected by William Brodie document the insect fauna in and around Toronto in the early 1900’s and our dragonflies and damselflies formed the basis for E. M. Walker’s three volume treatise, “The Odonata and Canada and Alaska”. Our Lepidoptera collection contributed to the “Annotated list of Ontario Lepidoptera” (Riotte, 1992) and the TEA’s “Ontario Butterfly Atlas”.

Donations from amateur and professional entomologists have been welcomed ever since the inception of the ROM insect collection. In recent years we have accepted important contributions from the following TEA members: Dr. Gordon Edmund’s Lepidoptera collection (donated in 2002), Dr. John Eberle’s Lepidoptera collection (donated in 2000), Mr. William Edmund’s collection of Lepidoptera, Diptera, Hymenoptera, Coleoptera, Orthoptera and Odonata (donated in 1999), and Mr. Quimby Hess’ Lepidoptera collection (donated in 1997/98 and 2000). Such collections are incorporated into our main research collection where they are made available for research, study and for possible use in galleries and in public programmes. Our collections are actively studied not only by our own staff but by experts from around the world. We are making these collections available to a wider audience via the Global Biodiversity Information Facility website (see www.gbif.org). One recently completed project (with identification assistance provided by members of the Toronto Entomologists’ Association) was databasing of our Canadian butterfly specimens for the Butterflies of Canada project (Layberry, Hall and Lafontaine, 1998) — these records are now freely available via the Global Biodiversity Information Facility (GBIF) website.

Individuals who are interested in exploring the possibility of donating their entomological collection (or parts thereof) to the ROM may contact any of the following entomology staff:

Dr. Chris Darling - Senior Curator cdarling@rom.on.ca
Dr. Douglas Currie - Senior Curator dcurrie@zoo.utoronto.ca
Mr. Brad Hubley - Technician bradh@rom.on.ca
Ms. Antonia Guidotti - Technician antoniag@rom.on.ca

Donation of specimens to the ROM requires the donor or their designate to transfer title to the ROM. If a tax receipt for the donation is requested, a fair market value will be determined using the appropriate Canada Revenue Agency guidelines. Once title of the collection has been transferred to the ROM, specimens will be integrated into our research collection - donated collections do not usually remain as stand-alone collections. Entomological books and libraries can also be donated to the ROM if they complement our collections.

Nesting of Megachile sculpturalis
Smith in Toronto, Ontario

(Hymenoptera: Megachilidae)

Tatiana Romankova
Alexander Romankov

Paraphrasing the Charles Darwin’s maxim, I can say “It is hard to understand, how is it possible that not every gentleman is a fanatic of bee behavior studies’. Lots of unforgettable hours may give to us the observation of nesting solitary bees and wasps. In Ontario there is chance to carry out such studies from April to September, in wilderness or in city. The bees build their nests in ground, in dead wood, in stems pithy or empty inside, or freely attach their made of mineral particles or plant resin constructions to different objects (stones, walls etc.). In residential areas bees successfully assimilated houses and buildings using every hall and crack. To find nesting insects in nature takes definite time and needs some skills. Much easier to obtain the chance to watch nesting bees is to provide them with hand-made space for nesting, traditionally called “trap nests”.

The most popular are wooden trap nests made of thick slabs of wood in which holes are drilled along the wood fibers (Fig. 1).

Figure 1

Many species of solitary wasps and bees usually occupy this kind of human-made places for nesting aculeates. In nature these species search for preexisting halls - insect larval burrows in dead wood, cavities in stone or wood, or they choose for nesting just empty spaces under different objects. The main condition for the successful nesting is protection against water, - the cavity should not be opened to water flow under rain and the substrate should not absorb water. In the same piece of wood the females will not choose those holes, which are located in water absorbing layers, but prefer the burrow with hard or rich with resin walls. The wider diameter range of the halls is prepared, the more variable population of the inhabitants will occupy the trap nests.
Usually, none of solitary aculeates show aggressiveness to side observers; although, they may be in different degrees defensive to their nesting neighbors. Therefore, watching these extremely interesting insects at their work is always safe and provides you with plenty of positive emotions. The easiest way to obtain the opportunity for observation is to prepare a proper wooden trap nest and pose it in the back yard, under roof slope, or just on fence or pole and cover it with a peace of plywood or plastics. The hall entrances should be exposed to moderate sun light.

In Ontario occur more than 300 species of solitary bees. Among them more than 40 species of nest building bees from 11 genera are potential trap-nesters. Every year of using trap nests brings us new interesting facts about local bees.

In the middle of August, 2006, in Etobicoke, Toronto, about a kilometer from the Humber River a few females of *M. sculpturalis* have been observed nesting in our trap nests. It was a really exciting fact, since only in 1994 this amazing, giant, solitary bee – Megachile sculpturalis Smith was recorded first time on the American continent, NC, (Mangum, Brooks, 1997). Presently, this species is widely spread all over the Eastern United States. In 2002 the first specimens of this bee were collected in Ontario (Paiero, Buck, 2004).

![Figure 2.](image)

This bee is indigenous for China, Korea and Japan, but not found on the territory of the Russian Far East. (Radoszkovski, 1890 (*Chalicodoma koreensis*); Yasumatsu, 1938; Tsuneki, 1970; Romankova, 1995).

*M. sculpturalis* has elongated, cylindrical body 14-24 mm long, black integument with black pubescence on head and abdomen, and orange on thorax, brown wings (*Fig. 2*). Females, in average, are bigger than males. The nests are mostly built of plant resin with insignificant admixture of wood and mineral ingredients, located in preexisting burrows in dead wood. *M. sculpturalis* demonstrate definite polytrophy.

Our trap nests were made of thick slabs of pine wood, in which holes from 1/8” to 5/8” diameter and 4” long were drilled along the wood fibers.

Located at 7 m above the ground, with nest entrances opened to s-w., the nests stayed in shadow until 12 p.m.

In our observation three females of *M. sculpturalis* (*M.s.*) continued nesting in the trap nests for two weeks. The fourth female appeared a few times, but did not start nesting here. They all showed very definite, bright personality:

#1 female - old “veteran”, with rapped wings and lost pubescence on her back (the more nests are built, the less hairs are left on the bee females). She continued working, bringing pollen for provision and resin for nest cells. One trip for the resin from the red pine at our balcony usually took 1 min. The pollen in the females’ scopas (a hair brush on the ventral surface of abdomen) sometimes was white, sometimes- yellow. At the end of August-beginning of September, it is difficult to find in city source for pollen other than decorative flowers from lawns, back yards or balconies. Once, the *M. s.* was noted collecting pollen on Hosta sp. right at our building. At the time when the observation started, 8 burrows were already sealed near the nest in which the female was currently working. These closed nests were permanently monitored by the working female. Almost every time, after next work in the nest, the female examined the plugged earlier nests. Often, coming with a portion of the nest material, resin or clay, or with pollen on her abdominal brush, she previously visited the allied empty burrows and revised the old nest plugs. Periodically, she brought a portion of resin and worked on one or other of the old nest plug. After the last nest was plugged, the female started bringing grey soil (clay?) and spread it on the resin surface of the all plugged earlier nests. Sometimes, she brought resin, thickened the plug, and then covered it with soil.

The “veteran” was very aggressive to a neighboring *M. s.* female. This aggressiveness was not unreasonable.

#2 female - called “girl”, smaller, brightly colored, with healthy wings, young female chose for nesting a burrow distanced 5 cm from the currently built #1 nest. Sometimes, she was going away for the resin or pollen, but… most of the time she came out of her nest and walked straight to the one of the “veteran’s” closed nests. She swiftly scratched off a portion of resin from the plug surface and ran back to the own nest. Female #1 chased #2 every time she noticed her. The “veteran” clutched the “girl” with her long mandibles, followed her continuing biting on the way to the #2 nest, and sometimes even went after her into the nest. After the visit to the #2 nest, the “veteran” attended it several times. She picked there resin (her own!) and restored her nest plugs.
Female #2 had never demonstrated aggressiveness to #1. She tried to steal the resin fast, again and again. Once being noticed by #1, the “girl” flew away. But just for a moment. Usually, she continued her plunder attempts or, sometimes, went for the next portion of the resin to the tree.

The third female, #3, worked independently, did not pay any attention to the quarrels of her neighbors. She was the biggest in size among them, and spent most of time away, possibly, feeding. Periodically, #3 brought resin. She overnighted always in the same nest.

The bees do not show any reaction to the observer. You can hold a mirror or a magnifying glass in a centimeter from the nest entrance or from the sitting or working bee. You just have to avoid any sharp movements.

Unfortunately, M. sculpturalis make it difficult to use the trap nests by aculeates of the other species who have the same flight period. There were observed a few bees (Anthisidum sp., Heriades sp. and Hylaeus sp.) and wasps (Sphecidae, Eumenidae) that started working in the burrows of the same trap nests. After being frightened by the M. s for a few times, they all vanished, stopped coming to the nests. The M. s were not antagonistic to other species, however flying above her much smaller neighbors whilst at her work, she frightened them just by her own big body size.

M. s start working very early, at 7:30, at temperature 12C. At the hottest midday time the females prefer to stay in the nests. They kept working at the dark, dusky and cloudy days.

Sometimes, low sound from the chewing of wood came from the nest. For 15 minutes or more, the female collected pieces of wood from the burrow walls to add them to resin of the cell.

After Sept.10, warm days become more and more rare. Females spent time sitting in the nests. Then one of them was found dead at the trap nest. Two others did not come back from their last feeding flight.

Next year, 2007, first flying bees of M. s. appeared in the middle of July when dozens of other bee, Megachile rotundata, were intensively nesting in the same trap nests. M. rotundata, leaf cutting bee, is much smaller in size, 8-9 mm, prefer much smaller diameters of burrows than M. s. There were lots of empty, big diameter cavities perfectly appropriate for M. s. nesting, but after few visits, the bees left them and never showed up at the trap nest area. Remembering the moment of our last year observation, when at the time of intensive nesting of M. s. (M. rotundata already finished their work at the trap nest site at that time), aculeates of other species left the site after some short attempts to begin nesting. We assumed that different species of nest building aculeates, particularly bees, with the same flight period can not create mixed nest. Those species which attain a high density of already nesting insects make females of further species avoid the nesting area. This rule applies to natural nesting sights as well as to human made trap nests. That is why we never can find more than one nest building species working in a large aggregation of nests at once. For successful maintenance of such species in trap nests, burrows of specifically oriented (predetermined for different species) diameters, must be prepared in separate bars, which should be placed in some distance one from another. Locality of the trap nests should be distant enough to keep out a chance of overlapping of the specific working zones, since it can cause missing of one, or even both, of the species as soon as the definite level of the population density arrives. As a consequence of this rule, we can believe that M. s., hopefully, will not become a competitor for the local carpenter bee, Xylocopa virginica, for the nest sites. The fact that carpenter bees appear phenologically much earlier than M. s. is beneficial for Xylocopa.

References


Donations are welcome to support these initiatives of the TEA:

W. John D. Eberlie Research Travel Grant - to help to sponsor research into Ontario insects All donations are tax-creditable and a receipt will be issued. Even $5 will help! Please send to: Chris Rickard, Treasurer, TEA, 1606 Crediton Parkway, Mississauga, Ontario L5G 3X3
Meeting Reports

Saturday, September 22, 2007
TEA MEMBERS MEETING

On September 22, 2007, several members made short presentations on an assortment of topics as part of TEA Member’s Day activities.

The first presentation was by W.D. McIlveen who showed pictures of various arthropods that produce webs. This naturally included spiders but it was pointed out that insects too form webs. These include such things as webs for tent caterpillars, Fall Webworm, and the many caterpillars that create cocoons from silk and for sewing themselves into folded and rolled leaves.

Glen Richardson showed photographs of his trip to Moosonee and also showed a sequence of pictures of moths and butterflies (Mourning Cloak, Meadow Fritillary, Io Moth) that he had raised.

Alan McNaughton brought in a portable light trap that he had purchased and used. After members had seen it, they thought that they could readily copy the general design and manufacture their own version. The trap is a wide tube made of white netting that can be hung from a tree branch. A fluorescent or UV light tube is suspended in the middle of the trap and can attract insects from all directions.

Bruce Falls brought in some ants that he had collected and this initiated a discussion about ant infestations and the identity of the species involved.

The last presentation was by Peter Hallett who showed the results of his studies of Carpenter Bees that utilized the nesting structures that he had set out. He presented some very interesting notes from the detailed observations he had made over the last several years. Most importantly, he showed how studying the sequence of colour forms of the pupae within individual nests showed the biology of the bees and how switches in colour form reflected the complex shifts in gender identity and relatedness of the young bees.

Saturday, October 25, 2007
JOURNEY INTO THE JUNGLES OF MONTEVERDE, COSTA RICA
Jessica Grealey

On October 27, 2007, members of TEA attending the monthly meeting were treated to a presentation by Jessica Grealey who currently works for the consulting company Natural Resource Solutions Inc. of Waterloo. She talked about her experiences from two university work terms spent in Monteverde, Costa Rica.

Jessica spent her work terms near Santa Elena in a butterfly garden operated by Jim and Martha Wolfe. The facility gardens include four parts, each devoted to butterfly species representing different habitats and elevations of Costa Rica’s mountains. As well as having an insect collection to show visitors, they were able to provide visitors with exhibits of live insects. This included a leaf cutter ant colony where the internal workings of the ant’s fungal garden could be viewed.

Jessica described the diverse group of insects and other arthropods that she encountered during her stays and presented to visitors. She showed pictures of tarantulas, tarantula hawk (a very large wasp), an assortment of beetles, walking sticks, katydids and cockroaches as well as other kinds. She also showed an assortment of butterflies of which 750 species occur at Monteverde. The Lepidoptera list includes over 4000 species and likely many new species await discovery and description.

Many species of insect spend their lives high in the tree canopy and as a result, they are hard to observe and study. She had the good fortune to be able to climb up to the canopy inside a hollow strangler fig. The original supporting tree host for the fig had died and rotted away leaving a hollow tube with viewing holes and a means for gripping during the climb to the top. At the top, it was possible to see many species that were not otherwise accessible from the ground.

Among her experiences, Jessica was able to describe her living accommodations and her lessons in overcoming some squeamishness about certain insects. Some of this was warranted due to the presence of such things as up to seven species of scorpion in the area. She described how one day she encountered the movement of army ants through her living quarters one day and how they emptied the area of nearly all living pests. She mentioned the capture one day of a bullet ant that has an incredibly painful bite. Fortunately, she did not get bitten by that ant and was able to return home safe and sound without that particular experience. We would like to thank Jessica for providing a very enjoyable and informative presentation to the TEA membership.

Saturday, November 24, 2007
FUNGUS DISEASES OF INSECTS
W.D. McIlveen

At the regular monthly meeting of TEA in November, Bill McIlveen presented a talk involving a rather different aspect of entomology. The talk focused on the relationships between fungi and insects as well as other arthropods and covered general pathological and ecological
relationship between the two types of organism.

Bill’s talk covered three main themes that involved the relationships. The first was the fact that several insects types, mainly beetles, feed directly on fungi and are the sole beneficiary of the relationship. The next topic was insects that cooperate with fungi in a relationship where both organism types cooperate to their mutual benefit. Some beetles for example carry a plant pathogenic fungus to new host trees but the insect larvae feed on the fungus growing in the infected tree. In such cases, the fungus benefits from the arrangement because the insect carries the fungus to a new host tree but the fungus then sustains the insect in its larval stage. In other cases, certain fungi live on or in insects without causing them any difficulty.

The greater part of the talk focused on the third theme that related to fungi that turned the tide and commenced to attack and kill the host arthropods, almost exclusively to the benefit of the fungus. He talked about different species of fungi, some aspects of fungal taxonomy, and how fungi attack the hosts, often changing the behaviour of the host once the infection has commenced. For example, infected insects will climb to the highest points available thus ensuring the best possible dispersal of the spores when the fungi reach a mature stage. He also looked at the development of selected fungal species including Beauveria and Metarrhizium as a means of biological pest control. Some fungi growing from insects have even been developed as medicines in Asian cultures.

TEA wishes to extend appreciation to Bill for preparing and presenting a very interesting talk.

The Bookworm

NEW BOOKS

Insectes du Québec
Yves Dubuc.
Saint-Constant, Québec
Broquet, 2008.

Les Papillons du Québec
Louis Handfield — Nouv. éd.

Bees : Nature’s Little Wonders
Candace Savage.

Moth Catcher: An Evolutionist’s Journey Through Canyon and Pass.
Michael M. Collins.
ISBN 0874177251

A Swift Guide to the Butterflies of Mexico & Central America.
Jeffrey Glassberg
Illustrates nearly all butterflies and skippers known to occur in Mexico and more than two-thirds of the species that occur in Costa Rica. 3,250 color photos. 272 pages.
Sunstreak Books
April 2007

A Field Guide to the Dragonflies & Damselflies of Massachusetts.
Blair Nikula, Jennifer L. Loose & Matthew R. Burne.
The text has been updated, there are 14 new photos, and the photo reproduction has been greatly improved.
ISBN

NEW ARTICLES

Recovery Plans For Insects: What Should They Contain, and What Should They Achieve?

Virus May Be Cause of Honeybee Loss
by Rachel Petkewich.

Flight of the Honeybee
by David Stipp.

Beepocolypse Now?
by Bryan Walsh.

First Fossil of Leaf Insect Found
by Josie Glausiusz.
Discover. Chicago: Jan 2008. Vol. 29, Iss. 1; pg. 66.
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Notice to Contributors

Who Can Contribute:
Observations, articles, etc., to be published in Ontario Insects, are welcome from members of the Toronto Entomologists’ Association or from anyone interested in insects. There are no page charges. Classified ads may be placed by non-members at the rates outlined in the classified section.

Types of Submissions:
Contributions to Ontario Insects may address any subject or aspect related to entomological study. Submissions may be made in the following categories:
Research papers - may include original research or scholarly reviews following an appropriate journal format
Feature articles - informative & entertaining, format open to the author’s choice
Notes or short communications - may be observations, interpretive, historical, review or experimental studies which do not fall under the purview of research papers
Book reviews - preferably titles published within the last three years
Original artwork, puzzles - art should be clear, easily reproduced in black & white
Guest columns in Entomophilia - any subject related to the love of insects
Opinions, Letters, Queries - anything entomological under 500 words that may be of interest to the membership
Classified ads - free to members

Format for Submissions:
Ontario Insects is produced on a PC. Text editing is done in Microsoft Word, graphics are scanned or obtained from licensed CD-ROM collections and edited in CorelDRAW 4.0 with final page layout in PageMaker 6.5. The original is printed on an HP 1200 laser printer.

All submissions are encouraged, however, submissions of articles and/or artwork on disk or email are preferred. If articles are submitted via email, formats in Microsoft Word (.DOC) or rich text format (.RTF) are preferred. Please send all submissions and questions to the editor (see inside cover for address). Offprints are available at cost + 10% + postage.

Meadow Fritillary (Boloria bellona), egg laid on dead grass. Note: not on the foodplant. Photo taken August 28th, 2007 by TEA President Glenn Richardson.
ITEMS FOR SALE THROUGH THE TEA

Books: reproductions of out-of-print books

The Odonata of Canada & Alaska (3 volumes) by E.M. Walker
$185 Can ($170 for TEA members who pick it up); In USA: $200 US surface; $205 US airmail

The Cicindelidae of Canada (tiger beetles) by J.B. Wallis (1961) with colour plates
$28 Can ($23 for TEA members who pick it up); In USA: $33 US surface; $36 US airmail

The North American Dragonflies of the Genus Aeshna by E.M. Walker (1921) with colour plates
$115 Can ($105 for TEA members who pick it up); In USA: $125 US surface; $128 US airmail

The North American Dragonflies of the Genus Somatochlora by E.M. Walker (1925)
$60 Can ($50 for TEA members who pick it up); In USA: $70 US surface; $73 US airmail

Books: Other publishers

Damselflies and Dragonflies (Odonata) of Ontario: Resource Guide and Annotated List
By P.M. Catling and V.R. Brownell 2000. Annotated list of 168 species of odonata in Ontario including conservation status, flight period, habitat, distribution and identification. $40 Can; In USA: $40 US.

Books: T.E.A. publications

ISBN: 0921631111 $25 Can ($20 for TEA members who pick it up); In USA: $25 US

Ontario Insects – T.E.A. Newsjournal
Back Issues: $5 Can each; In USA: $5 US; Subscription: $25 Can; In USA: $25 US

Annual Ontario Lepidoptera Summaries (for 1987, '88, '93, '95 to present)
$10 each; In USA: $10 US surface; $15 US airmail; (free with T.E.A. membership)

Ontario Odonata: (annual summary or Odonata including articles, notes, recent literature and news)
Volume 1 (16 articles plus summary of records). Articles cover topics such as conservation status ranks, natural history, migration, lists and records, and an illustrated key to the mature nymphs and exuviae of eastern Canadian Stylurus. Cost: $25 Can; In USA/overseas, $25 U.S.

Volume 3 (18 articles plus summary). Articles include county and regional lists, range expansions, behavioural notes, conservation status and identification problems. Cost: $25 Can; In USA/overseas, $25 U.S.

Volume 5 (6 articles plus summary). Also includes news, reviews and recent literature, Cost: $20 Can; In USA/overseas, $25 U.S.

Volume 6 (6 articles plus summary). Also includes news, reviews and recent literature, Cost: $25 Can; In USA/overseas, $25 U.S.

Volume 7 (6 articles plus summary). Also includes news, reviews and recent literature, Please check our website www.ontarioinsects.org for pricing details.

Checklist of the Butterflies of the Toronto Region: 140 years of history (Third edition)
Includes flight seasons. Compiled by Barry Harrison. Please check our website www.ontarioinsects.org for pricing details

For complete details and to order, contact:

Alan Hanks, 34 Seaton Drive, Aurora Ontario L4G 2K1; (905) 727-6993, alan.hanks@sympatico.ca

Please make cheques or money orders payable to the Toronto Entomologists' Association
Mission Statement

The Toronto Entomologists’ Association (TEA) is a non-profit educational and scientific organization formed to promote interest in insects, to encourage co-operation among amateur and professional entomologists, to educate and inform non-entomologists about insects, entomology and related fields, to aid in the preservation of insects and their habitats and to issue publications in support of these objectives.

Executive Officers:

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All membership queries and payment of dues can be directed to Chris Rickard, Treasurer, 1606 Crediton Parkway, Mississauga, Ontario, Canada, L5G 3X3. (905) 274-2692.

Publications received as part of a TEA membership include:

- 3 issues of Ontario Insects per year
- annual Ontario Lepidoptera Summary

THE TEA IS A REGISTERED CHARITY (#1069095-21); ALL DONATIONS ARE TAX CREDITABLE.
Announcements
and Short Notes

Eberlie Field Research Travel Award for 2008

The TEA has announced that the 2008 W. John Eberlie Field Research Travel Award, has been awarded to Crystal Vincent who is studying fly (Ormia ochracea) parasitism of the Texas field cricket (Gryllus texensis).

Details of her research can be found in the TEA Student Symposium Abstracts on page 32 of this Issue.

There were two excellent applications for the award, which were adjudicated by TEA member W.D. McIlveen.

2008 Vanessa Butterfly Migration Project

It’s spring again, and time to announce the 2007 season of the Vanessa Migration Project. In a way similar to Journey North’s Monarch tracking, we are mapping seasonal distribution and migration of four Vanessa butterflies in North America:

Red Admiral (Vanessa atalanta)
Painted Lady (Vanessa cardui)
American Lady (Vanessa virginiensis)
West Coast Lady (Vanessa annabella)

We are seeking several types of observations:

1. First sighting of the year. The first date when you see (or have seen) any of these butterflies in your area, and the numbers seen that day.

2. Noticeable directional migrations. If there are noticeable directional migrations of these species in your area, we would appreciate your reports of these migrations.

3. Presence or abundance during the upcoming season. Observations in your own area besides or following your first sighting, multiple observations from a particular location, and sightings during your travels are also welcome.

4. None of a particular species seen during the entire season. Negative observations are also helpful in defining the extent to which butterflies migrate or otherwise distribute themselves each year.

Please include your full name, e-mail address, the location from which you observed, and the date or dates when you see these butterflies. For evident directional migrations, please include also the direction toward which they seem to be moving. A rough estimate of how frequently they are passing through (for example, 10 butterflies over 20 minutes) would also be helpful, as would notes on temperature, wind speed and direction, and type and extent of cloud cover.

For more information about this project and how to report your observations, see the Red Admiral and Painted Lady Research Site

http://www.public.iastate.edu/~mariposa/homepage.html

Once there, select the links, “Help Track the 2007 North American Migration” and “How to Report Your Observations.” We are taking observations either directly via e-mail (mariposa@iastate.edu) or through our reporting form and database.

We now have an interactive map that opens from the map images on our home page, as well as complete instructions for viewing and working with the map (“How to Use Our Interactive Map”).

If you have observations from previous years that you would like to share, please feel free to send these to us also. We will add them to our database and interactive map.

Many thanks to all of you who sent in or forwarded observations last year! Considering the low abundance of Vanessa butterflies in most parts of North America during 2006, we still received a substantial number of observations last year.

So, when you’re watching for Monarchs, we would appreciate it very much if you could also keep an eye out for Red Admirals and Painted Ladies at the same time. Or please pass this message on to others whom you think might be interested in this project.

Thank you,
Royce J. Bitzer mariposa@iastate.edu

Videos on Insect Mating Habits

A series of one-minute short videos on the mating habits of insects have been prepared by Toronto filmmaker Jody Shapiro and actress-director Isabella Rossellini. They were shown at the “Hot Docs” festival in Toronto in April. Beginning May 5, two months before their TV premiere, the videos will be available for viewing at the website for the Sundance Channel in the US. Consult the main page of the TEA website (www.ontarioinsects.org) for the exact link.
Saturday May 31, 8 p.m.
RONDEAU MOTH NIGHT
Leader: Dave Beadle
Our moth night in Rondeau Provincial Park was very successful last July, so we have decided to hold one there in May this year. Dave identified some rare and wonderful moths, and we are hoping for some early season rarities from Ontario’s “Deep South”. Steve LaForest will be giving an introduction to moths at 8 p.m., before going out to see what moths have been lured in by the lights and Dave’s “moth goop”. We will meet at the Rondeau Visitor Centre, about 6 km inside the Park gate. For more information contact Carolyn King at 416-222-5736 or cking@yorku.ca. Bring insect containers, a flashlight, moth guides if you have them.

Tuesday July 1, 9 a.m.
T.E.A. EAST TORONTO BUTTERFLY COUNT
Co-ordinator: Tom Mason
Bone up on your ID skills and help count butterflies in the Rouge or Don Valley. This is an official NABA count and the T.E.A. will pay your participation fee. For those counting in the Rouge, meet at the Pearse House. From Sheppard Ave go north on Meadowvale Rd; take the exit to the Toronto Zoo but turn RIGHT at the first turn and park along the side of the road. Bring nets, containers, lunch and water. No collecting in the Rouge. Call Tom Mason (905-839-6764) if you plan to participate.

Wednesday July 23, 8:15 PM
HIGH PARK MOTH NIGHT
Leaders: Dave Beadle, Tom Mason
This is a joint outing with the High Park Community Advisory Council. Members of the public are invited to join TEA members Dave Beadle, Tom Mason, Carolyn King, and Karen Yukich for an evening of moth-catch and identification. A $2 donation is requested. Meet at the benches across from the Grenadier restaurant at 8:15 pm. This outing is especially good for children – bring the whole family! No collecting. Bring insect containers, a flashlight, moth guides if you have them. For more information contact Carolyn King at 416-222-5736 or cking@yorku.ca.

Saturday July 26, 8 p.m.
WALSINGHAM MOTH NIGHT
Leader: Dave Beadle
We are following up on another successful moth location this summer, at the farm of TEA Members Mary Gartshore and Peter Carson, near Walsingham, in the Long Point area. Dave has found a lot of great moths there over the years. Attendees can come just for the evening, camp out, or stay at a B&B and return the next morning for the 8 a.m. wrap-up, after Dave has emptied the traps and ID’d the last of the moths. For more directions and information contact Carolyn King at 416-222-5736 or cking@yorku.ca. Bring insect containers, a flashlight, moth guides if you have them.

Saturday August 9, 10 a.m.
SPIDERS OF BLACKWATER (Beaver Creek)
Leader: Tom Mason
This has been a popular outing for a number of years. The Beaver Creek rail trail has a wealth of habitats for all kinds of insects and spiders. Streams, ponds, bridges, weedy vegetation: all the places spiders like to be. Bring insect containers, nets, hand lens, water and lunch. (Note: Easy walking) Meet on the road shoulder where Beaver Creek flows under Hwy 12 just south of Blackwater.

(date & location TBA), 10 a.m.
INSECT PHOTOGRAPHY
Leader: Kerry Jarvis
After the excellent talk Kerry gave on photography at our January meeting, several members requested a follow-up outing. Kerry will be glad to advise on the techniques and strategies for getting good insect shots. We will meet at a location not far from Toronto. Bring sunscreen, lunch, any camera (or just your enthusiasm!)

. . . .More trips to come . . .

NOTE: Occasionally we have to change the date or start time of an outing, so it’s important that we know whether you plan to attend. For all events except the T.E.A. Butterfly Count, please contact the organizers: Carolyn King (416)222-5736 cking@yorku.ca or Steve LaForest (905)720-2784  For more details and for updates, visit www.ontarioinsects.org
# 2008 Ontario Insect Counts

## BUTTERFLY COUNTS

<table>
<thead>
<tr>
<th>Date (Rain date)</th>
<th>Location</th>
<th>Contact</th>
<th>Telephone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sat. June 7</td>
<td>Algonquin East Side</td>
<td>Colin Jones</td>
<td>(705) 652-5004</td>
<td><a href="mailto:colin.jones@ontario.ca">colin.jones@ontario.ca</a></td>
</tr>
<tr>
<td>*Mon. June 16</td>
<td>Sandbanks Prov. Park</td>
<td>Yvette Bree</td>
<td>(613) 393-3319 x277</td>
<td><a href="mailto:yvette.bree@ontario.ca">yvette.bree@ontario.ca</a></td>
</tr>
<tr>
<td>Sat. June 28 (29)</td>
<td>Pinery Prov. Park</td>
<td>Brenda Kulon</td>
<td>(519) 869-2833</td>
<td><a href="mailto:kulon@cogeco.ca">kulon@cogeco.ca</a></td>
</tr>
<tr>
<td>Sat. June 28 (29)</td>
<td>Muskoka Bala</td>
<td>Ron Stager</td>
<td>(705) 684-9194</td>
<td><a href="mailto:ronstager@sympatico.ca">ronstager@sympatico.ca</a></td>
</tr>
<tr>
<td>Sun. June 29</td>
<td>Oshawa</td>
<td>James Kamstra</td>
<td>(905) 985-4497</td>
<td><a href="mailto:jakamstra@gartnerlee.com">jakamstra@gartnerlee.com</a></td>
</tr>
<tr>
<td><strong>Tues. July 1</strong></td>
<td>T.E.A. Toronto East</td>
<td>Tom Mason</td>
<td>(905) 839-6764</td>
<td><a href="mailto:tmason@torontozoo.ca">tmason@torontozoo.ca</a></td>
</tr>
<tr>
<td>Wed. July 2</td>
<td>Hwy 60 Algonquin</td>
<td>Colin Jones</td>
<td>(705)652-5004</td>
<td><a href="mailto:colin.jones@ontario.ca">colin.jones@ontario.ca</a></td>
</tr>
<tr>
<td>Sat. July 5*</td>
<td>Orillia</td>
<td>Bob Bowles</td>
<td>(705)375-3149</td>
<td><a href="mailto:rbowles@rogers.com">rbowles@rogers.com</a></td>
</tr>
<tr>
<td>Sat. July 5</td>
<td>Long Point</td>
<td>Doug Timpf</td>
<td>(519-586-9964)</td>
<td><a href="mailto:cmichener@renc.igs.net">cmichener@renc.igs.net</a></td>
</tr>
<tr>
<td>Sat. July 5 (6)</td>
<td>Lake Dore</td>
<td>Chris Michener</td>
<td>(613) 625-2263</td>
<td><a href="mailto:ppratt@city.windsor.on.ca">ppratt@city.windsor.on.ca</a></td>
</tr>
<tr>
<td>Sat. July 5</td>
<td>Windsor</td>
<td>Paul Pratt</td>
<td>(519) 966-5852</td>
<td><a href="mailto:jakamstra@gartnerlee.com">jakamstra@gartnerlee.com</a></td>
</tr>
<tr>
<td>Sun. July 6</td>
<td>Sunderland</td>
<td>James Kamstra</td>
<td>(905) 985-4497</td>
<td><a href="mailto:jeff_skevington@yahoo.ca">jeff_skevington@yahoo.ca</a></td>
</tr>
<tr>
<td>Sat. July 6</td>
<td>Ottawa</td>
<td>Ann White</td>
<td>(519) 457-6586</td>
<td><a href="mailto:doug_ann.white@rogers.com">doug_ann.white@rogers.com</a></td>
</tr>
<tr>
<td>Sun. July 6</td>
<td>Skunk’s Misery</td>
<td>Emily Slavik</td>
<td>(519-674-1774)</td>
<td><a href="mailto:emily.slavik@ontario.ca">emily.slavik@ontario.ca</a></td>
</tr>
<tr>
<td>Sun. July 6</td>
<td>Rondeau Prov. Park</td>
<td>John Carley</td>
<td>(416) 766-1330</td>
<td><a href="mailto:carley.la@sympatico.ca">carley.la@sympatico.ca</a></td>
</tr>
<tr>
<td>Sat. July 12(13)</td>
<td>Toronto Centre</td>
<td>Ed Poropat</td>
<td>(705)457-3018</td>
<td><a href="mailto:edporopat@halhinet.on.ca">edporopat@halhinet.on.ca</a></td>
</tr>
<tr>
<td>Sat. July 12</td>
<td>Haliburton Highlands</td>
<td>Ed Poropat</td>
<td>(705)457-3018</td>
<td><a href="mailto:edporopat@halhinet.on.ca">edporopat@halhinet.on.ca</a></td>
</tr>
<tr>
<td>*Sat. July 12</td>
<td>Clear Creek</td>
<td>Heather Prangley</td>
<td>(519) 674-3200</td>
<td><a href="mailto:heather.prangley@sympatico.ca">heather.prangley@sympatico.ca</a></td>
</tr>
<tr>
<td>Sat. July 12 (13)</td>
<td>Hog Island</td>
<td>Chris Michener</td>
<td>(613) 625-2263</td>
<td><a href="mailto:cmichener@renc.igs.net">cmichener@renc.igs.net</a></td>
</tr>
<tr>
<td>*Sat. July 12</td>
<td>Cambridge (rare)</td>
<td>Larry Lamb</td>
<td>(519) 888-4567 x32646</td>
<td><a href="mailto:lelamb@fas.uwaterloo.ca">lelamb@fas.uwaterloo.ca</a></td>
</tr>
<tr>
<td>Sun. July 13</td>
<td>Cariden Alvar</td>
<td>Bob Bowles</td>
<td>(705) 325-3149</td>
<td><a href="mailto:rbowles@rogers.com">rbowles@rogers.com</a></td>
</tr>
<tr>
<td>Sat. July 19 (20)</td>
<td>Petroglyphs Prov. Park</td>
<td>Jerry Ball</td>
<td>(705) 745-3272</td>
<td><a href="mailto:butterflycount@bmts.com">butterflycount@bmts.com</a></td>
</tr>
<tr>
<td>Sat. July 26*(27)</td>
<td>Bruce Peninsula Nat’l. P.</td>
<td>Call the Park</td>
<td>(519) 596-2233</td>
<td><a href="mailto:rbowles@rogers.com">rbowles@rogers.com</a></td>
</tr>
<tr>
<td>Sat. Aug 2</td>
<td>Pelee Island</td>
<td>Bob Bowles</td>
<td>(705) 325-3149</td>
<td><a href="mailto:sarah_rupert@pc.gc.ca">sarah_rupert@pc.gc.ca</a></td>
</tr>
<tr>
<td>*Sat. Aug 9 (10)</td>
<td>Point Pelee Nat’l. Park</td>
<td>Sarah Rupert</td>
<td>(519) 322-5700 x13</td>
<td></td>
</tr>
</tbody>
</table>

* Counts not confirmed
Counts held in the past but without dates for this year
Misery Bay, Manitoulin I.  Nancy Ironside (705) 326-4384 nancy.ironside@sympatico.ca
Severn Township  Nancy Ironside (705) 326-4384 nancy.ironside@sympatico.ca

## DRAGONFLY COUNTS

<table>
<thead>
<tr>
<th>Date (Rain date)</th>
<th>Location</th>
<th>Contact</th>
<th>Telephone</th>
<th>Email</th>
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</thead>
<tbody>
<tr>
<td>Thu. Jul 3</td>
<td>Algonquin Odonate</td>
<td>Colin Jones</td>
<td>(705) 652-5004</td>
<td><a href="mailto:colin.jones@mnr.gov.on.ca">colin.jones@mnr.gov.on.ca</a></td>
</tr>
<tr>
<td>*Sun. Jul 6</td>
<td>Hamilton Odonate</td>
<td>Carl Rothfels</td>
<td>(919) 943-0227</td>
<td><a href="mailto:crothfels@yahoo.ca">crothfels@yahoo.ca</a></td>
</tr>
<tr>
<td>Fri. Jul 11</td>
<td>Haliburton Odonate</td>
<td>Ed Poropat</td>
<td>(705)457-3018</td>
<td><a href="mailto:ed.barb@sympatico.ca">ed.barb@sympatico.ca</a></td>
</tr>
<tr>
<td>Sat. Jul 19</td>
<td>Cariden Alvar Odonate</td>
<td>Bob Bowles</td>
<td>(705) 325-3149</td>
<td><a href="mailto:rbowles@rogers.com">rbowles@rogers.com</a></td>
</tr>
<tr>
<td>*Tues. Jul 15</td>
<td>Royal Botanical Gardens</td>
<td>Carl Rothfels</td>
<td>(919) 943-0227</td>
<td><a href="mailto:crothfels@yahoo.ca">crothfels@yahoo.ca</a></td>
</tr>
<tr>
<td>Sat. Aug 2 (3)</td>
<td>Lake Dore Odonate</td>
<td>Chris Michener</td>
<td>(613) 625-2263</td>
<td><a href="mailto:cmichener@renc.igs.net">cmichener@renc.igs.net</a></td>
</tr>
<tr>
<td>Sun. Aug 3</td>
<td>Pelee Island Odonate</td>
<td>Bob Bowles</td>
<td>(705) 325-3149</td>
<td><a href="mailto:rbowles@rogers.com">rbowles@rogers.com</a></td>
</tr>
</tbody>
</table>

*Dates are subject to change! Please check with the count organizer in advance. Everyone is welcome, whatever your skill level. Note that many of these counts are done for the North American Butterfly Association and that there may be a nominal charge for participating. Please be prepared for the count activity with sunscreen, water, hat, food and other items suggested by the count organizer. This list has been compiled by Carolyn King and the Toronto Entomologists’ Association.*
The Toronto Entomologists’ Association sponsored its Annual Student Symposium in the Ramsey Wright Building at the University of Toronto on March 29, 2008. The purpose of the symposium is to encourage students of entomology to present the results of their research projects to members of the Association. In total, there were six oral presentations and five poster presentations.

The topics represented a wide range of subject matter and all were very interesting to members of TEA. TEA is pleased that the caliber of the work being done at the four universities represented is very high. Abstracts of the presentations are included below.

**ORAL PRESENTATIONS**

**The birds and the bees: do introduced Apis mellifera compete with cavity-nesting birds for nest sites?**

*Kyla Ercit*
University of Guelph

Abstract:
The introduction of honey bees, *Apis mellifera* to non-native countries has been the subject of ecological concern. Ever since the introduction and spread of the Africanized honey bee (*A. m. scutellata*), understanding feral bee impact on non-native environments has become much more important. There are few studies examining potential competition between honey bees and cavity-nesting birds for nest sites. Honey bees prefer the same shape and volume of cavity that is utilized by many species of birds. Bees also have a temporal advantage over birds, as they search for suitable cavities more months of the year than do birds. The phenomenon of bees occupying nest boxes intended for birds and nest cavities previously occupied by birds has been observed often enough to be cause for alarm. Honey bees have been recorded interfering with the conservation of endangered cavity-nesting birds in Australia, South and Central America, and southern United States. Many species of birds may be affected by this phenomenon, since the number of available nesting cavities can be a limiting factor in bird populations. Endangered birds whose futures are already in jeopardy are being put under further stress by loss of nest sites to bees. Further study is needed to examine this phenomenon in the wild.

**Parasitic nasal mites associated with birds of Alberta and Manitoba.**

*Jason Gibbs*
York University

Abstract:
The sweat bee subgenus *Dialictus* (*Halictidae: Lasioglossum*) is an ideal group for studying the evolution of social behaviour in Hymenoptera. A large array of social systems (solitary, communal, semisocial, eusocial, socially parasitic) have been identified in this group. In some species, both solitary and eusocial populations are known. Only five species of *Dialictus*, all from eastern North America, are known to be social parasites, out of over five hundred *Dialictus* species worldwide. A phylogeny based on molecular and orphological data demonstrates for the first time that social parasitism in *Dialictus* evolved twice independently. The evolution of social parasitism and the implications of multiple origins in *Dialictus* are discussed.

**The evolution of social parasitism in the sweat bee subgenus Dialictus.**

*Wayne Knee*
Carleton University

Abstract:
Birds host a high diversity of symbiotic associates; one of the most species rich groups is mites (Arachnida: *Acari*). Three major lineages of mites (Arachnida: *Acari*) are parasitic in the nasal passages of birds: Rhinonyssidae (*Mesostigmata*), Ereynetidae (*Prostigmata*), Cytoditidae and Turbinoptidae (*Astigmata*). The most diverse group of avian nasal mites is the Rhinonyssidae, which are obligate endoparasites of non-ratite birds worldwide. Prior to this study, there were only four published, and three unpublished records of nasal mites from birds in Canada. Of 450 birds (154 species) examined in Alberta during 2003-2007 15% were infested with nasal mites; in Manitoba, 16% of 2447 birds (196 species) examined during 1996-2006 were infested. We have expanded the known records of host-nasal mite species in Canada from seven to 102, a 14-fold increase. There are now 50 species of Rhinonyssidae, 7 species of Ereynetidae, and 1 species of Turbinoptidae known from birds in Alberta and Manitoba. We predict that at least 70 species of rhinonyssid mites can be found in Canada.

**Correlated evolution of male and female morphology across populations of water striders (Gerris spp.).**

*Jennifer C. Perry and Locke Rowe*
University of Toronto

Abstract:
Despite intense interest in sexual conflict, there are few
uncontroversial examples of the sexual coevolution of traits involved in mating conflict. One well-documented example occurs in water striders: species in which males have exaggerated appendages for grasping females are also the species in which females have exaggerated anti-grasping structures. This species-level pattern is consistent with models of sexually antagonistic coevolution; however, there is currently little known about the extent of phenotypic divergence in these traits among populations. Moreover, theory predicts that local ecological factors should influence the outcome of sexual arms races, but there is little data available to address this hypothesis. In this study, we first assessed the extent of sexual covariation in body shape across populations of two water striders (*Gerris buenoi* and *G. incognitus*). We examined both new collections and museum specimens and employed a geometric morphometric analysis. We found that male and female body shape show tight covariance in *G. incognitus*, but not in *G. buenoi*. In contrast to the species-level pattern, populations with males that possess exaggerated grasping traits occur with females that have reduced anti-grasping traits, and vice versa. Next, we tested whether geography is correlated with the extent of morphological divergence. Latitude explained nearly 50% of the variation across populations, suggesting that ecological factors may be important in sexual coevolution. Previous studies have shown that several ecological factors affect mating costs in water striders. Future work will investigate whether and how these factors are related to divergence in sexual armaments.

**The cryopreservation of honeybee (Apis mellifera L.) spermatozoa.**

**Megan A. Taylor**
University of Guelph

**Abstract:**
The objective of this study was to test six diluents, three cryoprotectants, and five semen:diluent ratios as a means to improve post-thaw viability of cryopreserved honeybee (*Apis mellifera* L.) semen for instrumental insemination. In addition, differences in sperm freezing tolerance among strains of honeybees were tested. Specific protocols were designed to control freezing and thawing rates. Spermatozoa motility was assessed visually, while viability was assessed using SYBR-14 and propidium iodide. There were no significant differences among honeybee strains for post-thaw spermatozoa viability. Semen collected at high dilution ratios using diluent 4 in combination with cryoprotectant DMSO, provided significantly higher post-thaw viability than all other combinations tested (68.3 ± 5.4%). These new semen dilution and freezing methods improve post-thaw viability of honeybee spermatozoa to levels that could theoretically sustain worker populations in colonies, thus providing potential for further optimization of cryopreservation techniques for the genetic preservation and improvement of honeybee genotypes.

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**Welcome to the neighbourhood: what it means for native caterpillars when the Gypsy Moth moves in for good.**

**Laura Timms and Sandy Smith**
University of Toronto

**Abstract:**
Research on the detection and management of the gypsy moth has been extensive; however, very few studies have addressed the ecological implications of its introduction into North American forests. With a wide host range and a large assemblage of natural enemies, the gypsy moth has broad potential to both indirectly and directly affect native species. To investigate potential impacts, gypsy moth and native caterpillars were collected and reared from forest stands in North-central Ontario with and without histories of gypsy moth outbreak. Species richness and community structure of native caterpillars were assessed in relation to gypsy moth outbreak history and current abundance. Although gypsy moth outbreak history was not a good predictor, current gypsy moth abundance was found to have a negative impact on species richness and evenness of native forest caterpillar communities. This may be the result of strong correlations between the gypsy moth and certain native species; gypsy moth populations were positively associated with those of the forest tent caterpillar and negatively with those of the whitemarked tussock moth. The impact of the gypsy moth on native natural enemy communities is being assessed through the use of food webs. Preliminary results indicate that high gypsy moth abundance may reduce the number of connections in parasitoid-caterpillar food webs.

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**POSTER PRESENTATIONS**

**A phylogeny of the genera of Conopidae (Diptera) based on mtDNA.**

**Joel F. Gibson & Jeffrey H. Skevington**
Carleton University

**Abstract:**
The Conopidae are a fascinating family of parasitic flies. The larvae of most species in the family are parasitoids of bees and wasps. The adults usually feed on flowers and can serve as important pollinators. Many species are mimics of bees and wasps, sometimes even of the same species that serve as hosts to their young. No phylogeny for the Conopidae has been attempted. We have reconstructed the first higher-level phylogenetic tree for the family using molecular characters. DNA was extracted from 19 specimens representing 16 genera and all four extant subfamilies. Mitochondrial DNA was amplified with PCR and sequenced. A ~600 bp segment of the 12S ribosomal
Abstract:
The mating system of the two-spot ladybird beetle (*Adalia bipunctata* (Coleoptera: Coccinellidae)) involves a nuptial gift: females ingest a spermatophore following copulation. In this study, we test the hypothesis that nuptial gift production is costly for males and dependent on male condition. First, we quantified the mass of ejaculate transferred during copulation, to estimate the proportion of male body mass devoted to a single ejaculate. Males transfer, on average, 3% (95% CI: 1%-6%) of their body weight to females, an amount that is consistent with estimates in other beetles. Second, we tested for an effect of high or low male condition (manipulated via a diet treatment) on measures of mating performance and ejaculate transfer. Low condition had a large and significant negative impact on male mating performance. Compared to low-food males, high-food males were significantly more likely to copulate and to transfer a spermatophore during copulation, and copulated 38% longer. We used the amount of mass lost during copulation as an index of ejaculate mass, and found that high-food males transferred 30% larger ejaculates compared to low-food males. Similarly, spermatophores produced by high-food males were 34% larger than those of low-food males. The relative mass of the spermatophore compared to the entire ejaculate was similar for low- and high-food males. A preliminary assessment of the protein and water content of ejected spermatophores indicates little difference between low- and high-food males. These results suggest that male mating behaviour and ejaculate production are condition-dependent in this beetle. Moreover, they suggest that by ingesting ejected spermatophores, females may gain information about the condition of their mate.

Biochemistry of spermatophores: nuptial gift giving in ladybird species.

Ying Wang
University of Toronto

Abstract:
In many ladybird beetles (Coleoptera: Coccinellidae), males transfer sperm via a spermatophore, which females eject and ingest after mating. Previous studies suggest that ingested spermatophores are of little nutritional value to females; however, eating spermatophores reduces female re-mating rate, an effect that may benefit males. One hypothesis for the maintenance of spermatophore feeding behaviour is that spermatophores contain phagostimulants that makes them attractive to females as food items despite their limited nutritional value. In particular, free amino acids are known to stimulate feeding in many insects. In this study we compared the free amino acid profiles of ejected spermatophores from two ladybird beetles (*Harmonia axyridis* and *Adalia bipunctata*) to the free and general amino acid content of ladybird body tissue and pea aphids (*Acyrthosiphon pisum*, a typical prey for ladybirds).
How many barcodes does it take to identify a sphingid? Effect of DNA sequence database size on subfamily, tribe, genus and species assignments

John J. Wilson
University of Guelph

Abstract:
DNA barcoding is receiving growing acceptance in the taxonomic community as a means of providing an unknown specimen with a species name. Sequencing the ‘DNA barcode’ segment of the COI mtDNA gene and performing comparisons against a database of curated sequences has been successfully implemented for the identification of Lepidoptera species from the Area de Conservacion Guanacaste, and across many other animal groups. However, the approach still sustains a considerable number of attacks in the literature, which can be broadly sectioned into one of two fronts. Firstly, the successes reported in DNA barcoding studies are unrealistic due to biased and incomplete taxonomic sampling regimes. Secondly, DNA barcoding will fail due to an incomplete reference database against which to perform the identification analysis. These may appear as contradictory arguments; DNA barcoding only works due to taxonomically incomplete datasets and DNA barcoding fails due to taxonomically incomplete datasets, but both are often alluded to in a single study or opinion article. In this study we aim to counter these two contradictory concerns by firstly measuring the success of barcoding with a complete dataset: the “Sphingids of the world”. Are test specimens correctly assigned or do they form para/polyphyletic groups with closely related allospecifics? Secondly we will determine if specimens can be assigned to a correct higher taxonomic group when conspecifics are absent in an incomplete dataset. In this regard we will investigate how the size of the database and how it is assembled (i.e. randomly or systematically) impacts on the success of taxonomic assignments using DNA barcodes.

Meeting Reports

Saturday, January 26, 2008
PHOTOGRAPHING INSECTS: TECHNIQUES, TIPS AND SECRETS
Kerry Jarvis

The presentation given by Kerry Jarvis, a teacher at Seneca College started with a short collage of different beautiful insect photographs that he had taken.

The next part of the presentation included a description of the photographic equipment that he uses. Generally, he tries to carry the least equipment possible in a hip pack. Within that definition of minimalist equipment, he includes a digital SLR, a film SLR and a point-and-shoot Lumix camera, as well extra lenses and smaller pieces of supporting photographic equipment. His SLR cameras were Nikons because he already had a good set of those lenses in his possession. Other photographers can use whatever cameras they decide to use, and should be able to get comparable results. He talked about some different but standard pieces of equipment such as compact light diffusers, clothespins, and masking tape. Kerry also mentioned insect nets and containers for holding insects. He emphasized care of camera equipment including protection from rain in plastic bags, lint cloths and brushes and recommended reading camera manuals with care.

The next part of the presentation included preparations for the photography session and this covered such things as letting someone know of your travel plans, spare equipment (batteries), snack, water, and personal protective equipment including biting insect protection, such as a bug shirt and/or hat.

He next discussed some technical aspects of photography including composition of the photograph, framing, bracketing, selecting appropriate backgrounds, and proper edges for photographs. He emphasized knowing the habitats in which you do your photography, as well as knowing the subject. Kerry discussed lighting, especially as it relates to time of day, and light constraints during sunny days. He talked about using shadows (e.g. white umbrella) to advantage to avoid washing out parts of photographs in strong light. He discussed the use of flash in photography and how, depending upon a particular situation, a flash might be used to advantage. Kerry also recommended moving to different positions and considering different angles when taking photographs to achieve preferred background or lighting conditions.

Kerry listed a number of different ways that finished photographs might be used. His list ranged from scientific publications to online photo collections, to screen savers, postcards and presentations. He also talked about a number of different ways to manipulate photographs after the image has been captured and different programs for presenting photographic shows. As an example, he showed a series of high quality insect photographs, accompanied by music, in a program called Pro Show Gold which is one of several possible programs for making presentations.

Saturday, February 23, 2008
COLONY COLLAPSE DISORDER (CCD) IN HONEYBEES
Ernesto Guzman

Ernesto Guzman is Associate Professor of Apiculture at the University of Guelph. He has studied bees for over 30 years in Mexico, the U.S. and Canada. His presentation gave us an in-depth look into winter mortality in honeybees in Ontario and the U.S.
Colony Collapse Disorder was first reported in the States in the fall of 2006 and the phenomenon continued into 2007 and 2008. CCD is an arbitrary name chosen to refer to the death or sudden weakening of honeybee colonies where no corpses of adult bees are found. Worker bees abruptly disappear! A collapsing colony shows too small a workforce for colony maintenance and that workforce is made up of young bees. In Canada the bees did not disappear - they can’t leave their hives here in the winter - but were found dead inside the hive.

In the U.S. 800,000 colonies - a full third of the total number of hives - were lost. Colony loss was also reported from other countries. In Canada one-third of the colonies were also lost in the winter of 2006/07, more than 3 times higher than the expected winter mortality of 10 percent. There is no precedent for such massive losses. In Ontario the winter mortality rate was 37 percent. Ernesto translated that loss into dollars. The 28,000 lost colonies would have produced 3300 pounds of honey and pollinated tons of crops. The cost of the colonies ($3 M), honey ($4 M) and lost crop revenue ($47 M) adds up to over $50 million dollars.

What is causing these massive losses of honeybee colonies? Ernesto discussed several possibilities.

- Parasitic mites. Honeybees are very susceptible to the varroa mite and may have developed resistance to current miticides.
- Viruses. IAPV (Israeli Acute Paralyzing Virus) has been mentioned but so far there is not enough evidence to support it as a cause.
- Microsporidians. Nosema ceranae was reported in Ontario for the first time last year. It has caused massive losses in Spain.
- Stress. Both malnutrition and transportation are possible stressors. Malnutrition could result from forcing bees to feed on a single crop flower for a long period. Pollen from a single plant type is not as nutritious as pollen from different plants. Transportation of honeybees to pollinate a specific crop has become the norm. Twenty years ago only 10 percent of U.S. bees were transported; today 80 percent are. Ontario honeybees are transported to New Brunswick for 2 months to pollinate blueberries. The California almond crop requires 1 million hives for pollination. Since it is much more profitable for beekeepers to rent their hives for pollination than to produce honey, they may not be as motivated to have thriving hives.
- Pesticides. Both the chemicals used to treat the bees and those used on the crops may be causing problems.
- Climate. The winter climate of 2006/07 was unusual: a cold fall was followed by a warm winter. Because of the cold fall the bees were not able to collect enough pollen. The warm winter triggered early reproduction which used up scarce hive resources.
- GM crops. No effect has been shown.

What are the consequences of honeybee colony losses? We have become very dependent on honeybees for pollination. One third of all the crops we eat are pollinated by bees. The loss of these crops is estimated at $15 billion U.S. The move to monocultures in farming has degraded or eliminated habitat for wild species of bees who could be alternative pollinators.

Ernesto next explained why honeybees are such efficient pollinators. They show flower constancy, i.e. they will feed on the same type of flower all day. They are highly motivated to collect pollen since they need it for survival and reproduction. Their plumose (hairy) body readily transports pollen. They inhabit huge colonies - up to 60,000 individuals in a colony - and colonies can be easily transported.

Canada is working on several approaches to stemming winter colony losses. Ernesto described some of the projects his group is working on. The varroa mite can cut a bee’s life expectancy by 50 percent. It is currently controlled by synthetic chemicals which are very effective for a while. However, the mites develop resistance and the chemicals are toxic and costly. So organic controls are being investigated; thymol and origanum oil are showing promise. Another approach is to increase the resistance of the bees to the mite. Resistance is helped by the honeybee behaviours of grooming and hygiene, i.e. recognition and removal of infested brood. Not all bees perform these behaviours but they are genetically based. The goal is to increase the number of bees who do.

Not all the fallout from CCD has been negative! Increased research funding has allowed Ernesto to purchase equipment to set up a Pathology and Molecular Genetics Lab. This will help identify parasites and genotype bees.

At the end of his very interesting and informative presentation, Ernesto concluded that we don’t have CCD in Canada but we do have high rates of winter mortality. He feels that large losses are caused by multiple factors, not a single culprit.

Editor’s Update

Peter Hallett’s talk at the September meeting concerned variable prepupal colours in the small Potter Wasp (Symmorphus canadensis). The January issue had reported that the study concerned the Carpenter Bee (Xylocopa virginica).

NEXT MEETING

TEA Members Meeting

Saturday September 27, 2008 1:15 PM
Rm 006, Northrop Frye Hall
As a result of a 3-day workshop held last December 2007 in Morelia, Mexico

...and subsequent conference calls, representatives from Canada, U.S.A. and Mexico have produced a final draft of the North American Monarch Butterfly Conservation Plan, which will be presented for approval to the Council of the Commission for Environmental Cooperation at the Council’s next meeting in June 2008 in Ottawa. Canadian Committee Members include Don Davis of the T.E.A. and Jean Lauriault of the Canadian Museum of Nature. Thanks to Dr. Karen Oberhauser, University of Minnesota, and Hans Herrmann of the CEC for their important leadership roles. Karen has also developed a draft for the Trilateral Monarch Monitoring Handbook.

The Canadian Monarch Butterfly Plan (SARA)

...planning process is currently delayed due to staffing changes at the Canadian Wildlife Service.

Major Discovery Related to Monarch Sun “Compass”

Every year, Monarchs migrate thousands of miles to their wintering grounds in Mexico. The migration appears to be genetically programmed because the southbound migrants are not the same as those that flew north in the spring. The butterflies rely on an internal sun “compass” to guide them on their journey, corrected for the time of day, so they maintain a constant bearing as the sun moves across the sky. Steven Reppert, a neurobiologist at the University of Massachusetts Medical School in Worcester studied the daily cycle of molecular changes in the pars lateralis, the region of the butterfly brain that contains the circadian clock. One of the key elements in the clock, they found, is a protein called cry2, which inhibits its own production in a negative feedback loop, so the concentration rises and falls in a 24-hour cycle. Levels of cry2 also rise and fall in a daily rhythm in another part of the brain known as the central complex, which houses the Monarch’s sun compass. In all likelihood, this means that cry2 is the molecular link between clock and compass. Comparing active genes in migratory versus non-migratory butterflies should help reveal how a Monarch manages its epic journey. According to Dr. Orley “Chip” Taylor of Monarch Watch, “The study by Reppert et al is really fundamental and will have broad implications in that they show how the clock system works so that a constant vector is maintained as the sun passes across the sky. This model is likely to apply to many other molecular feedback systems in organisms.” Listen to an interview with Dr. Reppert: http://www.npr.org/templates/story/story.php?storyId=18024428

Monarch Watch

...has launched a new Monarch Watch BLOG. This latest feature will keep you current with frequent updates of what’s going on at Monarch Watch and with Monarchs in general. Go to www.Monarchwatch.org, and click on “Monarch Watch BLOG”. The most recent entry describes Chip Taylor’s recent purchase of recovered Monarch watch tags in Mexico. Monarch Watch will also be initiating a new Milweed and Nectar Plant Phenology Project. See the BLOG for details. Order your Monarch tags early. A limited supply will be made available.

The Monarch Waystation Program continues to grow!

Over 1871 individuals, families, schools and companies in Canada and the U.S.A. have established or dedicated a garden to help Monarchs to produce successive generations and sustain their migration. For further details, go to: http://www.Monarchwatch.org/waystations/.

The 15th annual Journey North program is underway,

...and this award-winning, internet-based science program, utilized by about 700,000 students, would appreciate your Monarch observations: first adult sighting, first eggs, first larva, first milkweed sighting. To register your sightings, go to: www.learner.org/jnorth. Sightings of other target species also appreciated.

Upcoming Monarch Butterfly Events in Ontario include:

22nd Monarchs and Migrants Weekend (Presqu’ile Provincial Park) - Aug. 30-31/08; Monarch Days (Greenway Blooming Centre, Breslau - first three weekends in September) –
Ontario Insects

www.Monarchdays.com; Monarch Butterfly Migration Festival (Rondeau Provincial Park) – Sept. 21/08.

California Monarch Butterfly Advocate Ro Vacarro

Known as the “Butterfly Lady” in Pacific Grove, California, Ro organized The Friends of the Monarch and for over 20 years, she battled to protect the Monarch Grove Sanctuary from developers. During the 1990 California state election, only one environmentally-related proposal was approved in the entire state, when a feisty Ro and friends convinced 70% of Pacific Grove residents to purchase the 2.7 acre sanctuary, slated for a residential development. Ro died of cancer on January 8, 2008 at age 66.

TEA member Don Davis spoke with Ro just a few days before her passing, and tributes were received from across the continent from the likes of Dr. Robert Pyle and Dr. Lincoln Brower.

The Monarch Teachers Network Canada

...will be holding 3-day workshops for teachers and educators in Brighton, Wiarton and Kingston, Ontario in late July and early August 2008. Go to: www.Monarchcanada.org to register before June 15/08.

Congratulations to Mrs. Norah Urquhart CM

...a member of The Order of Canada, wife and research partner of the late Dr. Fred Urquhart, Professor Emeritus, University of Toronto. The Urquharts are renowned for their discovery of the Monarch butterfly overwintering sites in Mexico. This accomplishment has been described as the greatest entomological discovery of the 20th century. The Urquharts are also highly regarded as strong advocates for environmental protection and conservation. Mrs. Urquhart celebrates her 90th birthday on June 23, 2008.

What role does scent play in the Monarch migration?

In the March 28/08 Globe and Mail, author Anne McIlroy reported that Dr. Jeremy McNeil of the University of Western Ontario and Dr. Barrie Frost of Queen’s University are conducting experiments to determine if Monarchs, which return year after year to the same overwintering sites, may leave behind a scent that they can follow or sense in subsequent years. Analyses will be done on samples of air and pine needles from roosting sites in the Monarch Biosphere Zone.

2007 Tagging Season Recoveries:

Recently, Dr. Chip Taylor headed to Mexico on his annual trek to purchase recovered Monarch tags from local citizens and ejidatarios in the Monarch Biosphere Zone. Dr. Taylor was able to purchase 600 tags. Had more funds been available, he could have purchased another 200 tags. While many of the tags were used in the year 2007, tags were purchased that had been used as far back as the year 2001 and earlier. Another 70 tags were purchased by persons visiting Mexico, and sent to Monarch Watch.

Migrating Monarchs have now reached the southern United States

...but unfavourable weather conditions may prevent a successful breeding season there. Dr. Orley “Chip” Taylor is particularly concerned about the Monarch migration with respect to habitat loss in Mexico. See: http://www.features.ku.edu/Monarchs/. As of April 17, 2008, migrating Monarchs had been spotted as far north Southern Illinois, Kentucky and Virginia. See: http://www.learner.org/jnorth/Monarch/News.html.
Early Spring Insects in Toronto

Mourning Cloak, *Nymphalis antiopia*
April 16, 2008 at Eglinton Flats

Six Spotted Tiger Beetle, *Cicindela sexguttata*
April 22, 2008 at Eglinton Flats

European Lady Beetle
April 17, 2008 at Lincoln Avenue

Compton Tortoiseshell, *Nymphalis van-album*
April 5, 2008 at Lincoln Avenue

*All photos © Bob Yukich 2008*
The Bookworm

A Swift Guide to the Butterflies of Mexico and Central America, by Jeffrey Glassberg.

Reviewed by: Kerry Jarvis

If ever there was an ambassador for butterflies — Jeffrey Glassberg would be at the top of the list. His passion for butterflies and nature began at an early age. According to Glassberg, “I’ve been interested in butterflies (and birds and pretty much all of nature) since age 5. So, the truth is that I’ve no idea what made butterflies so compelling to me. I will say that where I grew up, on the south shore of Long Island, New York, there were a group of about 15 boys (unfortunately no girls) who were very keen on butterflies and birds, as well as playing stickball and football, collecting baseball cards, etc. So, I thought that this was fairly normal childhood activity. It wasn’t till I got to college that I realized that birds and butterflies weren’t in most boys’ repertoires. Of the group, I continued with a strong interest in butterflies (and birds); another member of the group is now curator of Lepidoptera at the U.S. National Museum, Smithsonian Institution; and a third member of the group was formerly the chief lobbyist for the National Audubon Society. So, I guess something was in the water.”

From his early passions he formed the North American Butterfly Association (NABA) in 1992, to which he still serves as president. Its mission: “to increase public enjoyment and conservation of butterflies. NABA focuses on the joys of non-consumptive, recreational butterflying including listing, gardening, observation, photography, rearing and conservation.” Along the way he also authored several field guides. Most notably he pioneered the very successful “Butterflying Through Binoculars” series of field guides, which have since branched out to include caterpillars, dragonflies and wildflowers.

How does one raise the “butterfly field guide” bar? If you’re Jeffrey Glassberg you do it by innovating field guides that are user friendly, lightweight and instructive at identifying butterflies in the field. His new book: A Swift Guide to the Butterflies of Mexico and Central America accomplishes all of this and more. Glassberg realized that he had a special challenge on his hands. “When I set out to create a field guide of Mexican and Central American butterflies, I had to deal with the fact that there are more than 1700 species of butterflies found in Mexico. If I used an existing format, the size of the book would have precluded its use in the field, so it wouldn’t really be a field guide. So, after much thought, I developed the Swift Guide format,” says Glassberg.

The Swift Guide is loaded with over 3200 colour images, and uses red arrows to pinpoint tell-tale identification features of the butterflies. This allows the user to determine one similar looking species from another. For example, the Montane Sister (Adelpha donysa) and the Pithy Sister (Adelpha pithys) look very similar with their wings open. The red arrows point out the difference between the two, allowing you to quickly, or should I say, swiftly, distinguish one from another. Flipping through the Swift Guide is a real treat and reminds one of an old high school yearbook. The images do the talking and there is little text. In fact, there are only 7 pages of text and a 2 page bibliography in the entire book.

Where possible, Glassberg used images from the field and for those species not available he photographed from museum specimens. While the majority of images are clean and useful for easy identification there are a few images where quality suffers. To his credit, Glassberg is striving to replace museum images with updated field shots. These updates are posted on his web site: http://www.sunstreaktours.com/
Local TEA member contributes to book
Glassbergs’ book has a local slant to it, as TEA member, Bob Yukich contributed 12 images. Yukich’s butterfly images were taken on trips from Texas, Mexico, Nicaragua and Honduras. In a fortuitous set of circumstances, Yukich met Kim Garwood while on a butterfly trip in the Lower Rio Grande Valley in southern Texas in 2004. Garwood was in the process of publishing a butterfly guide to North Eastern Mexico and was interested in Yukich’s images for her neotropical butterfly website: (http://www.neotropicalbutterflies.com/index.html

Yukich shared some of his images with Garwood for her website. She eventually passed these images on to Jeffrey Glassberg. The rest they say is history, as Glassberg was enthusiastic in receiving Yukich’s images for his new book.

Photographing butterflies:
Photographing butterflies is a learned skill that takes practice and patience. According to Yukich, “It takes a lot of persistence and a lot of shooting, as well as lots of luck, especially with the rarer butterfly species to get the images you want.” Glassberg adds that, “In my experience, many photographers take photographs from a longer distance than is optimal (most of the photographs in the book were taken with the camera lens being within an inch of the butterfly) and from an oblique angle that is suboptimal. If one’s interest is in showing other people what the butterfly looks like, then one wants to shoot so that the butterfly’s wings are parallel to the plane of the photograph. To do this, one must often get on one’s belly on the ground and be a bit of a contortionist.”

Glassberg’s Favourite Butterflies and Favourite Butterfly Location:
When asked to share the most gratifying butterfly to find in the field and photograph for this book Glassberg candidly exclaimed, “I get pretty excited about whatever butterfly is in front of me. No matter how many times one has seen a particular species, a freshly eclosed individual in the right light has incredible depth of color and beautiful sheens. This is true even of seemingly nondescript little brown skippers!” Like a true spokesman, Glassberg sees beauty in all butterflies. As to his favourite locations to look for butterflies Glassberg shared that, “The world is so full of wonderful natural areas that it is almost impossible to have favorites. Certainly, the Rockies of the western U.S. and Canada are incredibly breath-taking and full of butterflies! In Mexico, the cloud forests of Oaxaca are amazing and the Mayan sites in the rain forest, such as at Palenque and Bonampak, are otherworldly. However, I do have a very strong affinity for Tuscany and Umbria, areas that not only have a wealth of beautiful butterflies, but also have great food, great wine, great architecture, great art and wonderful people.”

For those who are planning to travel to Mexico and Central America, remember to pack along “A Swift Guide to the Butterflies of Mexico and Central America.” For those who have returned from Mexico and Central America and are having challenges identifying your butterfly images, then order Glassberg’s book. You will be glad you did.

“A Swift Guide to the Butterflies of Mexico and Central America.” can be purchased directly for $34.95 US from: http://www.sunstreakbooks.com

Current Insect Reading

This is a new section of Ontario Insects which is edited by Alan Macnaughton. Alan has written all of the reviews below, but for future issues members are invited to write notes on books as well as noteworthy magazine and newspaper articles. Send them to him at amacnaug@uwaterloo.ca, or phone him in Kitchener at 519-570-9898.


This article describes a week-long insect-rearing school run every fall at Mississippi State University by Dr. Frank M. Davis. It is open to anyone willing to pay the entry fee of $975 US. The emphasis is on artificial diets. A key finding is that the basic principles of insect rearing were the same regardless of what kind they were and how many were needed.
Many of the participants seek to raise insects for research. For example, one project was to find corn varieties resistant to the southwestern corn borer moth. Using proper food (mainly wheat germ and milk protein), proper lighting (16 hours of light and 8 hours of darkness), and correct temperature (27 degrees) and humidity (60%), Dr. Davis was able to breed a generation of thousands of corn borers every month. The bred insects were placed in a cornfield, and so by identifying the plants that were not eaten, they were able to identify varieties of the plant which were resistant to be corn borers.

Other attendees had completely different goals in mind. For example, a couple from Canada who were interested in raising monarch butterflies and painted ladies for release at weddings attended the 2007 session.


The Pipevine Swallowtail (Battus philenor) is unpalatable to birds because of its larval foodplant (pipevine, or Aristolochia spp.). It is believed that the Red-spotted Purple (Limentis arthemis astynax), a palatable look-alike to the Pipevine Swallowtail, derives some protection from its similarity in wing coloration.

Prudic and Oliver extend this Batesian-mimicry theory to explain why the White Admiral (Limentis arthemis arthemis) occurs in some areas and the Red-Spotted Purple occurs in others, even though the two have the same larval foodplant (Salix spp., or willows). The theory is that the Red-Spotted Purple occurs in areas where Aristolochia spp. , and hence the Pipevine Swallowtail, occurs. Where this plant does not occur, there is no survival value gained from taking the Red-spotted Purple coloration, and hence the species reverts to the White Admiral coloration. The latter’s white and black “disruptive coloration” is believed to have the biological advantage of making it difficult for a predator to see the prey’s actual body outline.

Prudic and Oliver perform genetic analysis to establish a likelihood that the White Admiral subspecies is earlier in the genetic tree, and hence the Red-spotted purple is reverts to its ancestral form when it reverts to the White Admiral coloration. They also use Ross Layberry’s Butterflies of Canada Canadian distribution data and similar US data to confirm the hypothesis that the Red-Spotted Purple occurs only where the Pipevine Swallowtail’s foodplant occurs.

In summary, Prudic and Oliver show that a Batesian mimic does not persist in locations without its model, but instead of going extinct it can revert to an earlier form.


In a time when many websites can be used to identify insects (e.g., the Moth Photographers Group), what is the value of field guides and other books on particular insect types? Tuttle’s answer to this question is that such books are the place to go for the latest information on distribution, foodplants, and adult biology. For example, Tuttle reports that the Big Poplar Sphinx (Pachysphinx modesta) does not feed as an adult, and females are generally taken at lights soon after dark, while males come just before midnight. Another interesting fact reported is that Sphinx luscitiosa males are not generally attracted to lights, while females are.

Tuttle reports that determining the Canadian distributions of many species was especially difficult. For that purpose, Tuttle relies extensively on Toronto Entomologists Association seasonal summaries. It is gratifying to learn that our reports have been used in this way, and it suggests that it is important for us to continue this work.
TEA Insect Collecting Code

“Code for Insect Collecting” for the TEA, summarized and paraphrased from the “Code for Insect Collecting” issued by the Joint Committee for the Conservation of British Insects in 1971 and also from the statement of the Committee on Collecting policy of the Lepidopterists’ Society in the USA.

Benefits of collecting Lepidoptera and other insects:
1. It is a means of introducing people, particularly children to an awareness and study of an important part of their natural environment.
2. It has an essential role in the elucidation of scientific information, both for its own sake and as a basis from which to develop rational means for protecting the environment and its resources.
3. It is a recreational activity which can be pursued in a manner not detrimental to the environment.

Purpose of collecting:
1. To create a reference collection for study, appreciation and education.
2. To document regional diversity, frequency and variability of species and as voucher material for published records. This includes the important matter of monitoring the fluctuation of populations.
3. To document faunal representation in environments threatened with alteration by man or natural forces.
4. To participate in the development of regional checklists and institutional reference collections. The Canadian National Collection and collections in museums and universities have depended to a large extent on the efforts of amateur collectors.
5. To complement a planned research endeavor.

Ethics of collecting:
1. A collection of adults should be limited to sampling the population concerned.
2. Insects should be examined while alive, and if not required, released where they were captured.
3. The same species should not be taken in numbers year after year from the same locality.
4. Specimens for exchange should be taken sparingly.
5. Insects should not be collected for commercial purposes; for such purposes, they should be reared or obtained from old collections.
6. Species which are listed as threatened, vulnerable or rare should be collected with the greatest restraint. It is suggested that one pair is sufficient. Likewise, one pair of distinct local forms should also be regarded as sufficient.
7. When collecting where the extent or fragility of the population is unknown, great caution and restraint should be exercised.
8. Previously unknown localities for rare species should be reported, e.g. to the editors of the TEA Seasonal Summary, but the exact locality should not be published, only the township or nearest town or village.
9. Light traps: live traps are preferable and should be visited regularly and the catch should not be killed wholesale for subsequent examination.
10. Always respect restrictions on collecting in national and provincial parks, nature reserves and conservation areas. Cause as little damage to the environment as possible.
11. Rearing from a captive fertilized female, or from pairing in captivity is preferable to taking a series in the field, if for personal collection.
12. Never collect more larvae than can be supported by the available food supply.
13. Insects reared in excess of need should be released in the original locality.
14. Malaise traps probably should not be used by amateurs. In any case, they should be limited to planned studies.

Responsibilities for collected material:
1. All specimens should be preserved with full data attached.
2. All material should be protected from physical damage and deterioration.
3. Collections should be available for examination by qualified researchers.
4. Collections, with their full data, should be willed or offered to an appropriate scientific institution, e.g. a museum or university, in case of lack of space, loss of interest, or death.
5. Type specimens, especially holotypes or allotypes, should be deposited in appropriate institutions.

Related activities:
1. Collecting should include field notes regarding habitat, weather conditions and other pertinent information.
2. Recording of observations of behaviour and biological interactions should receive as high a priority as collecting; such observations are particularly welcomed for inclusion in TEA Seasonal Summaries or Newsletters.
3. Photographic records are to be encouraged, but it is emphasized that full data for each photograph should be recorded.
4. Education of the public regarding collecting and conservation as reciprocally beneficial activities should be undertaken whenever possible.
T.E.A. Lepidoptera and Odonata Summaries

T.E.A. invites all members and non-members to contribute sightings to the annual insect summaries. There are two summaries: one for Lepidoptera (butterflies and moths); and one for Odonata (dragonflies and damselflies). The sightings are published in two separate publications. Both summaries also feature papers, articles and notes on a variety of topics covering the respective insect orders. The Lepidoptera summary is sent to members as a benefit of membership. The Odonata summary (entitled Ontario Odonata) is not included with membership but is offered to members at a discounted price. Either of the yearly summaries may be purchased by non-members. We recommend that you contact the compiler directly for more details.

**Lepidoptera summary**

**What information to send:**
Make note of the name of the butterfly or moth, the date seen, and where it was seen. Be fairly specific if possible indicating at least a city/town/conservation area and the county. Including geographic coordinates in the form of a UTM or Latitude and Longitude (read from a topographic map or derived from a handheld GPS unit) would also be beneficial but is not mandatory. Please also note how many individuals you see and, if possible, whether they are male or female. Distinguishing between sight and specimen based records is also tremendously useful. Any particular behaviour such as nectaring, egg-laying etc. is also of interest. Please send in the order that the species are listed in the summary.

**When and where to send:**
Submissions should be sent by January 31, 2008. Electronic submissions are encouraged, preferably in a spreadsheet or database application such as Microsoft Excel or Corel Quattro Pro. Records submitted in a wordprocessing application (e.g. Microsoft Word or Corel Wordperfect) are also fine as are handwritten records. Records should be sent to the following compilers:
- **Butterflies:** Colin D. Jones (Box 182, Lakefield, ON K0L 2H0. work: 705-755-2166, home: 705-652-5004, colin.jones@mnr.gov.on.ca).
- **Moths:** Compiler needed. See details on inside front cover

**Odonata summary**

**What information to send:**
Species name, county, precise location (e.g. 1 km W of Mine Centre on south shore of Little Turtle Lake), number of individuals seen, an accurate UTM and/or Lat./Long. reference either using a GPS or 1 inch maps, and observation date. Please contact one of the compilers to receive an electronic form (or a hard copy) containing all of the necessary fields. It is strongly encouraged that (if possible) you compile your data using a database file such as dBase, Access, or Excel.

**When and where to send:**
All submissions should be received by December 31, 2007. Late submissions will be included at the discretion of the compilers.

**Northern Ontario:** The regional compiler for northern Ontario (all parts of Ontario north of Algonquin Park and Nipissing District, and including Haliburton, Muskoka, Renfrew and Peterborough) is Colin D. Jones (Box 182, Lakefield, ON K0L 2H0. work: 705-755-2166, home: 705-652-5004, colin.jones@mnr.gov.on.ca).

**Central Southern and Eastern Ontario (Provincial Compiler):** The regional compiler for this part of the province (most of the region east of a line from the south end of Georgian Bay east to the Ottawa and St. Lawrence valleys (with the exceptions of Peterborough, Haliburton, and Muskoka) is Paul Catling (2326 Scrivens Drive, RR 3 Metcalfe, Ontario K0A 2P0. 613-821-2064, brownell@achilles.net). Paul is also the Provincial Compiler.

**Southwestern Ontario:** The regional compiler for this region (the south and southwest of a line connecting the south end of Georgian Bay to Hamilton and Niagara on the Lake) is Paul Pratt (7100 Matchette Rd., LaSalle, ON N9C 2S3. 519 966 5852, prairie@netcore.ca).

For more details, see [http://nhic.mnr.gov.on.ca/MNR/nhic/odonates/atlas.html](http://nhic.mnr.gov.on.ca/MNR/nhic/odonates/atlas.html)
Notice to Contributors

Who Can Contribute:
Observations, articles, etc., to be published in Ontario Insects, are welcome from members of the Toronto Entomologists' Association or from anyone interested in insects. There are no page charges. Classified ads may be placed by non-members at the rates outlined in the classified section.

Types of Submissions:
Contributions to Ontario Insects may address any subject or aspect related to entomological study. Submissions may be made in the following categories:

- Research papers - may include original research or scholarly reviews following an appropriate journal format
- Feature articles - informative & entertaining, format open to the author's choice
- Notes or short communications - may be observations, interpretive, historical, review or experimental studies which do not fall under the purview of research papers
- Book reviews - preferably titles published within the last three years
- Original artwork, puzzles - art should be clear, easily reproduced in black & white
- Guest columns in Entomophilia - any subject related to the love of insects
- Opinions, Letters, Queries - anything entomological under 500 words that may be of interest to the membership
- Classified ads - free to members

Format for Submissions:
Ontario Insects is produced on a PC. Text editing is done in Microsoft Word, graphics are scanned or obtained from licensed CD-ROM collections and edited in CorelDRAW 4.0 with final page layout in PageMaker 6.5. The original is printed on an HP 1200 laser printer.

All submissions are encouraged, however, submissions of articles and/or artwork on disk or email are preferred. If articles are submitted via email, formats in Microsoft Word (.DOC) or rich text format (.RTF) are preferred. Please send all submissions and questions to the editor (see inside cover for address). Offprints are available at cost + 10% + postage.

Flea Market

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Personal Ads Free to Members as Always!!!
ITEMS FOR SALE THROUGH THE TEA

Books: reproductions of out-of-print books

The Odonata of Canada & Alaska (3 volumes) by E.M. Walker
$185 Can ($170 for TEA members who pick it up); In USA: $200 US surface; $205 US airmail

The Cicindelidae of Canada (tiger beetles) by J.B. Wallis (1961) with colour plates
$28 Can ($23 for TEA members who pick it up); In USA: $33 US surface; $36 US airmail

The North American Dragonflies of the Genus Aeshna by E.M. Walker (1921) with colour plates
$115 Can ($105 for TEA members who pick it up); In USA: $125 US surface; $128 US airmail

The North American Dragonflies of the Genus Somatochlora by E.M. Walker (1925)
$60 Can ($50 for TEA members who pick it up); In USA: $70 US surface; $73 US airmail

Books: Other publishers

Damselflies and Dragonflies (Odonata) of Ontario: Resource Guide and Annotated List
By P.M. Catling and V.R. Brownell 2000. Annotated list of 168 species of odonata in Ontario including conservation status, flight period, habitat, distribution and identification. $40 Can; In USA: $40 US.

Books: T.E.A. publications

ISBN: 0921631111 $25 Can ($20 for TEA members who pick it up); In USA: $25 US

Ontario Insects – T.E.A. Newsjournal
Back Issues: $5 Can each; In USA: $5 US; Subscription: $25 Can; In USA: $25 US

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Volume 7 (6 articles plus summary). Also includes news, reviews and recent literature, Please check our website www.ontarioinsects.org for pricing details.

Checklist of the Butterflies of the Toronto Region: 140 years of history (Third edition)
Includes flight seasons. Compiled by Barry Harrison. Please check our website www.ontarioinsects.org for pricing details

For complete details and to order, contact:
Alan Hanks, 34 Seaton Drive, Aurora Ontario L4G 2K1; (905) 727-6993, alan.hanks@sympatico.ca

Please make cheques or money orders payable to the Toronto Entomologists’ Association
Mission Statement
The Toronto Entomologists’ Association (TEA) is a non-profit educational and scientific organization formed to promote interest in insects, to encourage co-operation among amateur and professional entomologists, to educate and inform non-entomologists about insects, entomology and related fields, to aid in the preservation of insects and their habitats and to issue publications in support of these objectives.

Executive Officers:
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Membership Information:
Annual dues are as follows:
Individual $25
Student $15
Family $30

All membership queries and payment of dues can be directed to Chris Rickard, Treasurer, 1606 Crediton Parkway, Mississauga, Ontario, Canada, L5G 3X3. (905) 274-2692.

Publications received as part of a TEA membership include:
• 3 issues of Ontario Insects per year
• annual Ontario Lepidoptera Summary

THE TEA IS A REGISTERED CHARITY (#1069995-21); ALL DONATIONS ARE TAX CREDITABLE.
Membership Dues Reminder

This is a gentle reminder to those members who have not paid their membership dues. The current year runs from August 1, 2008 to July 31, 2009. The membership fee schedule remains the same as last year:

- Individual: $25.00
- Family: $30.00
- Student: $15.00

Membership application forms can be found at our website: www.ontarioinsects.org

Please mail your payment to the TEA Treasurer: Chris Rickard, 1606 Crediton Parkway, Mississauga, ON L5G 3X3

Checklist of the Butterflies of the Toronto Region: 140 years of History (Third Edition) Correction

On the flight chart, Tawny Emperor (Asterocampa clyton) reads from June 15th to July 1st. Actually it should read July 15th to August 1st.

The TEA apologizes for this error.

Student Symposium 2009

The annual TEA Student Symposium will be held on Saturday March 28, 2009. A formal call for applications to speak or present a poster will be issued in January 2008. Graduate students, senior undergraduates and postdoctoral fellows are eligible to participate in the Symposium. Participation in the Symposium is a prerequisite for applying for the W.J.D. Eberle Travel Research award (see below). We expect up to 6 short presentations (10 minutes) and 10 posters. Abstracts of the presentations and posters will be published in Ontario Insects.

What is Citizen Science?

Citizen Science is the collection of scientific data by individuals who are not professional scientists. They are prepared for their work as citizen scientists by professional biologists from the land management agency. These projects are ongoing and consist of a network of volunteers. Citizen Science networks are very important. The citizen science monitoring programs would not be the success it is without the participation of citizen scientists. Without these dedicated volunteers, too few data would be collected to accomplish research objectives. Much of what has been learned about the monarch butterfly and its migration is the result of citizen science projects.

Some examples of butterfly related Citizen Science Programs include: Monarch Watch, Journey North, Monarch Larva Monitoring Project, Project Monarch Health, 4th of July Butterfly Counts.

Upcoming Review of Ontario Invertebrate Policy

The Ontario Ministry of Natural Resources, Fish and Wildlife Branch, is planning to review policies related to the Ontario Fish and Wildlife Conservation Act (FWCA), and specifically pertaining to current policies and procedures related to Specially Protected Invertebrates (SPI). There are 13 butterfly species currently listed as Specially Protected. Some of these species are also listed federally and provincially by the respective endangered species legislation. Capture, possession, propagation, sale and release of SPI are all regulated under the FWCA.

Ministry officials are awaiting approval from the Minister to proceed with this review, but in the interim are gathering background data and information on Specially Protected Invertebrates. The Ministry has indicated its intention to consult fully with all stakeholders during this process.

Regrettably, this limited review is not intended to lead to changes to the Ontario Fish and Wildlife Conservation Act – a review that many see as necessary and overdue. It is generally acknowledged that many of the Specially Protected Invertebrates are neither rare nor endangered. A few are simply uncommon because they are Carolinean species.

UPDATE: Karner Blue Reintroduction Project

Northumberland County has been designated as one of the three top regions for the possible reintroduction of the Karner Blue butterfly. The two other locations are in Lambton and Norfolk counties. At the Alderville Black Oak Savanna/Prairie conservation area, about 4,000 blue lupine plugs have been planted. Alison Clarke, the project’s research and restoration coordinator, noted that Tom Mason of the Toronto Zoo recently visited the site and was impressed by what he saw. Ms. Clarke reports that they are now also planting on nearby private properties and along roadsides.

Recently, a Mottled Duskywing was spotted on the newly planted New Jersey tea bushes.

Ontario Insects

Upcoming Meetings
Everyone is welcome. Bring a Friend!

Saturday September 27, 2008 1:15 PM Room 006 Northrop Frye
MEMBERS’ MEETING
It wasn’t the best summer for insects - too cool and wet - but there were still interesting insects about: Marine Blues in Toronto and Giant Swallowtails expanding their range. Bring your photos to share with fellow enthusiasts.

Saturday October 25, 2008 1:15 PM Room 006 Northrop Frye
MOTHS AT LARGE
Jim des Rivieres
To say that Jim is a photographer of moths would be a huge understatement. He approaches insects as a visual artist with a background in photography and fine art printing. He scans moth specimens with a high-resolution flatbed scanner. Then he spends hours retouching the images scale by scale using Photoshop to correct blemishes. So far he has produced exhibition-quality images of more than 300 moth species.

His presentation will show moths from an unfamiliar perspective and hopefully give a heightened appreciation of just how beautiful they are.

Saturday November 22, 2008 1:15 PM Room 006 Northrop Frye
CREATIVE USES OF MUD
Bill McIlveen
IT’S CROWDED IN HERE!
Peter Hallett
Bill McIlveen is an environmental consultant now following a long career with the Ontario Ministry of the Environment. Many insects use soil by nesting in the ground. Bill’s presentation will look at the advanced way certain wasps use soil to build their nests above ground. He’ll discuss the biology and nests of both the Mud Dauber and potter wasps.

Peter Hallett is a professor affiliated with both the University of Toronto and the Department of Natural History at the ROM. He has been studying the nesting habits of solitary bees for many years. In this presentation he will look at what happens in nest contests between farmed species of local solitary bees and wasps when there is overcrowding.

Saturday January 24, 2009 1:15 PM Room 006 Northrop Fye Hall
POLLINATOR WATCH
Heather Andrachuk
Pollinator Watch is a new project aimed at assessing the status of Canadian insect pollinators. It was spearheaded by Seeds of Diversity in partnership with Environment Canada. Volunteer observers are recruited to record the activities of pollinating insects.

Heather Andrachuk was the Pollinator Watch contact at Environment Canada and is currently pursuing an MSc in pollination studies at Waterloo. Her presentation will give us a look at this timely new project and how we might get involved.

All meetings are held at:
Northrop Frye Hall Room 006
Victoria University (at the University of Toronto)
73 Queens Park Crescent Toronto, ON
(Museum subway stop; opposite the Museum, on the east side).

See the next page for map and parking directions. For more information, call Carol Sellers at (416) 421-7398
Also check www.ontarioinsects.org

November 2008
To reach Northrop Frye Hall by subway or bus:

Get off at the Museum stop on the University-Spadina subway line or take the Avenue Bus #5 south from the Eglinton Subway Station. Go to the east side of Avenue Road and walk south. Northrop Frye Hall is on the left just at the bend.

To reach Northrop Frye Hall by highway:

QEW: If you are driving in on the Queen Elizabeth Way (QEW), follow the Gardiner Expressway to York Street. Go north on University Avenue (University Avenue changes into Queens Park Crescent above College St, and then into Avenue Road above Bloor St.). Northrop Frye Hall is just south of Bloor Street.

Highway 401: From Highway 401, take Avenue Road south to Bloor Street OR take the Don Valley Parkway south to the Bloor Street Ramp and proceed west along Bloor to Avenue Road.

Parking

There is some on-street parking in the area (check the signs carefully!) and there are several paid parking lots within walking distance of Northrop Frye Hall:

- Bloor Street and Bedford Road, 1 Block west of Avenue Road.
- On Cumberland Street, 1 block north of Bloor, east off Avenue Road.
- Behind the Colonnade at 131 Bloor St. West.
- One block north of Bloor Street West on Avenue Road

Parking on a Saturday is usually a flat rate of $8 or more depending on the lot.
This year we held a total of 5 outings, of which 2 were “Moth Nights”. Many thanks to our capable leaders and to all TEA members who shared their expertise to make the outings a success.

May 31
RONDEAU MOTH NIGHT
Leader: Dave Beadle
Report by Glenn Richardson

This year the Rondeau Moth night was held on two weekend evenings from May 30th to June 1st. Most common was the Agreeable Tiger Moth (14 individuals) followed by the Miranda Moth (11 individuals) and the Common Grey (10 individuals). Several large Sphinx moth species were also seen in smaller numbers; these being the Lettered Sphinx (5), Waved Sphinx (4), Blinded Sphinx (1), Twin Spotted Sphinx (1) and Small Eyed Sphinx (1).

As always the TEA is thankful to Dave Beadle for setting up his equipment and identifying the moths.

List of Most Common Moths

<table>
<thead>
<tr>
<th>Moth Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spilosoma congrua</td>
<td>Agreeable Tiger Moth</td>
</tr>
<tr>
<td>Proxemus miranda</td>
<td>Miranda Moth</td>
</tr>
<tr>
<td>Anavitrinelia pampinaria</td>
<td>Common Grey</td>
</tr>
<tr>
<td>Platysesta videns</td>
<td>White-dotted Groundling</td>
</tr>
<tr>
<td>Apantesis nais</td>
<td>Nais Tiger Moth</td>
</tr>
<tr>
<td>Marathysa basalis</td>
<td>Light Marathysa</td>
</tr>
<tr>
<td>Chlorochlamys chloroleuca</td>
<td>Blackberry Looper Moth</td>
</tr>
<tr>
<td>Ellida caniplaga</td>
<td>Linden Prominent</td>
</tr>
<tr>
<td>Faronta diffusa</td>
<td>Wheat Head Armyworm Moth</td>
</tr>
<tr>
<td>Phaneta avemeana</td>
<td></td>
</tr>
<tr>
<td>Lomographa vestaliata</td>
<td>White Spring Moth</td>
</tr>
<tr>
<td>Pseudorthodes vecors</td>
<td>Small Brown Quaker</td>
</tr>
<tr>
<td>Udea rubrigalis</td>
<td>Celery Leafhopper</td>
</tr>
<tr>
<td>Biston betularia</td>
<td>Pepper-and-salt Geometer</td>
</tr>
<tr>
<td>Deidamia inscripta</td>
<td>Lettered Sphinx</td>
</tr>
<tr>
<td>Peridea angulosa</td>
<td>Angulose Prominent</td>
</tr>
<tr>
<td>Tarachidia candefacta</td>
<td></td>
</tr>
<tr>
<td>Tarachidia erastrioides</td>
<td>Small Bird-dropping Moth</td>
</tr>
<tr>
<td>Pseudalepta unipuncta</td>
<td>Armyworm Moth</td>
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<tr>
<td>Agrotis volubilis</td>
<td>Voluble Dart</td>
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<tr>
<td>Octopleura plecta</td>
<td>Flame-shoulder Dart</td>
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<tr>
<td>Plutella xylostella</td>
<td>Diamond-back Moth</td>
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<tr>
<td>Atteva punctella</td>
<td>Ailanthus Webworm Moth</td>
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<tr>
<td>Dyspteris abortivaria</td>
<td>The Bad Wing</td>
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<tr>
<td>Ceratonia undulosa</td>
<td>Waved Sphinx</td>
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<tr>
<td>Clostera inclusa</td>
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<tr>
<td>Euparthenos nubilis</td>
<td>Locust Underwing</td>
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<tr>
<td>Caenurgina erechtea</td>
<td>Forage Looper Moth</td>
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<tr>
<td>Lithacodia synochitis</td>
<td>Black-dotted Lithacodia</td>
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<tr>
<td>Polia goodelli</td>
<td>Goodell’s Arches</td>
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<tr>
<td>Protorthodes oviduca</td>
<td>Rudy Quaker</td>
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<tr>
<td>Orthodes crenulata</td>
<td>Rustic Quaker</td>
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<tr>
<td>Phaneta umbrastriana</td>
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<tr>
<td>Epiblema scudderiana</td>
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<tr>
<td>Gretchena amatana</td>
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<tr>
<td>Achyra rantalis</td>
<td>Garden Webworm</td>
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<tr>
<td>Macaria bignata</td>
<td>Red-headed Inchworm</td>
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<tr>
<td>Macaria gnophosaria</td>
<td>Hollow-spotted Angle</td>
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<tr>
<td>Melanolophia canadaria</td>
<td>Canadian Melanolophia</td>
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<tr>
<td>Hethemia pistaciaria</td>
<td>Pistachio Emerald</td>
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<tr>
<td>Spilosoma virginicum</td>
<td>Virginian Tiger Moth</td>
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<tr>
<td>Phalaenophana pyramusalis</td>
<td>Dark-banded Owlet</td>
</tr>
<tr>
<td>Baileya australis</td>
<td>Small Bailey</td>
</tr>
<tr>
<td>Nola triquetrana</td>
<td>Three-spotted Nola</td>
</tr>
<tr>
<td>Leuconycta diptheroides</td>
<td>Green Leuconycta</td>
</tr>
<tr>
<td>Colocasia propinquilinea</td>
<td>Close-banded Yellowhorn</td>
</tr>
<tr>
<td>Elaphria grata</td>
<td>Grateful Midget</td>
</tr>
<tr>
<td>Ethmia zelleriella</td>
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</tr>
</tbody>
</table>

Blinded Sphinx (Paonias excaecatus) at the Rondeau Moth Night, May 31, 2008  Photo by Dave Beadle
July 1

TEA TORONTO EAST BUTTERFLY COUNT
Leader: Tom Mason
Report by Glenn Richardson

This year cool wet spring weather delayed flight times for many species. Reduced numbers of Red Admirals (Vanessa atalanta) and American Ladies (Vanessa virginiensis) were noted. There were no `Sedge Skipper` species observed. Instead, larger than usual numbers of Inornate Ringlets (Coenonympha inornata) and Little Wood Satyrs (Megisto cymela) were observed.

Continuing meadow habitat destruction caused by tree planting was noted in the Rouge Valley.

Coral hairstreak (Harkenclenus titus) 12
Acadian hairstreak (Satyrium acacidum) 2
Banded hairstreak (Satyrium calanus) 5
Striped hairstreak (Satyrium liparops) 1
Eastern tailed blue (Everes comyntas) 2
Summer azure (Glauropsyche lygdamus) 2
Great spangled fritillary (Speyeria cybele) 29
Baltimore (Euphrydas phaetion) 95
Northern crescent (Phyciodes selenis) 204
Pearl crescent (Physiodes tharos) 5
Comma (Polygonia comma) 7
Question mark (P. interrogationis) 2
Mourning cloak (Nymphalis antiopa) 7
Red admiral (Vanessa atalanta) 2
American painted lady (V. virginiensis) 2
White admiral (Basilarchia a. arthemis) 29
Red Spotted Purple (B. arthemis astyanax) 4
The Viceroy (Basilarchia archippus) 5
Pearly eye (Enodia anthedon) 15
Little wood satyr (Megisto cymela) 176
Inornate ringlet (Coenonympha inornata) 79
Wood nymph (Cercyonis pegala) 106
Monarch (Danaus plexippus) 78
Silver spotted skipper (Epargyreus clarus) 28
Northern cloudwing (Thorybes pylades) 22
Dreamy duskywing (Erynnis icelus) 2
Juvenal’s duskywing (E. juvenalis) 1
Wild Indigo duskywing (E. baptisiae) 1
Least skipper (Anchoxyopa numitor) 2
European skipper (Thymelicus lineola) 3,433
Peck’s skipper (Polites peckius) 3
Tawny-edged skipper (Polites themistocles) 69
Crossline skipper (Polites origenes) 6
Long dash (Polites mystic) 37
N. broken dash (Wallengrenia egeremet) 11
Little glasswing (Pompeius egeremet) 7
Delaware skipper (Atrytone logan) 1

Hobomok skipper (Poanes hobomok) 45
Dun skipper (Euphylves vestris) 17
Other An undetermined Lady 1

Total 44 species 5,494 specimens

Participants:
Tom Mason, Judith Nancekivell, Birk Hodder, Charles Heller, Katherine Parrish, Carol Sellers, Bob Yukich, Karen Yukich, John Stirrat, Jim Fairchild, Steve LaForest, Glenn Richardson, Carolyn King, Barry Harrison, James Kamstra, Julia Varrela, Siglinde Van Dergrinten, Bill Crowley, Andrew Horvath, Leon Schlichter

July 23

HIGH PARK MOTHS
Leaders: Dave Beadle, Tom Mason
Report by Carol Sellers

It didn’t look like a promising evening for a moth night but the rain ended late in the afternoon. A group of about 20 adults and children listened to Tom Mason’s introductory talk on moths before heading to the sheets to check out the moths there.

A total of 79 species were caught and identified including 3 Underwings: Girlfriend (1), Charming (1) and Ilia (1). By far the most common moth was the Armyworm with 50 individuals. Photographs of the outing appeared in the local paper, SNAP. An orb-weaving spider added interest by building a new web as we watched.

Many thanks to Dave Beadle for his unfailing ability to identify even the smallest of moths and to the High Park Community Advisory Council who co-sponsor the outing.

List of Most Common Moths

Pseudaletia unipuncta Armyworm Moth 51
Acleris forskaleana 35
Dichomeris flavocostella 12
Lamantria dispar Gypsy Moth 12
Crambus agitellus 10
Idia aemula Common Idia 9
Leucania multilinea Many-lined Wainscot 9
Archips packardiana 8
Scoparia limboundana Large Lace Border 8
Metzerina lappella 6
Aristotelia roseosuffusella 6
Chrysoptechia topiaria 6
Anagapha falcifera Celery Looper Moth 6
Euxoa tessellata Tessellate Dart 6
Ypsolopa dentella Honeysuckle Moth 5
Urola nivalis 5
An impressive number of moths were identified at Walsingham from July 25 to July 27. Most abundant was the Armyworm Moth (150 individuals) but there were also good numbers of Banded Tussock Moths (60 individuals) and Lesser Maple Spanworm moths (40 individuals).

Large showy species included the Virgin Tiger Moth (14), Small Eyed Sphinx (10), Big Poplar Sphinx (6), Five Spotted Hawkmoth (7), Pandorus Sphinx (5), Blinded Sphinx (4), Hog Sphinx (4), Girlfriend Underwing (4), Twin spotted Sphinx (3), Ultronis Underwing (3), Laurel Sphinx (2) and Carolina Sphinx (1).

Once again, thanks to Dave Beadle for setting up his equipment and identifying the moths.

List of Most Common Moths

<table>
<thead>
<tr>
<th>Moth Name</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudaletia unipuncta</td>
<td>150</td>
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<tr>
<td>Halysidota tessellaris</td>
<td>60</td>
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<tr>
<td>Itame pustularia</td>
<td>40</td>
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<tr>
<td>Chrysoteuchia topiaria</td>
<td>30</td>
</tr>
<tr>
<td>Scopula limboundata</td>
<td>30</td>
</tr>
<tr>
<td>Lymantria dispar</td>
<td>30</td>
</tr>
<tr>
<td>Udea rubrigalis</td>
<td>26</td>
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<tr>
<td>Microcrambus elegans</td>
<td>26</td>
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<tr>
<td>Dolichomia olinalis</td>
<td>25</td>
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<tr>
<td>Eudryas grata</td>
<td>25</td>
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<tr>
<td>Phalaenostola laientioides</td>
<td>21</td>
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<tr>
<td>Zanclognatha ochreipennis</td>
<td>19</td>
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<tr>
<td>Proxenus miranda Miranda Moth</td>
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<tr>
<td>Herpetogramma pertextalis</td>
<td>16</td>
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<tr>
<td>Glphisia septentrionis</td>
<td>16</td>
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<tr>
<td>Ipmorpha pleonecutus</td>
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<td>Epicallima argenticinctella</td>
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<td>Anavitrinelia pampinaria</td>
<td>14</td>
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<tr>
<td>Pero honestaria</td>
<td>14</td>
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<tr>
<td>Clostera apicalis</td>
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<td>Hypoprepia minita</td>
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<tr>
<td>Grammia virguncula</td>
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<tr>
<td>Phalaenopha pyrampusalis</td>
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<td>Plathypena scabra</td>
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<td>Noctua pronuba</td>
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<td>Chlorochlamys chloroleucaria</td>
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<td>Datana perspicua</td>
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<td>Phalaenostola metoniatis</td>
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<td>Lascoria ambigualis</td>
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<td>Croesia forskaleana</td>
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<td>Paonias myops</td>
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<tr>
<td>Orgyia leucostigma</td>
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<td>Hypona humuli</td>
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<td>Faronta rubripennis</td>
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<td>Grammia arge</td>
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<td>Lithacodia carneola</td>
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<tr>
<td>Caloptilia blandella</td>
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<td>Caloptilia superbifrontella</td>
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<td>Decantha boreasella</td>
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<td>Argyrotaenia velutinana</td>
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<td>Eupithecia miserulata</td>
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<td>Macrurocampia marthesia</td>
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<td>Crambidia pallida</td>
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<td>Idia aemula</td>
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<td>Spilosoma virginicum</td>
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<td>Caenurgina erechtea</td>
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<td>Agrotis ipsilon</td>
<td>6</td>
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<td>Urola nivalis</td>
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<td>nepyta canosaria</td>
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<td>Pachysphinx modesta</td>
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<td>Cisseps fulvicollis</td>
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<td>Cosmia calami</td>
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<td>Leucania commoides</td>
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<td>Agrotis psilina</td>
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<td>Lipocosmodes fuliginosus</td>
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<td>Odontosia elegans</td>
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<td>Schizura unicorns</td>
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<td>Hyphantrea cunea</td>
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<tr>
<td>Autographa precationalis</td>
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<td>Baileya australis</td>
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<tr>
<td>Panthea furcilla</td>
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<tr>
<td>Aluphia octomaculata</td>
<td>5</td>
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<tr>
<td>Amphhipoea velata</td>
<td>5</td>
</tr>
<tr>
<td>Amphhipoea americana</td>
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</tbody>
</table>

7 November 2008
THE DEMISE OF THE GREEN DRAKE MAYFLY: WHAT IT TELLS US ABOUT THE HEALTH OF S. ONTARIO TROUT STREAMS
Henry Frania

Henry is an Entomological Research Associate at the ROM and a consultant in environmental monitoring of fresh waters. He had the bad luck of presenting to us on the day of the wildcat TTC strike. So the audience was sparse but he gave a lively and informative presentation anyhow. He had even brought in specimens for us to view. He had collected live mayfly nymphs with colourful names like Gordon Quill and Pink Cahill and transferred them to shallow pans of aerated water.

Henry started his studies of the Green Drake, *Ephemera guttalata* Pictet, because of observations by his fly-fishing friends. They had been noticing the decline and later disappearance of the Green Drake from much of the Credit River. He had had the bad luck of presenting to us on the day of the wildcat TTC strike. So the audience was sparse but he gave a lively and informative presentation anyhow. He had even brought in specimens for us to view. He had collected live mayfly nymphs with colourful names like Gordon Quill and Pink Cahill and transferred them to shallow pans of aerated water.

Henry described some of the studies he has done since the fall of 2004:
- timing the rate of emergence of subadults
- transplanting nymphs from one branch of the Credit to another
- transplanting gravel, washed and unwashed, from different branches to nymphs in aquaria
- comparing the pathology of healthy and sick nymphs

He gave us some background information on the Green Drake. It is an environmentally-sensitive burrowing mayfly. Burrowing mayflies have mandibular tusks, points on the head, expanded front leg tibia and gills on the basal segment of the abdomen. They bury themselves in loose gravel and continuously move their gills to create a current in the burrow. They feed on detritus. They are very primitive animals: they lay 3-4000 eggs and go through 30 or more instars to reach maturity in two years. Subadults emerge at the end of May with opaque wings, fly into trees and then moult the following day into clear-winged adults. The males dance in masses to attract mates.

List of Spiders

Theridiidae
- *Theridion sp.*
- *Tindarren sp.*
- *Neriene sp.*
- *Araneus marmoreus*
- *Araneus trifolium*
- *Larinia borealis*
- *Larinoidea cornutus*
- *Larinoidea sclopetarius*
- *Pachygnatha sp.*
- *Agelenopsis sp.*
- *Gnaphosa sp.*
- *Clubiona sp.*
- *Clubiona riparia*

Philodromidae
- *Thanatus vulgaris*
- *Tibellus sp.*
- *Peregrina galathea*
- *Dictynid sp.*

Salticidae

Agelenidae

Gnaphosidae

Clubionidae

Tetragnathidae

Misumena vatia
*Xysticus triguttatum*
*Thanatus vulgaris*
*Tibellus sp.*
*Peregrina galathea*
*Dictynid sp.*

August 9
SPIDERS OF BLACKWATER/BEAVER CREEK
Leader: Tom Mason
Report by: Tom Mason

While the day began partly sunny, our annual Spider Walk was cut short by heavy afternoon rain.

Interesting finds this year is the first finding of the genus Larinia. There may have been two species observed in the three specimens seen. Also I believe that this is the first sighting of *Araneus marmoreus* in our walks. This was a beautiful large specimen nestled in a white cedar.

In all eleven families were observed. This would have been increased if the weather had not slowed activity down in the afternoon.

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Meeting Reports

Saturday April 26, 2008
THE DEMISE OF THE GREEN DRAKE MAYFLY: WHAT IT TELLS US ABOUT THE HEALTH OF S. ONTARIO TROUT STREAMS
Henry Frania

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Clubionidae

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He studied the Credit, Beaver and Rocky Saugeen Rivers, formerly considered to be pristine water. He found that the Green

Bronze Copper (*Lycaena hyllus*) adult male, seen at the beginning of the Blackwater/Beaver Creek Spider Walk. Photo taken August 9, 2008 by Glenn Richardson
Drake range had seriously contracted over the years. Atrophied muscle tissue and destroyed gut-lining in sick nymphs strongly suggested the presence of toxins in the rivers. This is likely due to contamination of the river bottom by discharges from upstream communities like Orangeville.

Although this was not a good-news story for either the Green Drake or the rivers, it was certainly an interesting and informative presentation.

Saturday September 27, 2008
MEMBER'S MEETING

Bob Yukich started the meeting by observing that it was a great year for rare butterflies. He showed his lovely macro photos of several, including the Marine Blue, Karner Blue and several Hairstreaks. He also showed the eggs laid in his garden by a Pipevine Swallowtail. Unfortunately the eggs were destroyed by a predator before hatching.

Kerry Jarvis showed moth photos taken at an Ecolodge in Ecuador. He also had photos of insects from McGregor and Wheatley Provincial parks and from his backyard. He had taken a great shot of mayflies stuck in a spider web and also of a walking stick.

Glenn Richardson showed part of the Monarch show he had presented at this year’s Mariposa festival.

Les Kohalmi had brought in containers with live caterpillars that he was rearing: Cecropia, Promethea, Columbia and Giant Swallowtail.

Great Spangled Fritillary (Speyeria cybele) newly hatched larvae hibernating. Larvae hatched from an egg found Sept. 1, 2008, Photo by Glenn Richardson

Fourteenth Annual Toronto Centre Butterfly Count
July 12th, 2008

By: John Carley

On Saturday, July 12, 2008, the Fourteenth Annual Butterfly Count for the Toronto Centre count circle took place. Twenty-eight counters, in nine parties, counted butterflies in the 15 mile diameter circle centred on the intersection of Dundas Street West and Bloor Street West, Toronto.

After last year’s record low count due to inclement weather, this year’s count was a knockout!

This year’s count saw us out on a misty, mostly overcast day, with temperatures ranging from 20ºC to 26 ºC later in the day. Generally, the rain between 4 and 4:30 pm ended the fieldwork. The routes that were counted included the Leslie Street Spit, the Toronto Islands, Midtown ravines, the Don River, High Park, the Humber River, the Lambton prairie, Downsview Airport, Marie Curtis Park, and other parklands, ravines, and so-called “wastelands” in the city.

In total, we counted 3,100 individual butterflies, of 43 species. This species total is the second highest (highest count is 44 species recorded in 2004 and 2006); the 3,100 species seen is the fifth highest overall total (highest 6,069 was in year two, 1996).

Stunningly, the count produced a record of a Marine Blue. The female butterfly was netted at Marie Curtis Park by Carolyn King and Steve LaForest, and brought in a container to the after-count party, where all examined it. Later, it was released back at its point of capture. [The next day, six of us were fortunate enough to discover and photograph two additional Marine Blues at the same location!] Undoubtedly, this is the major event of 2008 butterflying: prior to this, Marine Blues have only been recorded three times in Canada, once in Saskatchewan, in 1993 and 1999 at Point Pelee National Park. You’ve probably all seen the Toronto Star article (attached). Conjecture reigns supreme as to why and how these butterflies arrived here.

In any other year, the Checkered White found by the Islands counters would have reined supreme: however, it takes second place to the Marine Blue. Even the discovery of Pipevine Swallowtail eggs at Bob and Karen Yukich’s garden is of major significance for the Toronto area.

The Meadow Fritillary, seen at the Downsview route, is our second in three years. The Hickory Hairstreak, seen on the Don River route, is an excellent sighting, as was the single Edwards’ Hairstreak. Other singles included a Viceroy at the Spit, Northern Crescent, Wild Indigo Dusky Wing, and Peck’s Skipper. The high totals were European Skipper at 1,007 and Cabbage White at 980. Obvious misses included Northern Pearly-Eye, Striped Hairstreak, American Lady, and Painted Lady.
The 2009 Count date is set for Saturday, July 11. Those interested in participating in the Fifteenth Annual Toronto Centre Butterfly Count should contact the writer at 218 Humbercrest Blvd., Toronto, M6S 4L3, (416) 766-1330 or carley.la@sympatico.ca.


### Fourteenth Annual Toronto Centre Butterfly Count July 12th, 2008

<table>
<thead>
<tr>
<th>Butterfly Species</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Swallowtail - <em>Papilio polyxenes</em></td>
<td>11</td>
</tr>
<tr>
<td>Eastern Tiger Swallowtail - <em>Papilio glaucus</em></td>
<td>29</td>
</tr>
<tr>
<td>Checkered White – <em>Pontia protodice</em></td>
<td>1</td>
</tr>
<tr>
<td>Cabbage White - <em>Pieris rapae</em></td>
<td>980</td>
</tr>
<tr>
<td>Clouded Sulphur - <em>Colias philodice</em></td>
<td>67</td>
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<tr>
<td>Orange Sulphur - <em>Colias eurytheme</em></td>
<td>40</td>
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<tr>
<td>Coral Hairstreak - <em>Satyrium titus</em></td>
<td>9</td>
</tr>
<tr>
<td>Acadian Hairstreak - <em>Satyrium acadica</em></td>
<td>69</td>
</tr>
<tr>
<td>Edwards’ Hairstreak - <em>Satyrium edwardsii</em></td>
<td>1</td>
</tr>
<tr>
<td>Banded Hairstreak - <em>Satyrium calanus</em></td>
<td>11</td>
</tr>
<tr>
<td>Hickory Hairstreak - <em>Satyrium caryaevorum</em></td>
<td>1</td>
</tr>
<tr>
<td>Marine Blue – <em>Leptotes marina</em></td>
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</tr>
<tr>
<td>Eastern Tailed-Blue - <em>Everes comyntas</em></td>
<td>42</td>
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<tr>
<td>Summer Azure - <em>Celastrina neglecta</em></td>
<td>45</td>
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<tr>
<td>Great Spangled Fritillary - <em>Speyeria cybele</em></td>
<td>3</td>
</tr>
<tr>
<td>Meadow Fritillary - <em>Boloria bellona</em></td>
<td>1</td>
</tr>
<tr>
<td>Silvery Checkerspot - <em>Chlosyne nyctelis</em></td>
<td>3</td>
</tr>
<tr>
<td>Pearl Crescent - <em>Phyciodes tharos</em></td>
<td>1</td>
</tr>
<tr>
<td>Northern Crescent – <em>Phyciodes cocya</em></td>
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</tr>
<tr>
<td>Baltimore Checkerspot – <em>Euphydryas phaeton</em></td>
<td>12</td>
</tr>
<tr>
<td>Question Mark - <em>Polygonia interrogationis</em></td>
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<tr>
<td>Eastern Comma – <em>Polygonia comma</em></td>
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<tr>
<td>Compton Tortoishell – <em>Nymphalis van-album</em></td>
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<tr>
<td>Mourning Cloak - <em>Nymphalis antiopa</em></td>
<td>42</td>
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<tr>
<td>Red Admiral - <em>Vanessa atalanta</em></td>
<td>7</td>
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<tr>
<td>Limenitis arthemis</td>
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<tr>
<td>White Admiral (1)</td>
<td></td>
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<tr>
<td>Red-spotted Purple (2)</td>
<td>3</td>
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<tr>
<td>Viceroy – <em>Limenitis archippus</em></td>
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<tr>
<td>Little Wood-Satyr - <em>Megisto cymela</em></td>
<td>34</td>
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<tr>
<td>Common Wood-Nymph - <em>Cercyonis pegala</em></td>
<td>220</td>
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<tr>
<td>Monarch - <em>Danaus plexippus</em></td>
<td>152</td>
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<tr>
<td>Silver-spotted Skipper - <em>Eparhyreus clarus</em></td>
<td>25</td>
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<tr>
<td>Northern Cloudywing - <em>Thorybes pylades</em></td>
<td>55</td>
</tr>
<tr>
<td>Wild Indigo Duskywing – <em>Erynnis baptisiae</em></td>
<td>1</td>
</tr>
<tr>
<td>Least Skipper - <em>Anctyloxypha numitor</em></td>
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</tr>
<tr>
<td>European Skipper - <em>Thymelicus lineola</em></td>
<td>1007</td>
</tr>
<tr>
<td>Peck’s Skipper – <em>Polites peckius</em></td>
<td>1</td>
</tr>
<tr>
<td>Tawny-edged Skipper - <em>Polites themistocles</em></td>
<td>5</td>
</tr>
</tbody>
</table>

Total: 43 species, 3100 individuals.

Also: Pipevine Swallowtail (Battus philenor) eggs were found at one garden within the count circle.

Marine Blue (*Leptotes marina*) Found at Marie Curtis Park, July 12, 2008, by Carolyn King and Steve LaForest

Photo by Paul Scott

Marine Blue (*Leptotes marina*) “Found Again” at Marie Curtis Park, July 13, 2008. Photo by Bob Yukich
Central Park in the Dark: More Mysteries of Urban Wildlife
Marie Winn
(New York: Farrar, Strauss and Giroux, 2008)
305 pages. $18.

Central Park in New York City is not exactly the first place that comes to mind as a place to study nature at night. Surely Central Park must be a place of low biological diversity and high crime, so why go there? Marie Winn’s answer is fourfold: studying nature in one’s own backyard can be fun; involving a large number of people who would not otherwise think of nature is a worthy goal; a large city provides the possibility of drawing upon a wide range of experts; and it is possible to assemble a group quickly when some noteworthy event happens. The author has many stories to tell which connect these four aspects of nature at night in Central Park. It’s a little like the TEA’s annual moth night in High Park, but every night of the year.

The author is a great storyteller, and 3 of the 12 chapters in the book (pp. 61-120) are about moths. The perspective is of a birder (perhaps tongue in cheek) discovering moths: “We were in that tiresome lull between spring migration and fall migration otherwise known as summer, and….we thought a night expedition might be refreshing (p. 61).” So her small group of birders contacts an entomologist from the American Museum of Natural History. He brings a blacklight and a sheet, and the Central Park “Mothers” (rhymes with authors) group is launched on that night. They discover a “Moth Tree” – a tree with an alcoholic slime flux disease that causes it to exude sap and naturally attract moths. The wide variety of underwing moths fascinates them, and the difficulties of identifying them are nicely described. Soon, winter is no longer the author’s favourite season: “Summer was suddenly transformed into a time of delight – so what if it was hot as hell. Now it was winter I dreaded – a mothless desert.” With sparkling prose like this, the pages move along quickly. I won’t spoil the surprises in the book, except to say that I wish I could have been the one called to come quickly and see one particular moth event she describes.

One of the nicest aspects of the book for me was that the focus was on the human characters as well as the natural aspects. Her friends really come to life, as so I find myself drawn to engrossing stories about hawks and owls as well as insects. The book is over all too soon.

Iridescences: The Physical Colors of Insects
Serge Berthier
(Paris: Springer, 2007)
160 pages. $139.

“Iridescence” is defined as the change in hue of the colour of an object as the observer changes viewing position. Iridescent colours, such as those in morpho butterflies, are far more striking and beautiful than the much more common pigment colours observed in most insects. I knew this much from reading a short introduction to this topic on the web (http://newton.ex.ac.uk/research/emag/butterflies/iridescence_in_nature.html), and I hoped to learn more from this book. However, I found that I could understand only about the first 25 pages, which are mostly about the biological role of colour and the basic structure of butterfly wings. The rest of the book appears to require university-level training in physics, which is perhaps not surprising because the book is written by a professor of physics who specializes in optics. However, it is fun browsing through the book since there are many colour photographs of butterflies, including close-up photos of their scales taken through a microscope. The short (9-page) chapter on beetles is also of interest. Overall, the book is worth checking out of the library, but not worth the high price of purchase ($139).

By Alan Macnaughton

Kaufman Field Guide to Insects of North America
2007, $24.95

Kaufman Field Guide to Butterflies of North America
2003, $26.95

For more information, visit: http://www.kknature.com/

Kenn Kaufman has made his mark in the field guide categories. His insect and butterfly guides follow his successful formula of using colour photographs where the subject (fly, butterfly, beetle, etc.) has been highlighted out from the background. This allows the reader to see a clean, clear image of the critter with no background distractions. The images are accompanied by a shadow image of the critter to let the reader know its actual size. The format for the insect book has one page that profiles several insects accompanied with one page of text that briefly discusses the insect. The butterfly guide includes range maps and a more in depth description. Included in the description is a discussion of the larval food plant, however, there are only a few images of
Where Are The Monarchs?

"Where are the Monarchs" has been a common question asked over the past few months or so, and Dr. Orley "Chip" Taylor offers the following explanation:

The vast majority of reports indicate that the Monarch population appears to be much lower than normal (This was somewhat confirmed by the number of Monarchs counted on various 4th of July butterfly counts). Overwintering mortality in Mexico last winter appeared to be normal at all locations except Cerro Pelon. Migration into Texas appeared to be good, although a bit delayed. March temperatures in Texas were neither too hot nor too cold. May – the moving month for the first new generation of monarchs – was cold throughout the entire northern breeding range. It was also a period of frequent storms and heavy rains, particularly during the second half of May. Early June also saw heavy rains, especially in the east, north-central and central portions of the United States (and southern Ontario). These cold conditions may have limited dispersal, reduced egg laying and increased mortality of adults.

Dr. Taylor notes that this was not a good year for butterflies in general. Moist summer conditions may have resulted in the survival of, or increase in population of, parasites and predators normally killed off to some extent by hot dry summer conditions. A large number of milkweed plants examined appeared to host a wide variety of Monarch predators (spiders, earwigs, lady bird beetles, etc).

Dr. Taylor predicts that the overwintering population in Mexico will be lower than the 4.61 hectares measured last year. He hopes his predictions are overly pessimistic.

Every now and then a field guide makes a huge impact because it adds more value than other similar books in the marketplace. One such book is the Field Guide to Insects and Spiders of North America by Arthur Evans. This colourful guide is both informative and entertaining. Evans devotes the first fifty pages to a thorough overview of insect anatomy, the natural history of insects, habitat challenges, how to find insects and concludes the book with information on photographing and collecting insects and tips on insect gardening and rearing insects in captivity. In addition, Evans includes over 50 pages on non-insects, including spiders, millipedes, centipedes, ticks, mites and scorpions. Descriptions of insects are concise and easy to read. The colourful quality images make in the field identification a snap. Images include text that provides hints for quick identification. The lepidoptera (butterflies and moths) section is visually pleasing as most species include an image of the caterpillar and the butterfly with wings open and closed. The photographs and line drawings, scattered throughout the guide, aid the reader in gaining a better understanding and enhancing their knowledge of the insect. Throughout the busy insect season this spring, summer and fall, the one book that I turned to first for identification and information was the Field Guide to Insects and Spiders of North America. A friend of mine asked me to identify a critter that she found in Arizona. Sure enough, the Field Guide to Insects and Spiders of North America was up to the task and I was easily able to identify the image as a Pale Windsrscorpion. If I had to choose one insect field guide, my overwhelming choice would be Arthur Evans’ Field Guide to Insects and Spiders of North America.

By Kerry Jarvis
Ontario Insects

TEA Activities

Financial Report

The TEA continues be in healthy financial shape. At the end of our fiscal year (July 31, 2008), we had assets of $18,981, broken down as follows:

- Membership Account $1,435
- Publications Account $7,146
- GIC and Accrued Interest $9,500

Inventory of Books and Publications $900 (estimate)

Membership stands at about 57 members. For interest, we checked on past membership numbers using an electronic search of past Ontario Insects issues posted on the TEA website (see accompanying article). We have been up and down over the years, with 50 members in 1994, 158 in 1997, 145 in 2001, and 57 now.

Chris Rickard and Alan Macnaughton

TEA Publications Made More Accessible

Did you know that the TEA has been publishing Seasonal Summaries of Lepidoptera for more than 40 years, and Ontario Insects has been published for 14 years? All of this effort has created a vast amount of information, but access has been limited since few of us has anything like a complete set.

Organizations like the Michigan Entomological Society and the Lepidopterists Society have responded to this issue by putting pdf files of past publications on their websites. The TEA has now done the same. Over the summer, issues supplied by Quimby Hess, Alan Hanks and Carol Sellers have been scanned, run through character-recognition software, and posted as pdf files on the TEA website on the Publications page.

The posted material includes 2,300 pages of Seasonal Summaries from 1969 to 2002 and 650 pages of issues of Ontario Insects from 1994 to 2003. More recent years are kept off the website in order to protect our ability to raise funds through sales of these publications. Years will be added one at a time as we produce new issues of these publications.

The files are available in both big and small forms to accommodate users with different download speeds.

For the Odonata seasonal summary (Ontario Odonata), only the two years which are out of print are posted on the website.

Alan Macnaughton

Do you know?

All donations to the TEA are tax-creditable (a receipt is issued).

Any amount is welcome but the following suggested amounts support these TEA initiatives:

- $300: W.J.D.Eberlie Research Travel Award
- $50: Help to sponsor the printing of Ontario Odonata
- $34: A copy of Damselflies and Dragonflies (Odonata) of Ontario: Resource Guide and Annotated List can be donated to a university library
- $25: A copy of Ontario Odonata (annual) can be donated to a university library
- $15: A copy of Ontario Lepidoptera (annual) can be donated to a university library

Note: The University of Guelph library has indicated their interest in receiving TEA publications. If you have contacts at other universities, we would be happy to pursue those options as well.

Please send your tax creditable donation to: Chris Rickard, Treasurer, TEA, 1606 Crediton Parkway, Mississauga, Ontario L5G 3X3

Give us your ideas!

Programs: Carol Sellers is the Programs Coordinator and welcomes any ideas for speakers for the Oct - Apr meetings. Who would you like to hear from? Please write to her at: programs@ontarioinsects.org.

Field Trips: Steve LaForest and Carolyn King are the Field Trips Coordinators and also welcome ideas for places to go and leaders. Do you have a favorite spot to share with others or is there somewhere you’d like to go? Please write to them at: fieldtrips@ontarioinsects.org.
Notice to Contributors

Who Can Contribute:
Observations, articles, etc., to be published in Ontario Insects, are welcome from members of the Toronto Entomologists' Association, or from anyone interested in insects. There are no page charges. Classified ads may be placed by non-members at the rates outlined in the classified section.

Types of Submissions:
Contributions to Ontario Insects may address any subject or aspect related to entomological study. Submissions may be made in the following categories:

Research papers - may include original research or scholarly reviews following an appropriate journal format

Feature articles - informative & entertaining, format open to the author’s choice

Notes or short communications - may be observations, interpretive, historical, review or experimental studies which do not fall under the purview of research papers

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Original artwork, puzzles - art should be clear, easily reproduced in black & white

Guest columns in Entomophilia - any subject related to the love of insects

Opinions, Letters, Queries - anything entomological under 500 words that may be of interest to the membership

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All submissions are encouraged, however, submissions of articles and/or artwork on disk or email are preferred. If articles are submitted via email, formats in Microsoft Word (.DOC) or rich text format (.RTF) are preferred. Please send all submissions and questions to the editor (see inside cover for address). Offprints are available at cost + 10% + postage.

Flea Market

Northern Crescent (Phyciodes cocyta), eggs on Panicled Aster (Aster simplex). Photo taken June 23, 2008 by TEA President Glenn Richardson.

I am reducing my Entomological Library
Many fine books available at good prices.

Write or e-mail for a list by printed copy or Excel file.

Alan J. Hanks, 34 Seaton Drive, Aurora, Ontario L4G 2K
alan.hanks@sympatico.ca

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ITEMS FOR SALE THROUGH THE TEA

Books: reproductions of out-of-print books

The Odonata of Canada & Alaska (3 volumes) by E.M. Walker
$185 Can ($170 for TEA members who pick it up); In USA: $160 US surface; $170 US airmail

The Cicindelidae of Canada (tiger beetles) by J.B. Wallis (1961) with colour plates
$28 Can ($23 for TEA members who pick it up); In USA: $33 US surface; $36 US airmail

The North American Dragonflies of the Genus Aeshna by E.M. Walker (1921) with colour plates
$115 Can ($105 for TEA members who pick it up); In USA: $125 US surface; $128 US airmail

The North American Dragonflies of the Genus Somatochlora by E.M. Walker (1925)
$60 Can ($50 for TEA members who pick it up); In USA: $70 US surface; $73 US airmail

Books: Other publishers

Damselflies and Dragonflies (Odonata) of Ontario: Resource Guide and Annotated List
By P.M. Catling and V.R. Brownell 2000. Annotated list of 168 species of odonata in Ontario including conservation status, flight period, habitat, distribution and identification. $40 Can; In USA: $40 US

Books: T.E.A. publications

ISBN: 0921631111 $25 Can ($20 for TEA members who pick it up); In USA: $25 US

Ontario Insects – T.E.A. Newsjournal
Back Issues: $5 Can each; In USA: $5 US; Subscription: $25 Can; In USA: $25 US

Annual Ontario Lepidoptera Summaries (for 1987, ’88, ’93, ’95 to present)
$10 each; In USA: $10 US surface; $15 US airmail; (free with T.E.A. membership)

Ontario Odonata: (annual summary or Odonata including articles, notes, recent literature and news)
Volume 1 (16 articles plus summary of records). Articles cover topics such as conservation status ranks, natural history, migration, lists and records, and an illustrated key to the mature nymphs and exuviae of eastern Canadian Stylurus. Cost: $25 Can; In USA/overseas, $25 U.S.

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Volume 7 (6 articles plus summary). Also includes news, reviews and recent literature, Cost: $25 Can; In USA/overseas, $28 U.S.

Checklist of the Butterflies of the Toronto Region: 140 years of history (Third edition, 2007)
Includes flight seasons. Compiled by Barry Harrison. Cost: $2.00 Can; In USA/overseas $2.50 U.S.

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