

# ONTARIO INSECTS

THE NEWSJOURNAL OF THE TORONTO ENTOMOLOGISTS' ASSOCIATION



VOLUME 8, NUMBER 2

JANUARY 2003

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Front Cover Photograph: Female Lake Huron Locust (*Trimerotropis huronia*). Photo taken on August 1, 2002 at Carter Bay, Manitoulin Island by Steve Marshall.

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## DEADLINE INFORMATION - Members Please Note:

The deadline for submissions to the May 2003 issue of Ontario Insects is April 5. Late submissions may be added at the discretion of the Editor after that date. If there are any questions or concerns regarding submissions, please feel free to contact Colin Jones at the address below.

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Submissions to: Colin D. Jones, Editor of Ontario Insects, Box 182, Lakefield, ON, K0L 2H0, [naturalist@algonquinpark.on.ca](mailto:naturalist@algonquinpark.on.ca), (705) 652-5004

TEA members are welcome to submit any entomologically relevant materials. Please see the inside back cover for Notice to Contributors for more information. Deadlines for submission are 1 month prior to publication.

For general inquiries about the TEA contact: Nancy van der Poorten, President, TEA, 164 Morse St. Toronto, ON, M4M 2P8, [nmg.vanderpoorten@sympatico.ca](mailto:nmg.vanderpoorten@sympatico.ca), (416) 466-9013

## 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 Alan Hanks, Treasurer, 34 Seaton Drive, Aurora, Ontario, Canada, L4G 2K1. (905) 727-6993.

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

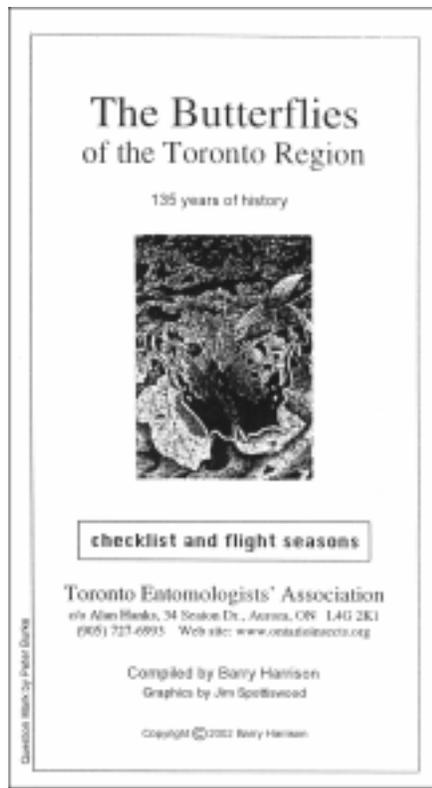
The Butterflies of the Toronto Region - second edition

This new checklist, compiled by T.E.A. member Barry Harrison, features all of the butterfly species recorded within a 30 mile (50 km) radius of the Royal Ontario Museum. It features the status of each species (e.g. common, rare, accidental, etc.) as well as the flight period. For most species, the flight period illustrates the peak season, the shoulder season, and extreme dates.

It sells for \$2.50 (includes postage) or \$2.00 for T.E.A. members who pick a copy up at the monthly meetings.

To order a copy, contact:

Alan Hanks, Treasurer  
34 Seaton Drive  
Aurora, Ontario, L4G 2K1  
Telephone: 905-727-6993  
email: a.hanks@aci.on.ca



Third Annual Great Lakes Odonata Meeting July 23-27, 2003

The Great Lakes Odonata Meeting is an opportunity for Odonata enthusiasts in the Great Lakes Region to meet and share information on dragonflies and damselflies.

This year's meeting will be based out of Wolf Ridge Environmental Learning Center located atop the Sawtooth Mountains in northern Minnesota. Accommodations will be provided by Wolf Ridge and will include comfortable dormitory housing and meals either in the Dining Hall or provided by Wolf Ridge in the field. Families are invited to come along and either use Wolf Ridge as a base from which to explore the beautiful North Shore, join us in the field or attend classes at Wolf Ridge.

Field trips to some of the region's most beautiful (and Odonatically interesting) waters will be visited, including a day trip paddling in the Boundary Waters Canoe Area Wilderness.

Cost: US\$205 per person, which includes all meals, four nights of housing, linens, classes and equipment at Wolf Ridge.

For more information call Kurt Mead at 218-353-7378

Register online at:  
[www.wolf-ridge.org](http://www.wolf-ridge.org)  
or by calling:  
800-523-2733 or 218-353-7414

Annual Student Symposium -  
Final Call for Titles

Saturday, March 22, 2002, 1 pm at University of Toronto

The T.E.A. is pleased to invite postdoctoral fellows, graduate students or senior undergraduate students to submit titles (include name, address, supervisor name, email address and phone number) for 10 minute talks or posters at the Annual Student Symposium. All are welcome to attend the symposium.

Please e-mail either of the following people if you are interested in participating or would like more information. Provisional titles will be published in Ontario Insects. Final submitted and

edited abstracts will also be published in Ontario Insects. Longer reports are optional. We look forward to your participation and attendance at the symposium. Please pass this information on to anyone you now who might be interested.

Nancy van der Poorten, President T.E.A.  
email: [nmg.vanderpoorten@sympatico.ca](mailto:nmg.vanderpoorten@sympatico.ca)  
Peter Hallett, Symposium Organizer:  
email: [peter.hallett@utoronto.ca](mailto:peter.hallett@utoronto.ca)

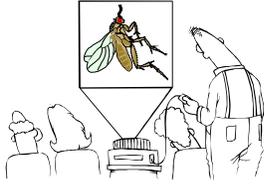
Award for Original Research into Ontario Insects

The T.E.A. announces that it is now taking applications for the W. John D. Eberlie Field Research Travel Award.

The T.E.A. is offering a research travel award of \$300 to assist graduate or undergraduate students conducting original field research into Ontario insects. The award is intended as a travel grant to defray costs of travel to field sites used for research. The award will be made on the basis of merit and quality. Applicants must be members of the Toronto Entomologists' Association and a graduate or undergraduate student at an Ontario university. To apply, submit a properly completed application form (available from the TEA) postmarked no later than March 25, 2003.

Membership in the T.E.A. (\$10 per year for students) gives the following benefits: subscription to Ontario Insects (published 3x per year); opportunity to submit articles for Ontario Insects; annual summary of Lepidoptera in Ontario; discounts on book sales. The T.E.A. holds monthly meetings from September to April, including a student symposium in March. We run field trips over the summer months.

An application form for the award, or for membership in the TEA may be requested by writing to:  
Nancy van der Poorten  
President TEA  
164 Morse Street  
Toronto, Ontario M4M 2P8  
Telephone: 416-466-9013  
email: [nmg.vanderpoorten@sympatico.ca](mailto:nmg.vanderpoorten@sympatico.ca)



# Upcoming Meetings

Everyone is welcome. Bring a Friend!



Saturday February 22, 2003, 1 p.m.

MARVIN GUNDERMAN

ONTARIO'S COMMON INSECTS CAPTURED ON FILM

Marvin Gunderman is an Instructor and Curator of Entomology in McMaster University's Biology Department. After 27 years of collecting insects (mostly beetles) Marvin has changed from a generalist to a specialist. He spends much of his time devoted to his passion: the tiger beetles. In the last 15 years he has focussed (pun intended) on insect photography in the field. Marvin's illustrated talk is designed to celebrate the beauty of insects and photography.

Saturday, March 22, 2003, 1 p.m.

ANNUAL T.E.A. STUDENT SYMPOSIUM

Please note the location: Ramsay Wright Zoology Building, University of Toronto, Room 432

Come to hear the latest research in insects from undergraduate and graduate students at our Ontario universities. Bring a friend and join us for stimulating talks and refreshments. York University is easily accessible by car or by transit. Please note that paid parking is available but please give yourself plenty of time to get to the meeting. For a map and directions, see [www.yorku.ca](http://www.yorku.ca) (York Maps, York Transit)

Saturday April 26, 2003, 1 p.m.

COLIN JONES

DIVERSITY AND ECOLOGY OF ONTARIO'S DRAGONFLIES AND DAMSELFLIES

Colin Jones is a contract biologist with the Ministry of Natural Resources in Peterborough and a lifelong naturalist. He has been studying dragonflies and damselflies since 1993 and along with Paul Catling and Paul Pratt has been responsible for the latest T.E.A. publication - the annual dragonfly and damselfly summary entitled "Ontario Odonata". Colin will speak on the diversity of dragonflies and damselflies found in Ontario, as well as their fascinating life history. He will also speak on how you can contribute to the annual summary and the importance of the data to the conservation of dragonflies and damselflies.

## 2003 FIELD TRIPS:

The May 2003 issue of Ontario Insects will provide a full listing of the field trips scheduled for the 2003 season.

If you have ideas for outings - a location, subject matter, or leader - please pass them along to:

Carol Sellers, Programs and Field Trips Coordinator

Telephone: 416-421-7398

email: [csellerstor@hotmail.com](mailto:csellerstor@hotmail.com)

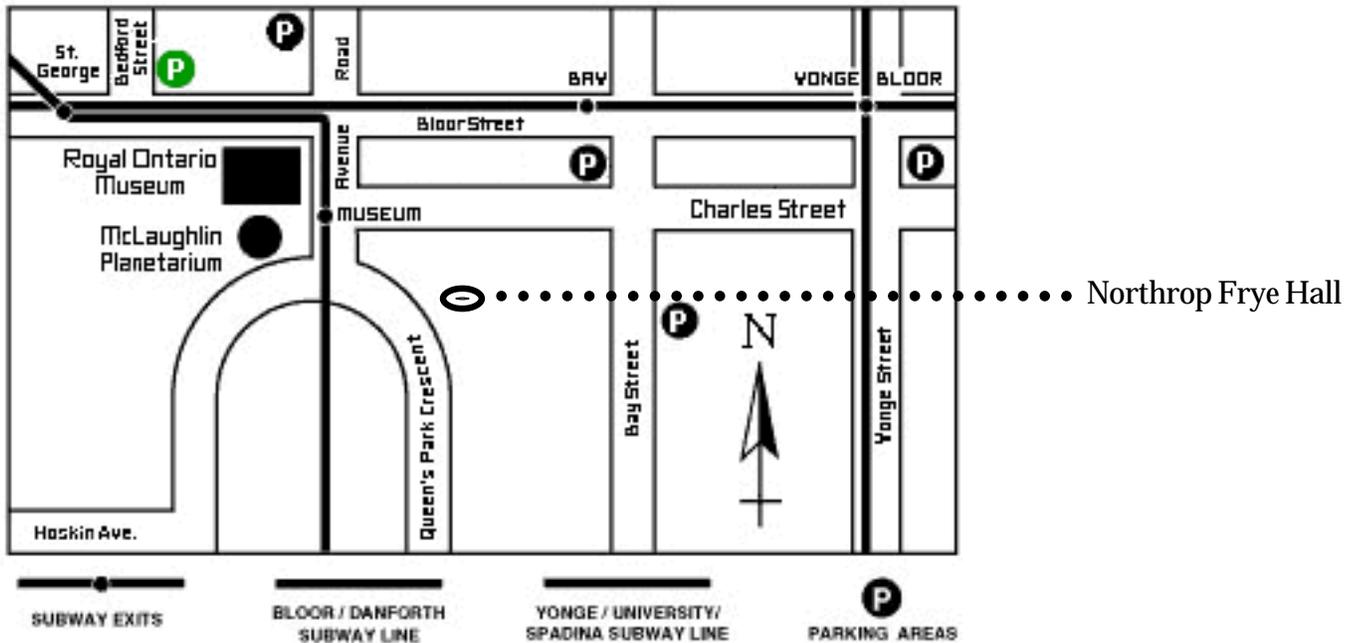
All meetings (except March - see above) are held at:

Northrop Frye Hall Room 119  
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 Alan Hanks at (905) 727-6993

Also check [www.ontarioinsects.org](http://www.ontarioinsects.org)



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 \$5 or more depending on the lot.



# Recent News

submitted by Don Davis



An interpretive panel at the Humber Bay Butterfly Habitat.

## Humber Bay Butterfly Habitat Opened Sept. 24, 2002

The Humber Bay Butterfly Habitat is located in Humber Bay Park East along the shores of Lake Ontario in Toronto's West End. The Habitat is an ecological restoration project intended to provide critical habitat for a variety of butterfly species, by using a variety of preferred host and nectar plants. The habitat consists of three distinct areas: a short grass prairie, a large natural meadow and the "Home Garden" component. These three components of the Humber Bay Butterfly Habitat project incorporate a diversity of native wildflowers, shrubs, trees and grasses known to support a variety of butterfly species throughout their various stages of development.

The Habitat provides linkages to Lake Ontario, coastal wetland habitat, migratory bird and butterfly staging areas, and the valley system of the Humber River and Mimico Creek.

The physical features designs of the

Habitat that support butterflies include: open sunlit areas and heat absorbent surfaces, such as boulders for sunning; wet meadow areas for safe and easy access to drinking water; wind shelters for protection and to allow easy movement throughout the site; and hibernacula, including stonewalls and woodpiles, for overwintering larvae and pupae.

Unlike indoor butterfly conservatories, the Humber Bay Butterfly Habitat is an outdoor garden. By providing the habitat needed for a variety of butterfly species, these creatures can be viewed and enjoyed in a "non-captive" way.

The development of a significant butterfly garden on the western edge of the park is seen as an opportunity to educate the public about unique and endangered habitats and wildlife, and create a large and beautiful habitat for butterflies. It is hoped that the Home Garden component will demonstrate to visitors how to create a backyard garden

to attract common butterfly species.

This writer visited the Humber Bay Butterfly Habitat shortly after its opening, and was pleased to discover that besides the newly planted nectar sources and food plants in the Habitat, the park also contains abundant quantities of goldenrod, New England aster, and other flowering plants, upon which good numbers of migrating monarch butterflies were feeding.

Access to the Habitat and Humber Bay East Park is gained via the entranceway at Lakeshore Blvd. and Park Lawn Road.

## The Ontario Weed Act

With regard to the Ontario Weed Act, it was my understanding from a discussion I had months ago with the Chief Weed Inspector for Ontario, that our Ontario Ministry of Agriculture was planning on changing its policies of enforcement re: the schedule of plants labelled as "noxious weeds". Instead of removing plant species from the schedule, the Act would only apply to those plants within a certain proximity or of concern to agricultural crops.

It is now my understanding, from an article that appeared recently in the Cobourg Daily Star newspaper, that the Ministry has implemented this policy. The article reads as follows:

### "NOXIOUS WEEDS GET A BREAK"

Noxious weeds are getting a growing break under new provincial interpretation of the Weed Control Act

"It's quite an interpretation change," Hamilton Township CAO Peggy Cramp informed Pamilton Township Council. "Before, anywhere poison ivy was

growing you could spray. Now you can only spray in very specific areas on lands close to agriculture or greenhouse uses.”

“The purpose of the Weed Control Act is to protect agricultural and horticultural land from noxious weed,” Bill Ingrata, Director, Crop Technology Dept. of the provincial Ministry of Agriculture and Food has written to all municipalities. “We have also been advised to update our interpretation of horticulture to encompass commercial horticulture only.”

“The act does not refer to the protection of human health as a reason for controlling noxious weeds,” Mr. Ingratta notes. “Therefore, we have decided the Act can’t be used to control noxious weeds, including poison ivy and common ragweed, if they are far enough away from any land used for agricultural or horticultural purposes that they do not interfere with that use.”

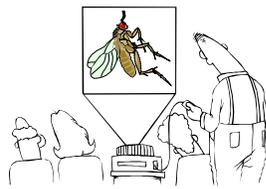
Formerly, municipalities in Ontario also used the Act as a means to force land owners to maintain or tidy up their properties.

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: Alan Hanks, Treasurer, TEA, 34 Seaton Drive, Aurora, Ontario L4G 2K1



# Meeting Reports



## September

TEA general meeting

The first meeting of the season opened with a welcome by the president Nancy van der Poorten. There were 16 members present. The first order of business was elections, which we are obligated to have every two years. The current executive was willing to continue and there were no other nominations. Alan gave a brief financial report (\$10,000 in the book account, \$2000 in the current account, \$8000 in the GIC).

The progress of the second edition of the Ontario Butterfly Atlas was updated: we have applied for a grant from the Trillium Foundation. In the meantime, most of the TEA summary records have been entered into the database, and we have secured permission from the Butterflies of Canada project to use their data as well.

We then went on to the members’ portion. Bill Crowley presented slides of a number of insect species including spiders, butterflies and dragonflies. Chris Rickard showed slides mostly of moths from the Bruce Peninsula. Michael and Nancy van der Poorten presented slides of a variety of dragonflies and moths of Ontario.



## October

Lydia Attard  
Biology of the Weaver Ant

Nancy van der Poorten, the president, welcomed the 27 members with the news that the 2nd revised edition of the Checklist of the Butterflies of Toronto was now available! You can send in for your order (\$2.50 each) or pick up copies at the meetings (\$2 each).

Carol Sellars introduced the speaker of the day, Lydia Attard. Please see page ?? for a full report of Lydia’s excellent talk.

## November

Chris Darling  
The ROM in Vietnam

Our speaker for the day was Chris Darling, Senior Curator of Entomology at the Royal Ontario Museum. Chris treated us to a multimedia presentation of the insects and other animals of Vietnam. Apart from highlighting some of the amazing creatures of Vietnam, Chris explained how the ROM came to be involved with work in Vietnam. He also covered the logistical problems the ROM team has faced over the years in carrying out their work, and the challenges the country faces with respect to conservation. We were also treated to some spectacular scenery and insight into Vietnamese culture.

# Rediscovery of the Lake Huron Locust in Ontario

by Steve Marshall

Only two species in the large genus *Trimerotropis* occur in Ontario, both of which are restricted to the shores of the Great Lakes and can be found on open, sparsely vegetated sand. The Seaside Locust (*Trimerotropis maritima* (Harris)) has one subspecies (*T. maritima interior*) that is common along the southern shores of Lake Huron and along Lake Erie, Lake Michigan and Lake Ontario (the nominate subspecies is Atlantic coastal). The Lake Huron Locust (*Trimerotropis huronia* Walker), on the other hand, is a rare species known from historical records along the shores of Lake Huron, Georgian Bay, and Lake Michigan. The Lake Huron Locust is restricted to high quality dunes, and it has apparently disappeared from several Ontario dunes where it once occurred. In fact, based on collections made over the last 20 years, it was feared that the Lake Huron Locust had disappeared from Ontario.

This past summer I made several trips along the Lake Huron shore, sampling from Goderich north to Manitoulin Island, with special effort expended in the extensive dunes of Inverhuron Provincial Park, Sauble Beach, Dorcas Bay (Bruce Peninsula National Park), Carter Bay (Manitoulin Island), and Providence Bay Provincial Park (Manitoulin Island). I confirmed that *Trimerotropis maritima* is common at all of the above sites except Dorcas Bay, where no *Trimerotropis* were found. *Trimerotropis huronia* was found to occur at only one site; the large, relatively pristine private dunes of Carter Bay.

I would like to encourage the readership of this newsletter to look for more Lake Huron Locust populations, especially along the southern shores and islands of Georgian Bay. To that end, I have included some photographs that should make it fairly easy to recognize the species.

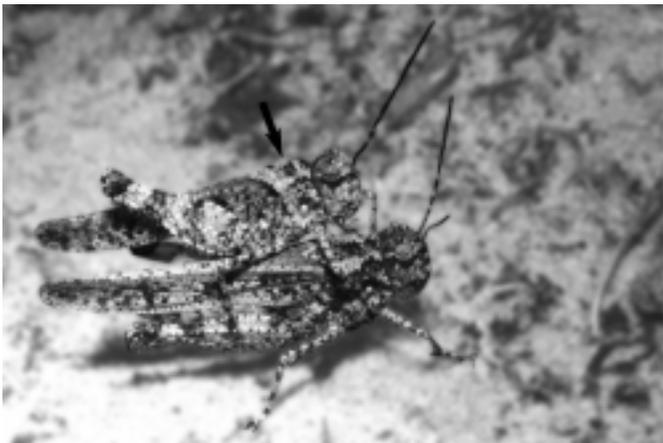


Figure 1. Lake Huron Locust. Arrows point to the two “notches” that divide the pronotal ridge.



Figure 2. Mottled Sand Grasshopper. Arrow points to the high pronotal ridge with a single notch.

*Trimerotropis* is a genus of band-winged grasshoppers, recognizable as band-winged grasshoppers by their large size (24-40mm), mottled coloration, and of course the brightly banded wings you see when they take wing. The first photograph, of the living specimen, is recognizable as a *Trimerotropis* by the two “notches” in the inconspicuous longitudinal ridge that runs from the head back along the length of the pronotum (figure 1). The most similar grasshoppers found on dunes are two species of band-winged grasshoppers in the genus *Spharagemon*, especially the Mottled Sand Grasshopper (*S. collare*). *Spharagemon* species have a much stronger carina or ridge on the top of the thorax, and it is only cut by a single notch (figure 2). Furthermore, they have bright pink or orange hind tibia (hidden at rest, but obvious in hand) quite unlike our two *Trimerotropis* species.

Once you are confident you are looking at a *Trimerotropis*, you will have to catch it to decide whether it is *T. huronia* or *T. maritima*. The photograph of the two pinned specimens shows the differences (figure 3 - opposite page). There are subtle differences in wing color, but the best way to separate these species is to look inside the groove under the hind femur where the tibia normally fits. In *T. huronia*, this groove is mostly black; in *T. maritima* it is banded in black and yellow.

I would welcome any additional records, in the form of specimens, good photographs (showing the above characters), or just anecdotes (I will need good directions to check up the latter!). Lake Huron Locusts, like many Orthoptera, are present as adults late in the season, and you should be able to find them from early August through to October.

Thanks for your help!



# The Bookworm



## New Books

Cannings, R.A. 2002. *Introducing the Dragonflies of British Columbia and the Yukon*. Royal British Columbia Museum. 96 pp. \$12.95

An excellent introduction to the dragonflies and damselflies of BC and the Yukon written by one of Canada's leading experts on this group of insects. Information on ordering can be found at: [www.royalbcmuseum.bc.ca](http://www.royalbcmuseum.bc.ca)

Carmichael, I, A. MacKenzie & B. Steinberg. 2002. *Photo Field Guide to the Dragonflies and Damselflies of Southwestern Ontario. The Friends of Pinery Provincial Park*. 72 pp. \$8.95

A nice little guide featuring excellent photographs of a large number of southwestern Ontario's species. Not comprehensive but well worth the money. Order from The Friends of Pinery Park - [www.pinerypark.on.ca](http://www.pinerypark.on.ca)

Glotzhober, R.C. & D. McShaffrey. 2002. *The Dragonflies and Damselflies of Ohio*. Ohio Biological Survey. 364 pp. US\$40.

A comprehensive guide featuring a wealth of information on the Odonata of Ohio. Ontarians will find this book to be very useful from many perspectives, despite the fact that it lacks many of "our" species.

Rosche, L. 2002. *Dragonflies and Damselflies of Northeast Ohio*. Cleveland Museum of Natural History. 94 pp. US\$18.95

This excellent field guide is well written and attractively illustrated. Although it is not comprehensive from an Ontario standpoint, anyone interested in this group of insects will want a copy.

For information on ordering either of the above two Ohio books refer to: [www.marietta.edu/~odonata/news.html](http://www.marietta.edu/~odonata/news.html)

Monkman, D. 2002. *Nature's Year in the Kawarthas: a guide to the unfolding seasons*. Natural Heritage/Natural History Inc. 338 pp. \$32.95

A month-by-month chronicle of interesting natural history events covering a variety of flora and fauna, including insects. Although directed at the Kawarthas, much of the information is relevant across south and central Ontario. Available at a variety of bookstores through-out south-central Ontario.

## Worth Reading

Mouritsen, H & B.J. Frost. 2002. *Virtual migration in tethered flying monarch butterflies reveals their orientation mechanisms*. *Proceedings of the National Academy of Sciences of the United States*. Vol 99, issue 5.

Palevitz, B.A. 2002. *The March of the Monarch: butterfly buffs and researchers track migration after disastrous winter*. *The Scientist*. Vol 16, issue 20, 26-29.

Singer, M.C. 2002. *Butterflies of British Columbia: Including Western Alberta, Southern Yukon, the Alaska Panhandle, Washington, Northern Oregon, Northern Idaho, Northwestern Montana*. (Book Review). *Quarterly Review of Biology*. Vol 77, issue 3, p333.

Fitzharris, T. 2002. *Nature: yes, bugs and butterflies can be photographed in nature's own light—forget those studio strobes!* *Popular Photography*. Vol 66, issue 6, 5-10

Obee, B. 2002. *Visiting monarchs: when wind and weather conditions are ideally aligned, these spectacular big butterflies make a royal stopover in southern British Columbia*. *Beautiful BC*. Vol 44, No 3, 24-27.

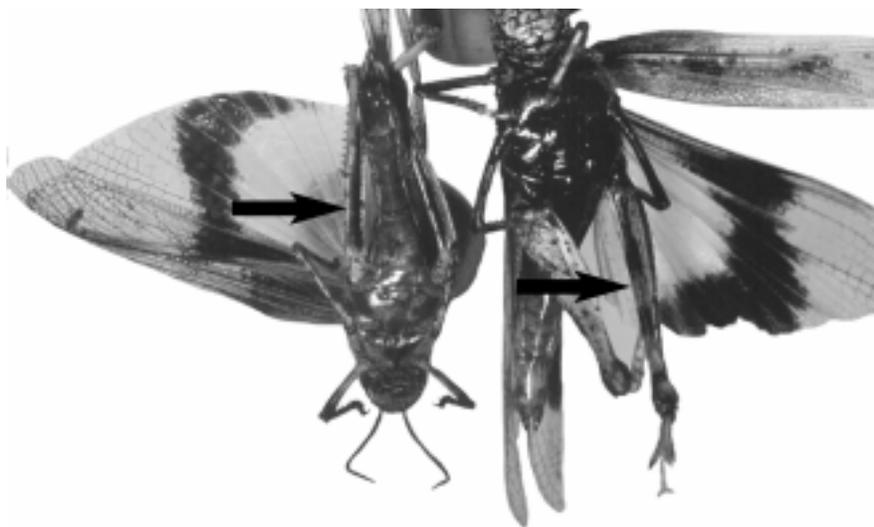


Figure 3. Seaside Locust (left) and Lake Huron Locust (right). Arrows point to the mostly black hind femoral groove of the Lake Huron Locust and the yellow and black groove of the Seaside Locust.

# Weaving an Ant's Tail

by Lydia Attard

Lydia Attard is the Curatorial Keeper of Invertebrates at the Toronto Zoo. She was the guest speaker at the October 2002 TEA meeting. This article provides an excellent written overview of the information provided in her presentation.

## GENERAL BIOLOGY

Weaver ants may be the world's most sophisticated ants out of a possible 10,000 known sp. (20,000 still to be discovered) (Holldobler and Wilson, 1990; Mearns, 1995). The two living sp. *Oecophylla smaragdina* and *Oecophylla longinoda* represent the evolutionary pinnacle of ant behavior, they occupy and maintain the largest territories in the invertebrate world. Mature colonies contain as many as 500,000 major workers and are distributed over 3-dimensional territories. These territories can encompass 1600m<sup>2</sup> of base area. The area embraces up to 20 major trees where they maintain up to 150 nests. Due to their aggressive and territorial nature they are not only among the most populous but are also one of the most successful social insects of the Old World tropics (Holldobler, 1979, 1984d; Holldobler and Lumsden, 1980).

### Geographical Distribution

*O. longinoda* is abundant in the tropical forested regions of Africa from which 5 varieties have been described (Way, 1954a; Wheeler, 1922). *O. smaragdina* also found in tropical forests has varieties in southern India, Sri Lanka, Burma, Malaya and in countries and islands lying between and including Southern China and Northern Australia (Holldobler, 1983; Lokkers, 1986; Way, 1954a).

Temperature and rainfall affect their range. Larval development is inhibited at average temperatures below 17°C and above 33.3°C. The optimum average temperature for larval development observed in captivity is ~30°C. Consequently, nests are constructed in locations, which would come close to this ideal temperature. Besides having to construct new nests due to the deterioration of the leaves they also relocate the nests based on the position of the sun which changes seasonally. In this way they maintain an optimal nest environment by trying to obtain the correct amount of thermal exposure (Vanderplank, 1960).

Forest woodlands which provide ideal nesting sites and support diverse and highly dense insect fauna are only found in tropical regions whose annual rainfall is above 500mm (Lokkers, 1986).

### Foraging, Diet and Homopteran Associations

These animals are diurnal foraging during the day as long as it is not raining (Leston, 1973; Holldobler, 1979). They forage on insect prey, which they mainly feed to the developing larvae,

and ranch sap-feeding homopterous insects like dairy cattle. They defend and tend the homopterans for their excremental secretions, which make up a large portion of the adult diet – honeydew (Addicott, 1979; Holldobler, 1984d; Holldobler and Wilson, 1977c; Nault et al, 1976; Way, 1954a, 1954b, 1963). This relationship is quite important, in fact it influences the choice of plant used for nesting. The criteria for choosing a plant depends partly on the ease with which the leaves can be used to construct nests and partly on the ability of the host plant to support suitable Homoptera. Even starvation does not induce the ants to use them for food. Although they may consume some during these times, they still continue to raise them (Vanderplank, 1960; Holldobler and Wilson, 1990; Way, 1954a, 1954b, 1963).

Weaver ants have acute eyesight and a keen sense of smell (Holldobler and Wilson, 1977c). They also have powerful suction pads or arolia between their tarsal claws, which enable the ants to walk on smooth tropical leaves. These pads are so strong that they can haul prey hundreds of times their size. Prey items experience death by stretching. Sometimes the victim may be spread-eagled for as long as half an hour until it is subdued. It is also sprayed with formic acid as they initially try to subdue it (Bradshaw et al, 1975; Holldobler, 1984d; Holldobler and Wilson, 1978; Hoyt, 1996).

They are one of the dominant ant species in the forest canopies, having a significant impact on tropical forest ecology and agriculture. Infact they are one of the oldest forms of biocontrol used by the Chinese dating as far back as 300 AD. The nests were collected and moved into citrus orchards before the beginning of the fruiting season. In this way insect pests were controlled which would otherwise severely damage the developing fruit. Presently their use has been expanded throughout their range to include coconut palms and other tree crops (Greenaway, 1981; Holldobler, 1983; Holldobler and Wilson, 1977c; Vanderplank, 1960; Way, 1954a, 1954b, 1963; Wilson, 1971).

## COLONY LIFE

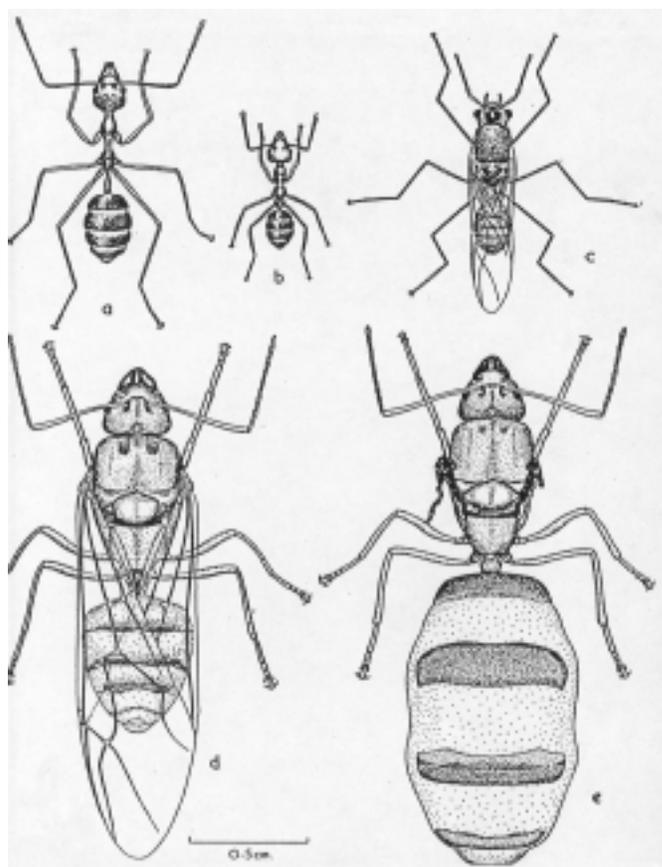
Weaver ant colonies are models of altruistic co-operation demonstrating "girl power" in action. All co-operative actions center on rearing the next generation thus ensuring the reproduction and survival of its common genes. Sisters in an ant colony share an average of 75% of their genes. The female worker ants sacrifice their own fertility because it is more efficient

to help raise the eggs of a single continually laying queen than to lay and rear their own. Likewise soldier ants automatically risk their own lives to defend a territory needed to feed their colony's brood (Carlin and Holldobler, 1983; Haskins, 1984; Holldobler, 1983, 1984d; Wilson, 1985b).

### Caste System

Labour is divided into specific tasks and each task is assigned to specialized workers which increases efficiency. The members of a Weaver Ant colony fall into four different body forms (Holldobler, 1983, 1984d; Holldobler and Wilson, 1977c, 1978, 1983a, 1994; Way, 1954a, 1954b; Wilson, 1971):

- A. Female Major Workers: Emerge from fertilized eggs – diploid; sterile but capable of producing males when the queen is dead (i.e. when there is no fertility suppressing pheromone present); up to 8mm in length; most aggressive of all body forms – bite and secrete formic acid from their poison gland. Duties based on age: Young tend the queen and older/larger larvae and pupae; middle aged forage; veterans expand and defend the territory acting as scouts and guards
- B. Female Minor Workers: Emerge from fertilized eggs – diploid; sterile; much smaller in size, seldom found outside the proximity of the leaf nests; low numbers in the colony compared with the majors. This is distinctive to Weaver ants because in other ant species this caste is usually more numerous than the larger major workers. Duties based on age: Young specialize in the care of eggs and small larvae; older minors tend homopterans (honeydew producing insects).
- C. Male body form: Emerge from unfertilized eggs – haploid; winged.  
Duties: Reproductive functions – to breed with virgin queens; also contribute silk to the nest when in its larval stage.
- D/E. Female Virgin queen/Queen: Winged, large and heavy bodied, emerge from fertilized eggs – diploid  
Duties: Reproductive functions: Founders of new colonies; a mated queen produces an average of 900 eggs/day; a mated queen produces a fertility suppressing pheromone which restricts the development of eggs laid by major workers to trophic eggs. This pheromone can persist up to 4 months even after the queen is dead. Once it has dissipated some worker eggs will develop into males since they have not been fertilized - in effect it is the colonies last ditch effort to pass on its genes.



The four different body forms of Weaver Ants. A=female major workers, B=female minor workers, C=males, D=female virgin queen, E=queen.

### COMMUNICATION

The Weaver ants possess one of the most complex and advanced communication systems known among the social insects. Their ability to orchestrate their intricate behavioral repertoires have enabled them to have exceptional control of their arboreal environment. They are thus considered classic social insects. These sighted “chemical factories”, inspite of having no voice or ear, have achieved, through a sophisticated combination of pheromones (chemical secretions from specialized glands) (Fig. 3) and body language (tactile signals), an ability to transmit up to 50 messages. Together the recruitment and alarm systems constitute the most complex of such repertoires thus far discovered in ants (Holldobler, 1984d; Holldobler and Wilson, 1977c, 1978, 1990).

### Recruitment System

They utilize 5 recruitment systems to “call” nestmates from the leaf nests to the remainder of the nest tree and to the foraging areas beyond; each entails a distinct combination of chemical and tactile signals as well as locomotory communication patterns (Holldobler, 1979; Holldobler and Lumsden, 1980; Holldobler and

Wilson, 1977c, 1978, 1990).

It should be noted that there is no clear distinction between territorial defense and predation. When intruders are killed, they are treated as prey and carried back to the nest to be eaten. The close similarity between recruitment to intruders and recruitment to food makes more sense if they are regarded as merely ends of a single continuum i.e. signal economy in the evolution of social insect communication (Holldobler and Wilson, 1977c, 1977d, 1978, 1990).

Recruitment systems involve various exocrine glands of which the rectal (unique to Weaver ants) and sternal glands are the primary contributors (Holldobler and Wilson, 1977c, 1977d, 1978, 1990).

#### Alarm Communication

Used to alarm nestmates, to defend the foraging area, to collect food and to explore and dominate new terrain. Mainly mediated by the mandibular gland pheromones and to a lesser extent by secretions of Dufour's gland and the poison gland (Holldobler and Wilson, 1977c, 1978, 1990; Wilson and Regnier, 1971).

Mandibular gland secretions of major workers release a complex pattern of behaviour in other major workers, which includes components of alerting, attraction and biting. In combination therefore, various chemicals produce a complex sequential message in space and time, dependant on the type, amount of chemical used to make up the signal, their volatility and the threshold concentrations for behavioural responses (Bradshaw, 1981; Bradshaw et al, 1975, 1979; Holldobler and Wilson, 1994; Hoyt, 1996; Wilson and Regnier, 1971).

#### Territoriality

The territories are fiercely guarded tolerating almost no other ant species in the trees they occupy. These aggressive interactions create narrow, unoccupied corridors that are in effect "no-ant's land" (Leston, 1970, 1973; Holldobler, 1979, 1983, 1984d; Holldobler and Lumsden, 1980; Holldobler and Wilson, 1977a, 1977c, 1977d, 1978, 1990; Room, 1971).

The phenomenon of "enemy identification" occurs when Weaver ants upon encountering "enemy" ants as opposed to other ant species react with a massive defense response. The "enemy" ants are mainly conspecifics or any ant species, which competes for the same resources (nesting sites, honeydew sources and hunting grounds). The "enemies" are usually first perceived by guard ants, which then transmit an alarm or defense recruitment signal to other nest mates. It is possible that these guard ants learn or become sensitized particularly to these ant species in the community which challenge their territorial border most frequently (Holldobler, 1983). This selective "enemy identification" is the major behavioral mechanism by which the distribution of dominant ants is regulated (Leston, 1970, 1973; Holldobler, 1979, 1983; Room, 1971; Holldobler and Wilson, 1977a, 1977c, 1977d, 1978, 1990).

Weaver ants recognize their territory primarily through olfactory cues and to a lesser degree through visual landmarks. They are one of the only social insects to actually have a colony-specific territorial pheromone to advertise territories and deter invasion by alien workers. This pheromone is deposited throughout their territory by major workers and is thought to originate partially and perhaps exclusively from the rectal sac. Colony specific chemical markers play an important role in orientation within the nest territory and aids in the defensive organization of the territory (Holldobler, 1979; Holldobler and Lumsden, 1980; Holldobler and Wilson, 1977a, 1977c, 1978, 1990; Hoyt, 1996).

#### NEST CONSTRUCTION

The Weaver ants have evolved the most advanced form of weaving. Their nest construction demonstrates their spectacular co-operation and division of labour. Once constructed leaf nests last about 4-6 weeks and can be completed within 24 hours. They serve as retreat outposts and nurseries. The ability to create these nests and thus inhabit an arboreal environment has provided them with distinct advantages, which in turn has contributed to their success (Holldobler, 1984d; Holldobler and Wilson, 1983b, 1994; Holldobler and Lumsden, 1980)



Figure 1. Weaver Ants forming a chain in order to pull leaves together during nest construction.

#### Advantages of an Arboreal Existence:

1. Colonies are able to attain large populations despite the large size of the major workers.
2. It has allowed the ants freedom from spatial restrictions experienced by other ant species that must live underground, between stems of leaves or other preformed vegetative cavities.
3. It allows nests to be constructed in the peripheral canopy of the trees in their territory as opposed to having a central nest. The territory can then be patrolled simultaneously over much of its volume. Consequently harvesting benefits

are kept at a maximum as the workers monopolize the interior volume of the territory. Defense costs however, are kept at a minimum in that it is confined to just along the margins of the colony (Holldobler, 1983; Holldobler and Lumsden, 1980; Holldobler and Wilson, 1983b, 1994).

#### New Nest Construction:

1. Individual workers explore promising sites within the colony's territory, pulling at the edges and tips of leaves.
2. Once a worker has successfully turned a portion of a leaf back on itself or draws one leaf edge toward another, other workers in the vicinity are attracted to the area in question and join in.
3. They line up in a row and pull in unison. Sometimes if the gap between the leaves is too wide, the ants will form a chain by seizing one another's petiole (waist) and pulling as a single unit. Often rows of chains are aligned so as to exert a powerful combined force (figure 1). The formation of such chains of ants to move objects requires intricate maneuvering and a high degree of coordination and is unique to *Oecophylla* among the social insects.
4. More ants join the effort until many leaves are pulled together to form a tentlike configuration.
5. Once this has been accomplished other workers, each carrying a 3rd instar larva (last instar before pupation) arrive at the area (figure 2). They each move their rigid larva back and forth, over the held leaf edges, stimulating it with their flexible antennae, to secrete a silken thread from glands below their mouth (Holldobler, 1983, 1984d; Holldobler and Wilson, 1977c, 1983b, 1994; Wilson, 1971).

Consequently, the silk is the property of the colony and has lost its use as a personal cocoon. The major workers have taken control of the spinning movements of the larvae, such that the larvae have become passive dispensers of silk. The workers have thus enormously increased the speed and efficiency with which the silk can be applied to critical sites on the nest (Holldobler, 1984d; Holldobler and Wilson, 1983b; Wilson and Holldobler, 1980).



Figure 2. Several worker ants hold the leaves together as another worker uses the silk from a third instar larvae (the whitish object) to hold the leaves together.



A nest under construction by a group of Weaver Ants.

#### CAPTIVE COLONY SET UP AND HUSBANDRY PROTOCOL

##### Set-Up

Citrus trees were offered to the ants since the leaves did not deteriorate as quickly as other varieties e.g. Hibiscus. The tree was put on bricks to keep the tree roots dry. The bricks sat inside a large shallow container, which was filled with water to create a moated area so as to prevent escapes. The ants were fed at the base of the tree. Two food dishes were provided one containing nectar, the other freshly killed insects and a gel made for ants. An orange slice was also offered as well as live 1/16 crickets which were put into a plastic box the ants could enter through a tube.

##### Husbandry Protocol

A daily recording sheet was filled out (e.g. temperature, humidity as well as the number of food items offered and consumed). The following were recorded in the comments section of the recording sheet:

- Record daily misting of the trees and nests. This provides water, cleans off any debris and loosens any dying leaves. This is very important because if a leaf were to fall and float on the moat the ants could use it as a bridge to escape.
- Record watering and/or fertilizing the trees
- Record location and date of any new nests
- Record any nuptial flights
- Record replacement of trees

The following was not recorded but performed daily: Ensure that there are no branches or leaves within 2 inches of any surface that they could possibly build a bridge to. Over flow moats to remove any debris (possible bridges out) and provide fresh water. Remove scale where possible.

Problem

The queen's life span and hence that of the colony's can exceed 5 years (Vanderplank, 1960). Our main problem is that our colonies lived just over a year after being captured. The following are possible reasons each of which or in combination may explain the demise of our captive colonies:

- The trees became infested with scale and were not replaced often enough. This may have led to a bacterial build up, which may directly have caused the queen to die, or, indirectly, she may have been moved excessively as they tried to move her into cleaner nesting areas. She therefore may have been torn apart or experienced undue stress, shortening her life and hence that of the colony's.
- We may not have fed enough variety, initially we offered primarily crickets, ant gel and nectar since then we have increased the diversity but it may have been too late.
- Temperature on a few occasions rose above 33.3°C and decreased below 17°C, we may also have not provided them with the correct environmental conditions from which to choose the best nest location.
- The sperm retained in the queen may have died when exposed to the high temperature levels.
- The last explanation may be that all the colonies captured may have been old - with an old queen. The colonies therefore had been approaching the end of their lives when we captured them.

WONDERFUL WEAVERS!!!

These animals are truly wonderful and it would be worthwhile to try to refine their husbandry and presumably, if they were young colonies, extend their life. They have great exhibit potential being large and active with remarkable repertoires from which to tell a great story. Consequently they would be a fascinating ambassador species to introduce visitors to ants and other social insects.

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## 2002 Presqu'ile Butterfly Blitz

by Philip Careless

A big thanks to all the volunteers who accepted the thankless task of running through the forest and fields of Presqu'ile, both human (14) and not so human (4500). The weather (rain the day before and blue skies on the count) helped with the number of butterflies and smiling faces. As with most of the province, however, the cool spring may have reduced the numbers of some more common species. Red Admirals, after an unbelievable year in 2001, choose not to participate this year.

Due to the time of year all crescents were assumed to be Northern Crescents (*Phyciodes cocyta*). Early and late season is when Pearl Crescents (*P. tharos*) are active. Also all tiger swallowtails were assumed to be Canadian Tiger Swallowtails (*Papilio canadensis*).

The B-fly hunters attacked the following locations: Paved Newcastle Trail, North of Day-use #2, Chatterton Point, Bike Trail East of Park Store, Calf Pasture, Jobe's Wood Trail, NorthWest Pioneer Trail, Owen Point Trail, Fingers Trail, Back Dunes, and Marsh Boardwalk Trail.

The non-lepidopteran participants are as follows: Andrew Critwill, Sarah Banting, Jerry Ball, Mark Conboy, Philina English, Robbie Boyed, Julie Impey, Fiona Boyed, Rick Boyed, Bill Gilmore, David Gilmore, Bill, Boyed, Gord Vogg, Mike Boyed, and Philip Careless.

For more information contact:  
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Common Name	Scientific Name	Numbers
Least Skipper	<i>Ancyloxypha numitor</i>	2
European Skipper	<i>Thymelicus lineola</i>	4018
Crossline Skipper	<i>Polites origenes</i>	1
Long Dash Skipper	<i>Polites mystic</i>	8
Dun Skipper	<i>Euphyes vestris</i>	1
Can. Tiger Swallowtail	<i>Papilio canadensis</i>	33
Cabbage White	<i>Pieris rapae</i>	20
Clouded Sulphur	<i>Colias philodice</i>	5
Orange Sulphur	<i>Colias eurytheme</i>	4
Silvery Blue	<i>Glaucopsyche lygdamus</i>	2
Great Spangled Fritillary	<i>Speyeria cybele</i>	16
Northern Crescent	<i>Phyciodes cocyta</i>	156
Question Mark	<i>Polygonia interrogationis</i>	1
White Admiral	<i>Limenitis a. arthemis</i>	14
Viceroy	<i>Limenitis archippus</i>	2
Eyed Brown	<i>Satyroides eurydice</i>	151
Little Wood-Satyr	<i>Megisto cymela</i>	8
Common Wood-Nymph	<i>Cercyonis pegala</i>	46
Common Ringlet	<i>Coenonympha tullia</i>	4
Monarch	<i>Danaus plexippus</i>	8
TOTAL SPECIES		20
TOTAL INDIVIDUALS		4500

# Results of the 2002 Pelee Island Insect Counts

by Bob Bowles

The 5th annual Pelee Island butterfly count was held on Saturday, August 3, 2002 under sunny skies. Due to engine problems with the ferry to the island, it was difficult to get vehicles onto the island. Participants were therefore shuttled from location to location with the two cars we had available. Nine observers reported 29 species and 3,414 individuals. No new species were reported for the count.

The 3rd annual Pelee Island Odonate count was held on Sunday, August 4, 2002. Five observers reported 16 species and 949 individuals. No new species were reported for the Pelee Island list.

A few other insects were observed during the weekend. Full count summaries and additional insect lists are included here, beginning with the odonate count results.

## BUTTERFLY COUNT RESULTS

Common Name	Scientific Name	Numbers
Common Sootywing	<i>Pholisora catullus</i>	2
Least Skipper	<i>Ancyloxypha numitor</i>	121
Northern Broken-Dash	<i>Wallengrenia egeremet</i>	cw
Dun Skipper	<i>Euphyes vestris</i>	4
Black Swallowtail	<i>Papilio polyxenes</i>	77
Giant Swallowtail	<i>Papilio cresphontes</i>	59
Eastern Tiger Swallowtail	<i>Papilio glaucus</i>	19
Spicebush Swallowtail	<i>Papilio troilus</i>	1
Cabbage White	<i>Pieris rapae</i>	2428
Clouded Sulphur	<i>Colias philodice</i>	22
Orange Sulphur	<i>Colias eurytheme</i>	132
Juniper Hairstreak	<i>Callophrys grynea</i>	1
Eastern Tailed Blue	<i>Everes comyntos</i>	5
Summer Azure	<i>Celastrina neglecta</i>	133
American Snout	<i>Libytheana carinenta</i>	56
Variiegated Fritillary	<i>Euptoieta claudia</i>	3
Pearl Crescent	<i>Phyciodes tharos</i>	8
Northern Crescent	<i>Phyciodes cocyta</i>	4
Question Mark	<i>Polygonia interrogationis</i>	19
Eastern Comma	<i>Polygonia comma</i>	11
Gray Comma	<i>Polygonia progne</i>	1
Mourning Cloak	<i>Nymphalis antiopa</i>	2
Red Admiral	<i>Vanessa atalanta</i>	13
Common Buckeye	<i>Junonia coenia</i>	4
Red-spotted Purple	<i>Limenitis arthemis</i>	104
Viceroy	<i>Limenitis archippus</i>	36
Hackberry Emperor	<i>Asterocampa celtis</i>	27
Tawny Emperor	<i>Asterocampa clyton</i>	26
Common Wood-Nymph	<i>Cercyonis pegala</i>	9
Monarch	<i>Danaus plexippus</i>	87
TOTAL SPECIES		29
TOTAL INDIVIDUALS		3414

## ODONATA COUNT RESULTS

Common Name	Scientific Name	Numbers
Slender Spreadwing	<i>Lestes rectangularis</i>	1
Blue-fronted Dancer	<i>Argia apicalis</i>	9
Tule Bluet	<i>Enallagma carunculatum</i>	107
Familiar Bluet	<i>Enallagma civile</i>	417
Fragile Forktail	<i>Ischnura posita</i>	9
Eastern Forktail	<i>Ischnura verticalis</i>	123
Darner sp.	<i>Aeshna</i> sp.	2
Common Green Darner	<i>Anax junius</i>	20
Twelve-spotted Skimmer	<i>Libellula pulchella</i>	39
Blue Dasher	<i>Pachydiplax longipennis</i>	175
Common Whitetail	<i>Plathemis lydia</i>	15
Eastern Amberwing	<i>Perithemis tenera</i>	11
Wh-faced Meadowhawk	<i>Sympetrum obtrusum</i>	4
Ruby Meadowhawk	<i>Sympetrum rubicundulum</i>	2
Saddlebags sp (red)	<i>Tramea</i> sp.	1
Black Saddlebags	<i>Tramea lacerata</i>	14
TOTAL SPECIES		16
TOTAL INDIVIDUALS		949

## OTHER INSECTS OBSERVED

Common Name	Scientific Name	Numbers
MOTHS	LEPIDOPTERA	
Hummingbird Clearwing	<i>Hemaris thysbe</i>	1
Milkweed Tiger Moth	<i>Euchaetes egle</i>	1
Chickweed Geometer	<i>Haematopsis grataria</i>	1
False Crocus Geometer	<i>Xanthotype urticaria</i>	1
Gypsy Moth	<i>Lymantria dispar</i>	8
8-spotted Forester	<i>Alypia octomaculata</i>	1
Ailanthus Webworm	<i>Atteva punctella</i>	1
BEEILES	COLEOPTERA	
Southern Lady Beetle	<i>Harmonia axyridis</i>	4
Red-headed Ash Borer	<i>Neoclytus acuminatus</i>	1
WASPS	HYMENOPTERA	
Great Golden Digger	<i>Sphex ichneumoneus</i>	10

Butterfly Count Participants: Jerry Ball, Bob Bowles, Carolyn King, Tim, Kim, Cameron and Carter Leah, Trish Murphy, Anne Staquet

Odonate Count Participants: Jerry Ball, Bob Bowles, Carolyn King, Trish Murphy, Anne Staquet

## 2002 Sunderland Butterfly Count

by James Kamstra

The Sunderland butterfly count, was carried out on July 7<sup>th</sup>, 2002. The count circle is centred on the village of Udora and encompasses parts of Brock, Uxbridge and Georgina townships. Members from South Lake Simcoe Naturalists, Durham Region Field Naturalists, Pickering Naturalists and others participated in the count. After a hard day's butterflying, most participants met up at Digger O'Dells Restaurant in Uxbridge for dinner, the tally and a pint or two.

Butterfly emergent dates were slightly delayed in 2002, resulting from a rather cool spring. The conditions on the Sunderland count were ideal with temperatures ranging from 20° to 30° C. and about 90% sunshine. This year 28 observers in 8 parties recorded 49 species, plus one additional form. The butterfly densities along the rail trails through the extensive wetlands along the Beaverton River were lower than some years. However, some wet meadows were found to harbour exceptional densities and varieties of butterflies. The migrant species were all in low numbers, in marked contrast to the record numbers witnessed in 2001. There were record high numbers of Long Dash (which may turn out to be the all time high North American count for this species).

Two new species were added which gives a cumulative total of 66 species for the six years of the Sunderland butterfly count. Single Little Glassywings were found independently by Dave Catrall, Ed Poropat and James Kamstra. The specimens were all scrutinized carefully because it can be easily confused with several similar species. Little Glassywings are a southern or Carolinian species that was not formerly documented this far north in Durham Region. Either the species is expanding, or it has been overlooked in the past. The other new species was Eastern Tiger Swallowtail, which is very similar to the more northern Canadian Tiger Swallowtail. One particular large specimen was caught and examined closely by Brian Henshaw and Dale Leadbeater. The count totals are provided below.

Common Name	Scientific Name	Total
Northern Cloudywing	<i>Thorybes pylades</i>	1
Least Skipper	<i>Ancyloxypha numitor</i>	161
European Skipper	<i>Thymelicus lineola</i>	11,400
Peck's Skipper	<i>Polites peckius</i>	125
Tawny-edged Skipper	<i>Polites themistocles</i>	159
Crossline Skipper	<i>Polites origenes</i>	6
Long Dash Skipper	<i>Polites mystic</i>	289
Northern Broken-Dash	<i>Wallengrenia egeremet</i>	3
Little Glassywing	<i>Pompeius verna</i>	3
Delaware Skipper	<i>Anatrytone logan</i>	24
Hobomok Skipper	<i>Poanes hobomok</i>	12
Dion Skipper	<i>Euphyes dion</i>	9
Two-spotted Skipper	<i>Euphyes bimacula</i>	1
Dun Skipper	<i>Euphyes vestris</i>	72

Common Name	Scientific Name	Total
Black Swallowtail	<i>Papilio polyxenes</i>	1
Eastern Tiger Swallowtail	<i>Papilio glaucus</i>	1
Canadian Tiger Swallowtail	<i>Papilio canadensis</i>	47
Mustard White	<i>Pieris oleracea</i>	75
Cabbage White	<i>Pieris rapae</i>	245
Clouded Sulphur	<i>Colias philodice</i>	75
Orange Sulphur	<i>Colias eurytheme</i>	3
Bronze Copper	<i>Lycaena hyllus</i>	15
Coral Hairstreak	<i>Satyrrium titus</i>	1
Acadian Hairstreak	<i>Satyrrium acadicum</i>	9
Banded Hairstreak	<i>Satyrrium calanus</i>	1
Eastern Tailed Blue	<i>Everes comyntos</i>	3
Summer Azure	<i>Celastrina neglecta</i>	16
Silvery Blue	<i>Glaucopsyche lygdamus</i>	2
Great Spangled Fritillary	<i>Speyeria cybele</i>	27
Silver-bordered Fritillary	<i>Boloria selene</i>	35
Meadow Fritillary	<i>Boloria bellona</i>	3
Pearl Crescent	<i>Phyciodes tharos</i>	31
Northern Crescent	<i>Phyciodes cocyta</i>	322
Baltimore Checkerspot	<i>Euphydryas phaeton</i>	184
Question Mark	<i>Polygonia interrogationis</i>	4
Eastern Comma	<i>Polygonia comma</i>	6
Grey Comma	<i>Polygonia progne</i>	6
Mourning Cloak	<i>Nymphalis antiopa</i>	10
American Lady	<i>Vanessa virginiensis</i>	1
White Admiral	<i>Limenitis a. arthemis</i>	43
Red-spotted Purple	<i>Limenitis a. astyanax</i>	3
Viceroy	<i>Limenitis archippus</i>	20
Northern Pearly-Eye	<i>Enodia anthedon</i>	22
Eyed Brown	<i>Satyrodes eurydice</i>	459
Appalachian Brown	<i>Satyrodes appalachia</i>	15
Little Wood-Satyr	<i>Megisto cymela</i>	22
Common Wood-Nymph	<i>Cercyonis pegala</i>	28
Common Ringlet	<i>Coenonympha tullia</i>	99
Monarch	<i>Danaus plexippus</i>	25

TOTAL SPECIES	49*
TOTAL INDIVIDUALS	14,200
Party-hours	83
Km covered	405

\* species total includes both forms of *Limenitis arthemis* (White Admiral and Red-spotted Purple)

Participants: J. Ball, D. Barry, D. Bishop, S. Blanchard, D. Bryant, D. Bryant, E. Bryant, K. Bryant, D. Catrall, T. Clarke, K. Clute, P. Clute, D&D Harpley, B&J Henshaw, J. Hopkins, D. Janas, J. Kamstra, C. King, D. Leadbeater, T. McDougall, L. Pauze, E. Poropat, B. Porter, R. Pye, M. Welch, N. Woerns

## 2002 Haliburton Highlands Butterfly Count

by Ed Poropat

On Saturday, July 13, 2002, twelve avid lepidopterists gathered in the highlands of Haliburton for the 3rd annual butterfly count. By the end of the day, a total of 50 different species (including 4 new to the count) were found, consisting of 9692 individuals!

The Haliburton Highlands count circle is located on the Canadian Shield and is roughly centered around the town of Minden, Ontario on Hwy 35. It encompasses small towns and hamlets such as Lochlin, Gelert, Kinmount, Ingoldsby, and Moore Falls. The circle consists largely of deciduous and mixed forest cover, interspersed with many lakes, a variety of wetlands (beaver ponds, cattail marshes, sedge meadows, bogs, swamps) and occasional fields and meadows. This diversity of habitats produces an abundance of lepidopteran species, particularly skippers.

2002 was a rather interesting year for butterflies in this area. A cooler than normal spring and early summer caused many species to emerge later (eg. Hobomok Skipper, Arctic Skipper), many in lower numbers than usual. Conversely, early July was hot and dry, allowing for many of these earlier species to linger, as well as later varieties to emerge "on time" and in good numbers (eg. hairstreaks, greater fritillaries). Thus, count day had an intriguing combination of species. In general, diversity was rich once again, but numbers somewhat scant.

The weather cooperated for most of the day, being warm, mainly sunny, but with a steady breeze.

This year, several species experienced significant increases in population including Compton Tortoiseshell, Meadow Fritillary, and Viceroy. White Admiral, Clouded Sulphur, and Eyed Brown were especially abundant this past summer. Of particular interest was the noted population surge in many species associated with sedge meadows. All these sedge specialists showed dramatic increases in number (Two-spotted Skipper, Broad-winged Skipper, Mulberry Wing), as well as some other species often found along the periphery of these areas (Long Dash, Peck's Skipper). This increase is likely attributed to favourable conditions this past year (amount of moisture, temperature, winter conditions, etc.) but also in part to refined searching techniques, familiarity with habitat and habits, and scouting of new colonies prior to the count.

Some butterfly species showed significant declines in population this past year. Most apparent in this group were the non-existent migrants - NO Lady's or Red Admirals were recorded. Not one could be found despite the banner numbers the year before! Also Monarch, Summer Azure, Northern Pearly-eye, and most of the anglewings seemed particularly scarce.

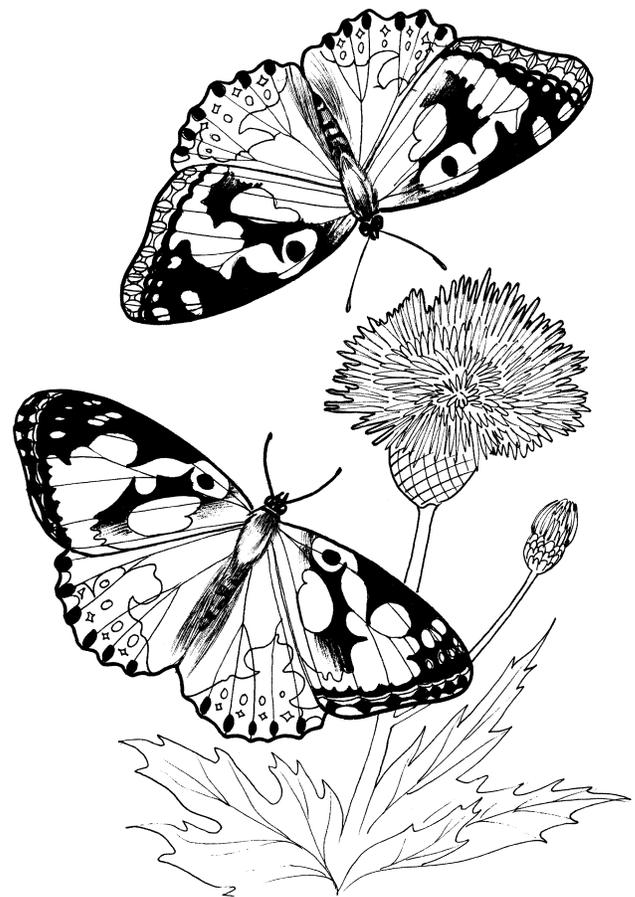
The cooler spring and early summer, however, allowed some early species to continue flying into the second week of July. Canadian Tiger Swallowtail, Hobomok Skipper, Little Wood Satyr, and our first ever Arctic Skipper were all good finds.

Following a full day in the field, we met at a quaint local Thai restaurant for some excellent cuisine and some number crunching. Special thanks to the following people who made this count a great success....again: Jerry Ball, Dennis Barry, Dave Bishop, Margaret Carney, Jim Hopkins, Angie Horner, James Kamstra, Thom Lambert, Rayfield Pye, Ron Tozer, and Norbert Woerns. The 2003 count is on July 12.....hope you can make it!

Common Name	Scientific Name	Total
Columbine Duskywing	<i>Erynnis lucilius</i>	3
Least Skipper	<i>Ancyloxypha numitor</i>	84
European Skipper	<i>Thymelicus lineola</i>	7708
Peck's Skipper	<i>Polites peckius</i>	89
Tawny-edged Skipper	<i>Polites themistocles</i>	14
Crossline Skipper	<i>Polites origenes</i>	3
Long Dash Skipper	<i>Polites mystic</i>	107
Northern Broken-Dash	<i>Wallengrenia egeremet</i>	10
Delaware Skipper	<i>Anatrytone logan</i>	1
Mulberry Wing	<i>Poanes massasoit</i>	61
Hobomok Skipper	<i>Poanes hobomok</i>	1
Broad-winged Skipper	<i>Poanes viator</i>	28
Two-spotted Skipper	<i>Euphyes bimacula</i>	18
Dun Skipper	<i>Euphyes vestris</i>	62
Arctic Skipper	<i>Carterocephalus palaemon</i>	1
Skipper sp.		5
Can. Tiger Swallowtail	<i>Papilio canadensis</i>	1
Mustard White	<i>Pieris oleracea</i>	6
Cabbage White	<i>Pieris rapae</i>	63
	<i>Pieris sp.</i>	1
Clouded Sulphur	<i>Colias philodice</i>	274
Orange Sulphur	<i>Colias eurytheme</i>	2
Pink-edged Sulphur	<i>Colias interior</i>	8
Bog Copper	<i>Lycaena epixanthe</i>	2
Coral Hairstreak	<i>Satyrium titus</i>	26
Acadian Hairstreak	<i>Satyrium acadicum</i>	37
Banded Hairstreak	<i>Satyrium calanus</i>	2
Striped Hairstreak	<i>Satyrium liparops</i>	3
Summer Azure	<i>Celastrina neglecta</i>	7
Great Spangled Fritillary	<i>Speyeria cybele</i>	28
Aphrodite Fritillary	<i>Speyeria aphrodite</i>	9
Atlantis Fritillary	<i>Speyeria altantis</i>	5
	<i>Speyeria sp.</i>	6

Common Name	Scientific Name	Total
Silver-bordered Fritillary	<i>Boloria selene</i>	23
Meadow Fritillary	<i>Boloria bellona</i>	26
Pearl Crescent	<i>Phyciodes tharos</i>	4
Northern Crescent	<i>Phyciodes cocyta</i>	87
Baltimore Checkerspot	<i>Euphydryas phaeton</i>	36
Question Mark	<i>Polygonia interrogationis</i>	5
Eastern Comma	<i>Polygonia comma</i>	9
Green Comma	<i>Polygonia faunus</i>	1
Grey Comma	<i>Polygonia progne</i>	5
Compton Tortoiseshell	<i>Nymphalis vaualbum</i>	24
Mourning Cloak	<i>Nymphalis antiopa</i>	2
White Admiral	<i>Limenitis arthemis arthemis</i>	179
Viceroy	<i>Limenitis archippus</i>	14
Northern Pearly-Eye	<i>Enodia anthedon</i>	7
Eyed Brown	<i>Satyrodes eurydice</i>	483
Appalachian Brown	<i>Satyrodes appalchia</i>	1
Little Wood-Satyr	<i>Megisto cymela</i>	4
Common Ringlet	<i>Coenonympha tullia</i>	10
Common Wood-Nymph	<i>Cercyonis pegala</i>	48
Monarch	<i>Danaus plexippus</i>	49
<b>TOTAL SPECIES</b>		<b>50</b>
<b>TOTAL INDIVIDUALS</b>		<b>9692</b>
Party-hours		118
Km covered		348

New species for the count are featured in bold-face type.



## Migratory Tendencies of the Cabbage White (*Pieris rapae*)

by Barry Harrison

On July 27, 1999 I observed a significant northward movement of Cabbage White butterflies (*Pieris rapae*) from across Lake Ontario and progressing north through Scarborough, Ontario. This phenomenon continued throughout that day (Ontario Insects, January 2000). Since then, I had not noticed any kind of directional movement in this species. Certainly, to observe the Cabbage White in one's garden or in a field, it appears to fly randomly from one flower (or area) to another, and in any direction. Other than occasional individuals, this species is apparently not considered a migratory species in North America.

On August 5, 2002, as I was driving north through Toronto, I became aware of a way to detect directional flight in this species. While it is difficult to detect direction in the normal random flight pattern, I noticed that when individuals approached a north-south corridor, such as a roadway, they were forced to reveal

that they were moving in a westerly direction (and to a lesser degree a south-westerly direction)! I noticed this trend from August 5 into September of 2002. On mentioning this trend to Don Peuramak, I discovered that he also noticed a westerly movement in this species. He noted Cabbage Whites flying along the north shore of Lake Ontario, in the city's West End.

It was likely that the July 1999 northward movement was caused by a population explosion to the south, and individuals were dispersing. The movements noted this past fall, however, may be a pre-winter push towards warmer climes (perhaps breeding along the way) as a means of surviving the winter.

Armed with the current information, it will be interesting to watch for directional movements of the Cabbage White in the future to see how often, and just when these movements occur. Are they happening on an annual basis in both spring and fall, or are these movements less frequent?

# The Ontario Butterfly Atlas - 2nd Edition

## A Request for Records

The Ontario Butterfly Atlas was printed in 1991. The stated purposes of the atlas were three-fold:

- 1) To summarize what is presently known about the distribution and some characteristics of Ontario's butterflies,
- 2) To encourage lepidopterists and others who may be interested in further study to explore the distribution of Ontario's butterflies,
- 3) To provide a reference for planning efforts to conserve our rarer species and those that are in danger of extirpation.

It has been over 10 years since the atlas was produced and since then, a lot of new data has been gathered (e.g. those records published in the annual TEA Lepidoptera summaries) and a good deal of older information has become more accessible. For example, collection data for all of the specimens in the major institutional collections (as well as many in private collections) were entered into a large database as part of the "Butterflies of Canada" project. This project culminated in the publication of the excellent book "The Butterflies of Canada" by Ross Layberry, Peter Hall and Don Lafontaine in 1998. In the interest of remaining current, and in order to incorporate the additional records, the TEA has committed to producing a Second Edition of the Ontario Butterfly Atlas.

As part of the preparation phase, all of the records from the TEA annual lepidoptera summaries are being databased and assigned geographic coordinates. This stage is important in order for the records to be mapped using computer-based GIS (Geographic Information System) software. A fully databased set of records acts as an important benchmark and is a very valuable and powerful tool. The printing of the revised atlas and the associated database will aid in the conservation of species by identifying areas where rare species are found so that responsible land-use planning decisions can be made. Ontario's Natural Heritage Information Centre (NHIC) is assisting with the project by providing technical assistance and database support. This past summer, Ian MacIsaac, a summer student working at the NHIC, performed a monumental task. Over the course of the summer, Ian entered and assigned geographic coordinates (by referring to topographic maps) for all of the butterfly records in the TEA summaries from 1986-1995 - a total of nearly 24,000 records! The records from 1969-1985 and from 1996-present still need to be databased and georeferenced and the plan is to have this phase completed by the end of 2003. In addition to the above, Tony Holmes, long-time TEA member and co-author of the first edition of the atlas, is databasing his own personal records and those records accumulated for the first edition that are not featured in the annual summaries.

How can you help?

Obviously, the accuracy and the usefulness of the Ontario Butterfly Atlas are only as good as the records provided. Over the course of the preparation for this atlas, I may be contacting those of you who have submitted records to the annual summaries in the past in order to verify the location of some of your records (to ensure their proper placement on the maps). In addition, if you have records that have not been submitted in the past, I would encourage you to submit them so that they may be incorporated into the second edition of the atlas. Finally, if your records have been submitted to the past summaries, but you happen to have them in your own database or spreadsheet at home, please consider re-submitting them in the Ontario Butterfly Atlas database format. This will save someone else the time of re-entering them from the printed version of the annual summaries and will therefore also reduce the chances of data entry errors.

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 (and whether a sight record or collected), observer(s) and observation date. An accurate UTM and/or Latitude/Longitude reference either using a GPS or 1 inch maps is extremely useful but not essential. Additional useful information includes behavioural notes, habitat, and the repository of any collected material (e.g. personal collection, Royal Ontario Museum, etc.). As mentioned above, it is strongly encouraged for contributors to submit their data electronically in the form of a spreadsheet or database. A more detailed "Notice to Contributors" as well as a copy of the database fields will be emailed or mailed to potential contributors that we have contact information for. We encourage those of you who may not receive this package, as well as those of you who may be a new contributor, to contact Colin Jones and he will be more than happy to send you a copy.

All submissions should be received by November 30, 2003.

Send to:

Colin D. Jones  
Box 182, Lakefield, ON K0L 2H0  
Tel (home): 705-652-5004  
Tel (work): 705-755-2166  
email: [naturalist@algonquinpark.on.ca](mailto:naturalist@algonquinpark.on.ca)

## 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 February 28, 2003. 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: Jeff Crolla (2-642 Dovercourt Road, Toronto, ON M6H 2W6. Home: 416-533-2267, jeff@primus.ca).

### 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, 2002. 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 Ontario Insects, Volume 4, Number 3, May 1999, pages 48-52 or a previous issue of Ontario Odonata.

## ITEMS FOR SALE THROUGH THE TEA

Books: reproductions of out-of-print books

The Odonata of Canada & Alaska (3 volumes) by E.M. Walker

\$196 Can (\$190 for TEA members who pick it up); In USA: \$145 US surface; \$150 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: \$23 US surface; \$26 US airmail

The North American Dragonflies of the Genus Aeshna by E.M. Walker (1921) with colour plates

\$65 Can (\$60 for TEA members who pick it up); In USA: \$50 US surface; \$53 US airmail

The North American Dragonflies of the Genus Somatochlora by E.M. Walker (1925)

\$55 Can (\$50 for TEA members who pick it up); In USA: \$43 US surface; \$46 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. \$34 Can; In USA: \$25 US.

Books: T.E.A. publications

The Ontario Butterfly Atlas by A.M. Holmes, R.R. Tasker, Q.F. Hess, A.J. Hanks (1991)

ISBN: 0921631111 \$25 Can (\$20 for TEA members who pick it up); In USA: \$20 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: Volume 1-3 (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*.

Volume 2 (16 articles plus summary). Articles discuss significant range extensions ecology, regional lists, conservation and information on a museum collection.

Volume 3 (18 articles plus summary). Articles include county and regional lists, range expansions, behavioural notes, conservation status and identification problems.

Cost per volume: \$25 Can; In USA/overseas, \$25 U.S.

Checklist of the Butterflies of the Toronto Region: 135 years of history (Second edition)

Includes flight seasons. Compiled by Barry Harrison.

\$2.50 Can (\$2 for TEA members who pick it up); In USA: \$3 US

For complete details and to order, contact:

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



# Flea Market



## Wanted: volunteer to do an afternoon session on insects with kids

Joanna Angus is camp director for Talents Within, a charitable organization that runs a six week summer day camp in High Park for underprivileged children. Last summer was their first summer and it was a great success. Many of the children were very interested in insects and brought in containers to capture crickets and other bugs. They thought that it would be great for them to learn more about these bugs that they are seeing in High Park.

The timing for this would be either the 14th of July or the 28th of July in the afternoon from 1 to 3 pm.

Please contact Joanna directly for more information or if you are interested:  
Tel: 416 979-2635  
Email: campdirector@talentswithin.ca

## FOR SALE

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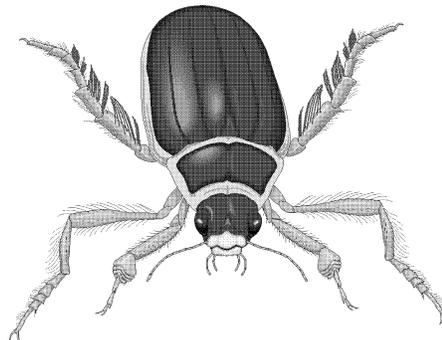
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## Notice to Contributors

### Who Can Contribute:

Observations, articles, etc., to be published in Ontario Insects, are welcome from members of the Toronto Entomologists' Association. There are no page charges, however, submissions from non-members will require a membership purchase prior to publication. 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

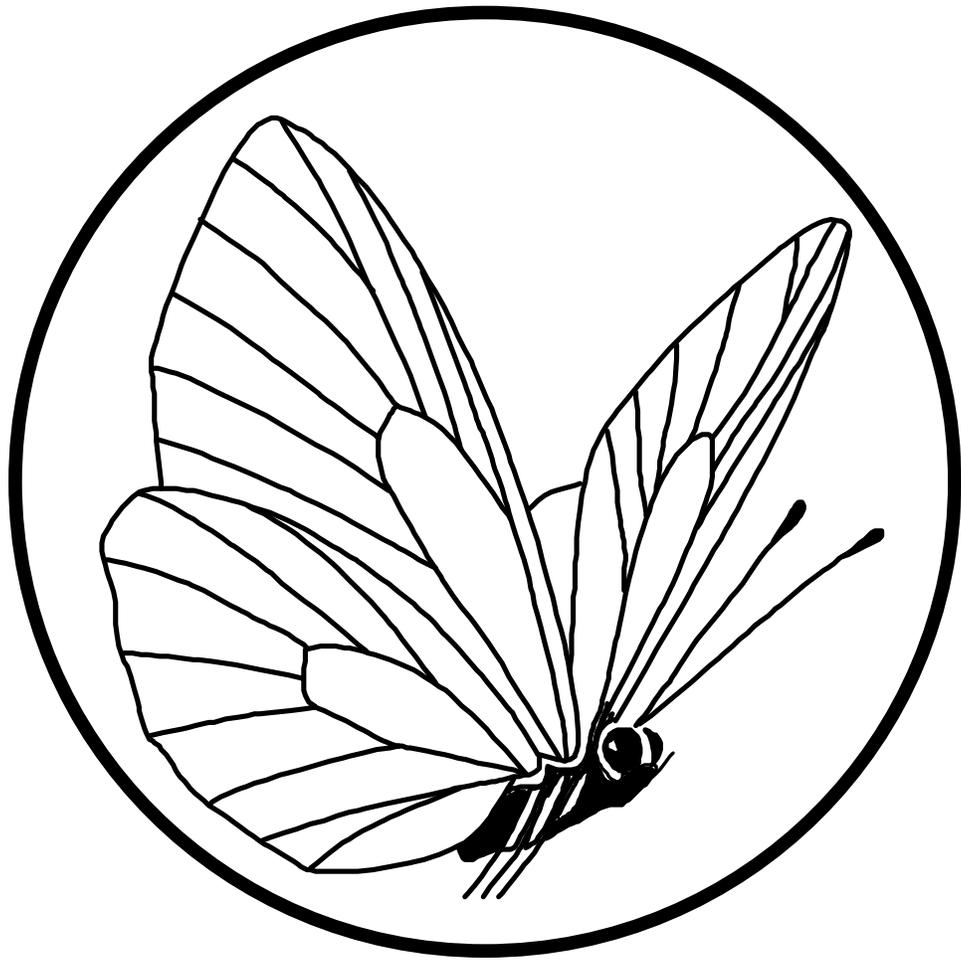
Opinions, Letters, Queries -anything entomological under 500 words that may be of interest to the membership

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 a 600 dpi 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.





# ONTARIO INSECTS

THE NEWSJOURNAL OF THE TORONTO ENTOMOLOGISTS' ASSOCIATION



VOLUME 8, NUMBER 3

MAY 2003

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Front Cover Photograph: Male Frosted Whiteface (*Leucorrhinia frigida*). Photo taken on at Frontier Lake, Algonquin Park by Michael Oldham.

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## DEADLINE INFORMATION - Members Please Note:

The deadline for submissions to the September 2003 issue of Ontario Insects is September 1. Late submissions may be added at the discretion of the Editor after that date. If there are any questions or concerns regarding submissions, please feel free to contact Colin Jones at the address below.

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Submissions to: Colin D. Jones, Editor of Ontario Insects, Box 182, Lakefield, ON, K0L 2H0, [naturalist@algonquinpark.on.ca](mailto:naturalist@algonquinpark.on.ca), (705) 652-5004

TEA members are welcome to submit any entomologically relevant materials. Please see the inside back cover for Notice to Contributors for more information. Deadlines for submission are 1 month prior to publication.

For general inquiries about the TEA contact: Nancy van der Poorten, President, TEA, 164 Morse St. Toronto, ON, M4M 2P8, [nmg.vanderpoorten@sympatico.ca](mailto:nmg.vanderpoorten@sympatico.ca), (416) 466-9013

## 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.

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Annual dues are as follows:

Individual	\$25
Student	\$15
Family	\$30

All membership queries and payment of dues can be directed to Alan Hanks, Treasurer, 34 Seaton Drive, Aurora, Ontario, Canada, L4G 2K1. (905) 727-6993.

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

## Ontario Weed Control Act

In October 2002, the Ministry of Agriculture and Food issued a clarification of the Weed Control Act: "it has been clarified that the intent of the Weed Control Act is to protect agricultural and horticultural [i.e. commercial horticultural] land from noxious weeds. The Act does not reference human health as a reason for controlling noxious weeds. ... As a result, under section 22 of the Act, control of any noxious weeds, including poison ivy and common ragweed does not apply if they "are far enough away from any land used for agricultural or horticultural purposes that they do not interfere with that use."

Bill Ingrassia, Director, Crop Technology, Agriculture and Rural Division, OMAF has also informed me that "the only change we have made is in respect to where and when a Weed Inspector should or can issue an order to destroy noxious weeds under the Weed Act. It does not change personal choices of weed control. Municipalities can still develop local bylaws to deal with their issues. Individuals can still control weeds on their property by spraying or cultural practices if they choose. Some municipalities are considering bylaws to ban spraying of weeds but this does not affect the Weed Control Act since the Act does not specify how the weeds must be controlled."

OMAF is having training sessions for their Weed Inspectors in April in which they will discuss the issue of how municipalities deal with weeds in urban settings.

## Arctic and Boreal Entomology Field Course

### ARE YOU INTERESTED IN:

- the ecology of insect communities across one of the world's most important ecotones?
- the diversity, taxonomy and evolution of the northern insect fauna across the northern limit of trees, from the boreal forests to the arctic tundra?

### GENERAL SCOPE OF COURSE:

Interactions of the northern entomofauna with biotic and abiotic elements (e.g. plant/insect relations; entomopathogens; insects and wildlife; coastal and freshwater habitats). Behavioural adaptations of the northern entomofauna. Effects of disturbances such as fire, vehicles (soil compaction), and human habitation.

### INSTRUCTORS:

- Peter Kevan - Professor University of Guelph  
Rob Roughley - Professor University of Manitoba  
Others are expected to join the team

### WHERE:

Churchill Northern Studies Centre (CNSC), Churchill, Manitoba.

Churchill is situated on Hudson Bay at the northern limit of trees. The CNSC is in the ecotone between the boreal forest and the tundra. Some few kilometers south, is the boreal forest proper, to the north is sub-arctic tundra, sparsely treed with krumholz.

### COST:

\$1,000 US (around \$1500 CND) which includes room and board at the CNSC, supplies, use of equipment and laboratory space. Accommodations are modest, but comfortable. The laboratory space is spare, but functional. Cost does NOT include travel to and from Churchill.

### FORMAT:

Dates: August 9-24, 2003

### Evening lectures:

- (about 5) and discussions.

### Field excursions to:

- tundra and krumholz
- rock outcrops and seashores
- boreal forest and glacial moraines
- tree-line

### Field & related exercises:

- collecting and trapping methods (pit-falls, Berlese / Tulgren funnels, malaise traps, etc.)
- insect/plant identification and curation; adaptations and behavioural observation and quantification; diversity and abundance relationships

### Individual Projects:

- to be according to personal interests

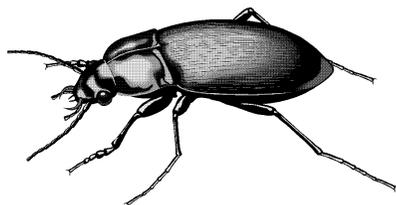
If you are interested in this course, please contact Peter Kevan directly (pkevan@uoguelph.ca) with the e-mail header "arctic entomology course".

Peter G. Kevan - Dept. of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1, Canada

## Oops!

In Steve Marshall's excellent article The Rediscovery of the Lake Huron Locust in Ontario in the January 2003 issue of Ontario Insects, I created embarrassing errors in all of the photographs and captions. Figures 1 and 2 are switched. In addition, in Figure 3, the Seaside Locust is actually on the right and the Lake Huron Locust is on the left (not the other way around!). I sincerely apologize to Steve and to the readership. Included with this issue of OI are those two pages printed over correctly. Please paste them over the existing pages.

Your red-faced editor, Colin



# Upcoming Field Trips



Saturday June 7, 2003, 10 AM

DRAGONFLIES & OTHER INSECTS OF THE ROUGE VALLEY

LEADER: MICHAEL VANDER POORTEN

The Rouge Valley has many different habitats - forest, pond, meadow - so this will be a great opportunity to hone our odonate and other insect ID skills early in the season. Meet at 10 a.m. on the road outside the Pearse House - Rouge Park Interpretive Centre. From Sheppard Ave, go north on Meadowvale Rd. Take the exit to the Toronto Zoo but turn RIGHT at the first turn (turning left will take you to the Zoo itself). The Interpretive Centre is just ahead on the right; park on the road shoulder. No collecting in Rouge Park. Bring nets, containers, binoculars, lunch, water, hand lens.

Tuesday, July 1, 2003, 9 AM

T.E.A. EAST TORONTO BUTTERFLY COUNT

COORDINATOR: TOM MASON

Come out and count butterflies in the Rouge or Don Valley areas. This is an official NABA count and the T.E.A. will pay your participation fee to NABA. Meet at the Pearse House (see directions under June 7) at 9 a.m. Please call Tom Mason (905- 839-6764) if you plan to participate. Bring nets, containers, lunch, water.

Saturday July 19, 2003, 6 PM

MOTHS ON THE MORAINE

LEADER: DAVID BEADLE

We're going to repeat our highly successful (over 100 species) outing that starts in T.E.A. member Brian Henshaw's garden and moves to the Moraine before dusk. Meet at 172 Way St. in Brooklin at 6 p.m. to check the moths Brian has lured in overnight. Brooklin is just north of the junction of Hwy 7 (Winchester Rd.) and Hwy 12 (Baldwin St.). Turn northwest onto Way St. from Baldwin. No collecting. Bring insect containers, a flashlight and wear something warm: it gets cool at night on the Moraine.

Tuesday, July 22, 2003, 8:15 PM

HIGH PARK MOTH NIGHT

LEADERS: DAVID BEADLE & TOM MASON

This is a joint outing with the Friends of High Park. Members of the public are invited to join T.E.A. members Dave Beadle, Carolyn King, Tom Mason and Karen Yukich for an evening of moth catching and identification. A \$2 donation is requested. Meet at the benches across from the Grenadier restaurant at 8:15. Children especially have enjoyed this outing in the past. For more information contact Carolyn King at 416-222-5736 or cking@yorku.ca. No collecting. Bring insect containers and a flashlight.

Saturday August 23, 2003, 10 AM

SPIDERS OF BLACKWATER/BEAVER CREEK

LEADER: TOM MASON

Blackwater is a very productive spot for birds, lepidoptera, odonates and SPIDERS. We had a great time here last year and we're going back to see how the number and diversity of spiders compare to last year. Meet on the road shoulder where Beaver Creek flows under Hwy 12 just south of Blackwater. Bring insect containers, nets, hand lens, water, lunch.

NOTE: The purpose of these outings is educational. For all outings, except the TEA Butterfly Count and the High Park Moth Night, please contact Carol Sellers at 416-421-7398.

Meeting Dates for 2003/2004 are as follows: Saturdays at 1 PM; September 27, 2003 (member's meeting, bring slides, photos, specimens etc), October 25, 2003, November 22, 2003, January 24, 2004.; Speakers and topics will be printed in later issues of OI.



# 2003 Ontario Insect Counts



Compiled by Bob Bowles, North American Butterfly Association Eastern Canada Regional Editor.

## BUTTERFLY COUNTS

DATE	LOCATION	CONTACT	TELEPHONE	EMAIL
June 7	East Side Algonquin	Colin Jones	(705) 652-5004	colin.jones@mnr.gov.on.ca
June 21	McGregor Point	Mary Rapati	(519) 389-6231	tony.rapati@sympatico.ca
June 22	Muskoka Bala	Lou Spence	(705) 765-6072	louspence@muskoka.com
June 28	Pinery Prov. Park	Ben & Brenda Kulon	(519) 869-2833	bkulon@cogeco.ca
June 28	Orillia	Bob Bowles	(705) 325-3149	rbowles@rogers.com
June 29	Oshawa	James Kamstra	(905) 985-4497	jkamstra@gartnerlee.com
July 1	Toronto T.E.A.	Tom Mason	(905) 839-6764	tmason@torontozoo.ca
July 5	Lake Dore	Chris Michener	(613) 625-2263	cmichener@renc.igs.net
July 5	Windsor	Paul Pratt	(519) 966-5852	pprat@city.windsor.on.ca
July 5	Severn Township	Nancy Ironside	(705) 326-4384	nancy.ironside@encode.com
July 5	Long Point	Chauncey Wood	(519) 426-0039	cwood@kwic.com
July 6	Skunk's Misery	Ann White	(519) 457-6586	dwhite@odyssey.on.ca
July 6	Sunderland	James Kamstra	(905) 985-4497	jkamstra@gartnerlee.com
July 6	Manion Corners	Peter Hall	(613) 733-0698	hallp@agr.gc.ca
July 9	Hwy 60 Algonquin	Colin Jones	(705) 652-5004	colin.jones@mnr.gov.on.ca
July 10	Presqu'ile Prov. Park	Philip Careless	(613) 475-4324	pcareles@uoguelph.ca
July 12	Hog Island	Chris Michener	(613) 625-2263	cmichener@renc.igs.net
July 12	Toronto Centre	John Carley	(416) 766-1330	carley.la@sympatico.ca
July 12	South River	Martin & Kathy Parker	(705) 386-1722	mkparker@onlink.net
July 12	Haliburton Highlands	Ed Poropat	(705) 457-3018	edporopat@halhinet.on.ca
July 13	Clear Creek	Steve Robinson	(416) 444-8419	vfn@ontarionature.org
July 13	Carden Plain	Bob Bowles	(705) 325-3149	rbowles@rogers.com
July 13	Rondeau Prov. Park	Sandy Dobbyn	(519) 674-1772	sandy.dobbyn@mnr.gov.on.ca
July 19	Petroglyphs	Jerry Ball	(705) 745-3272	
August 2	Pelee Island	Bob Bowles	(705) 325-3149	rbowles@rogers.com
August 9	Point Pelee	Park Office	(519) 322-5700	sarah_rupert@pch.gc.ca
date unknown	Bruce Peninsula	Cindy Cartwright	(519) 389-2585	pom@bmts.com
date unknown	Misery Bay	Nancy Ironside	(705) 326-4384	nancy.ironside@encode.com

## ODONATE COUNTS

DATE	LOCATION	CONTACT	TELEPHONE	EMAIL
July 10	Algonquin	Colin Jones	(705) 652-5004	colin.jones@mnr.gov.on.ca
July 19	Carden Plain	Bob Bowles	(705) 325-3149	rbowles@rogers.com
August 2	Lake Dore	Carey Purdon	(613) 625-2610	purdon@renc.igs.net
August 3	Pelee Island	Bob Bowles	(705) 325-3149	bowles@bconnex.net

ALL PARTICIPANTS ARE ENCOURAGED TO CONTACT COUNT CO-ORDINATORS PRIOR TO THE COUNT DATE

## Tracing the Big Carpenter in Ontario

by Tatiana Romankova

Spring has arrived so let's speak about bees. Everyone is familiar with the Honey Bee (*Apis mellifera* Linnaeus). Then there is the bumble bee - actually 25, since in Ontario we have at least 20 species of nest-building bumble bees (genus *Bombus*) and 4 species of cuckoo bumble bees (genus *Psithyrus*). All of them, as we know, are social insects, but while the honey bee family survives for several years, the bumble bee family passes away at the end of the warm season. Only fertile females will over-winter in some hidden place to begin new life early next spring.

In spring, the female bumble bee will be feeding on the first flowers, building a new nest, laying eggs, and providing the first larvae with pollen and nectar. The weather at that time is tricky. The bumble bee-mother may be in trouble because of frosts, insufficient blossoms, and not enough sunshine hours to accumulate energy just sitting under the sun's rays. Therefore, the first members of the new family are much smaller in size than their younger brothers and sisters. Consequently, in early spring you can see the major bumble bees, with a body length about 30 mm, and the minor ones, about 4 to 5 mm long. In spite of their serious look, bumble bees are remarkably peaceful folk. They do not sting even to protect their nest when you are annoying them while discovering it. Every biologist would say that it is impossible to overrate the role of bumble bees as pollinators. What could be more exciting than watching the first bumble bees floating above the newly warmed-up earth, working on ephemeral flowers of violets, colt's-foot, dandelions, and hepatica in that fragrant spring air! You can close your eyes and enjoy listening to the life-asserting buzzing, which can not be drowned out even by a choir of birds.

Let us get back to our business. In Ontario we have more than 240 species of solitary bees. About 40 species among them are cuckoo bees (laying eggs in the nests of other bees) and the others are nest-building species. By the time of their nesting activity, we can distinguish spring-early summer, summer, and late summer bee species groups occurring in Ontario fauna. Most species have only one generation per year. At the end of their flight period, which lasts 40 to 60 days, all adults die.

The following year, after coming out from the nest, the female nest-building solitary bee works on her nest and provides her progeny with food all on her own. The substrate for nesting, nest material, and the architecture of the nests are specific for each species. Bees nest in soil, in dead wood, or build nests in the open on some surface. Materials used for the nest might be clay, pieces of leaves and petals cut by the female using her jaws, resin collected from trees; or it might be plant down (cotton) collected from such plants as fire weed, mullein, helichrysum, and others.

When the cell is built, the female provides it with pollen and nectar, lays an egg on the surface of the food, and closes the cell. The new bees will emerge from the nest next year (in the case of one generation per year, like most species in Ontario). As a result, the solitary bees never see their progeny.

Please stop and stay at a flower - better if the flower colour is yellow, purple, or blue, but some white ones are very good too - and watch the flower visitors. Most of them will be solitary bees, but only if no pesticides have been used around there. The bee might be from 4 to 30 mm in size; black, reddish-brown, metallic shiny blue or green, ornamented with yellow or white spots and bands; abundantly pubescent with bright yellow, orange, white or black hairs. The biggest solitary bee in Ontario is the Big Carpenter Bee (*Xylocopa virginica* Linnaeus; "xulon" - wood in Greek and Linnaeus was the scientist who described the species first). The carpenter bee has a dark, bluish metallic luster on the



Figure 1. Carpenter bee face: male (top) and female (bottom).



Figure 2. Female Big Carpenter Bee (*Xylocopa virginica*)

body and wings. On the thorax and the base of the abdomen, the pubescence is more or less bright yellowish. Carpenter bees are often confused with bumble bees. However, it is not difficult to distinguish them if you look carefully. First of all, the individual with a bright white face will always be a male carpenter bee (Figure 1). There are no bumble bees with a coloured face, only black. The abdomen of the carpenter bee at the middle of the dorsal side is scarcely pubescent, naked, and shiny (Figure 2), whereas a bumble bee's abdomen is usually deeply pubescent. If it is possible to examine the bee more closely,

pay attention to the malar area - the space between the eye and the base of the mandible. The carpenter bee has a narrow space between the eye and the base of its mandible, while the bumble bee has a wide space (Figure 3).

In Ontario, you can encounter the first carpenter bees in late March, and they disappear with the first cold weather in late September or early October. Please remember that they are peaceful animals. Occasionally, males may chase you (all male bees are stingless). Do not be offended. They are just patrolling their nest territory and driving away any invader.

The world fauna of the genus *Xylocopa* includes 469 species (Michener, 2000). Two species occur in eastern Northern America. Only one species resides in eastern Canada. Sometimes, locally, we can see the carpenter bee in great numbers. Their tendency to nest in aggregation causes a special sensitivity of local populations to pesticides and other destructive factors.

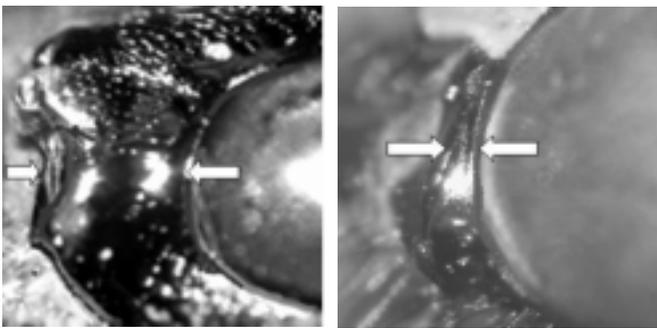


Figure 3. Malar area of bumble bee (left) and carpenter bee (right). The eye appears on the right side of each photograph.

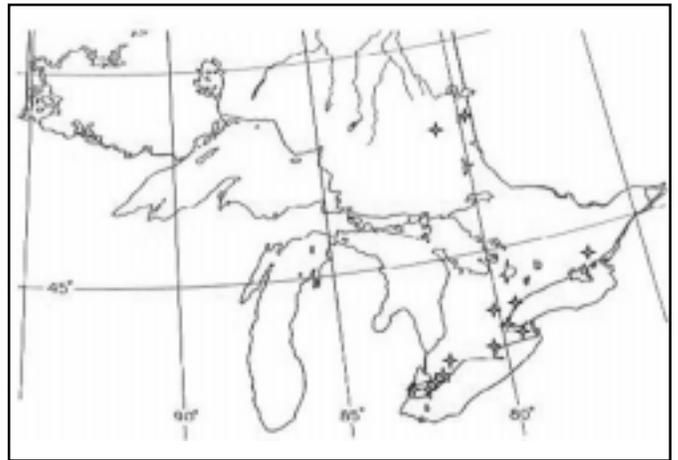


Figure 4. Distribution of Big Carpenter Bee in Ontario based on specimens in major Ontario collections.

Recent studies of the major Ontario collections reveal that for now it is difficult to outline the northern boundary of the species. Among 120 studied specimens, only two represent locations above 45°N latitude (47° 07' N, 80° 22' W, and 48° 10' N, 79° 24' W) (Figure 4). There is not enough information on ecological and biological peculiarities of the carpenter bee population in Canada.

“The more we know them, the more we’ll love them”, and the more chances of ensuring the well-being of the Big Carpenter Bee. Any observations on distribution and behaviour would be very welcome, especially from the northern regions. Please address the information to my attention at:

The Centre for Biodiversity and Conservation Biology  
 Royal Ontario Museum  
 100 Queen’s Park  
 Toronto, Ontario M5S 2C6

I am grateful to Drs. D. Currie and C. Darling, Royal Ontario Museum, S. Marshall and M. Buck, University of Guelph, and J. Huber, Canadian National Collection, who made their collections available to me. I am happy to express my deep appreciation to a great amateur of all living creatures Ms. Maraya Raduha, for her interest in the bees and priceless help in writing of the paper.

REFERENCES

Michener, C. D. 2000. *The Bees of the World*. Baltimore & London: Johns Hopkins University Press. 913 pp.

## Algonquin Park Butterfly Counts: results from 2002

by Colin D. Jones

### Fifth Annual Algonquin East Side Butterfly Count

On Saturday, June 1, 2002, the Fifth Annual Algonquin East Side Butterfly Count took place – it would have been the Sixth Annual Count had last year's not been cancelled due to weather. The 15-mile diameter count circle is centred at Pretty Lake, Edgar Township, and includes the Barron Canyon Road from Lake Travers in the northwest to Forbes Lake in the southeast. The day was very pleasant with sunny skies and moderate temperatures but the morning was a little slow-going on the butterfly front due to cool temperatures. By the afternoon, however, things had picked up quite a bit but certainly not enough to break any records.

In total, 16 observers put in 35.5 party hours, and yet only recorded 428 butterflies of 26 species – far below average for this count. The cool spring and resulting delayed flight season was certainly a factor in the lack of numbers and species this year. The highlight of the day were two *Olympia* Marbles found by Jeff and Angela Skevington along the hydrocut between the Grand Lake Marsh and the Barron Canyon Rd. *Olympia* Marble was new for the count and is rare in Algonquin Park, represented by only a handful of records. Other highlights included a single Harvester found by Jason Dombroskie, John Klymko and Mike Burrell, and eight Grey Hairstreaks (found by three parties at multiple locations). Although it was a Macoun's Arctic year (the adults only fly in even numbered years in Algonquin Park) it was obvious that they were not yet flying.

Participants: Ethan Andermann, Jean Brereton, Mike Burrell, Jason Dombroskie, Colin Jones, Jenny Kellar, John Klymko, Chris Michener, Chris Robinson, Jeff and Angela Skevington, Brad Steinberg, Rick and Kelly Stronks, Nancy and Michael van der Poorten.



Spring Azure. Photo by C.D. Jones

Those interested in participating in either of the year 2003 Algonquin Butterfly Counts (Saturday June 7 - East Side and Wednesday, July 9 - Hwy 60) should contact the author at P.O. Box 248, Lakefield, ON, K0L 2H0, 705-652-5004 or by email at colin.jones@mnr.gov.on.ca.

### Eighth Annual Algonquin Highway 60 Butterfly Count

On Saturday, June 29, 2002, the eighth annual Algonquin Highway 60 Butterfly Count was held. The 15-mile diameter count circle is centred at Rutter Lake, Sproule Township and includes the Highway 60 corridor from Jake Lake in the west to the Park's boundary in the east.

In total, 39 observers put in 83.5 party-hours – a record high number of participants and effort. During the day, 1499 individual butterflies of 35 species were tallied – not a bad result for a pretty poor year overall for butterflies. Although the numbers weren't too bad, the butterflies per party-hour tied with 2000 for an all-time low of only 18. In fact, this year's count was very similar to that of 2000, the delayed spring resulting in early species still being present in relatively high numbers. Such species include the duskywings, Pepper and Salt and Common Roadside Skippers, Spring Azure and Silvery Blue. Every year is different, however, and this year had several interesting highlights. We obviously hit the peak of several species with new count highs for Canadian Tiger Swallowtail, Silver-bordered Fritillary, Common Ringlet and Little Wood-Satyr. Single Harvesters (rare in Algonquin) were found at two locations. One species was new for the count. Area A found a total of six American Coppers (rare along the Highway 60 corridor) in the vicinity of the East Gate. Noticeable absentees were the *Speyeria* fritillaries, represented by only 10 *Atlantis* Fritillaries, and the *Polygonia* anglewings, represented by only a single *Eastern Comma*.

Participants: Dennis Barry, Christian Benjamin, Chris Boetger, Mike Burrell, Margaret Carney, Marianne Clark, Bev, Kevin and Peter Clute, Hugh Currie, Jason Dombroskie, William Godsoe, Sunita Hilton, Ashley Howatt, Colin, Shan and Klara Jones, Jenny Kellar, John Klymko, Alison Lake, Gordon Lewer, Ethan and Lori MacKay, Lee Pauze, Carl Rothfels, Lou Spence, Ron Stager, Brad Steinberg, Dan and Matt Strickland, Kelly and Rick Stronks, Ron Tozer, Devon Turner, Michael and Nancy van der Poorten, Brad Welch, Cheryl and Rob (sorry I didn't get your last names!).

A full species list for both counts, with totals, is found in the table on the next page. Species shown in bold face are new species for the respective counts.

Ontario Insects

ENGLISH NAME	SCIENTIFIC NAME	EAST SIDE	HWY 60
Dreamy Duskywing	<i>Erynnis icelus</i>	22	17
Juvenal's Duskywing	<i>Erynnis juvenalis</i>	2	16
Columbine Duskywing	<i>Erynnis lucilius</i>	4	
	<i>Erynnis sp.</i>	6	2
Arctic Skipper	<i>Carterocephalus palaemon</i>	1	44
European Skipper	<i>Thymelicus lineola</i>		241
Peck's Skipper	<i>Polites peckius</i>		2
Tawny-edged Skipper	<i>Polites themistocles</i>		13
Long Dash Skipper	<i>Polites mystic</i>		60
Hobomok Skipper	<i>Poanes hobomok</i>		56
Dun Skipper	<i>Euphyes vestris</i>		3
Pepper and Salt Skipper	<i>Amblyscirtes hegon</i>		3
Common Roadside Skipper	<i>Amblyscirtes vialis</i>	12	13
Skipper sp.			24
Canadian Tiger Swallowtail	<i>Papilio canadensis</i>	5	199
Mustard White	<i>Pieris oleracea</i>	12	
Cabbage White	<i>Pieris rapae</i>		3
	<i>Pieris sp.</i>		1
Olympia Marble	<i>Euchloe olympia</i>	2	
Clouded Sulphur	<i>Colias philodice</i>	42	15
Orange Sulphur	<i>Colias eurytheme</i>		1
Pink-edged Sulphur	<i>Colias interior</i>	3	3
	<i>Colias sp.</i>	8	5
Harvester	<i>Feniseca tarquinius</i>	1	2
American Copper	<i>Lycaena phlaeas</i>		6
Brown Elfin	<i>Callophrys augustinus</i>	4	
Hoary Elfin	<i>Callophrys polia</i>	2	
Eastern Pine Elfin	<i>Callophrys niphon</i>	39	
Western Pine Elfin	<i>Callophrys eryphon</i>	1	
Pine Elfin sp.		2	
Grey Hairstreak	<i>Strymon melinus</i>	8	
Spring Azure	<i>Celastrina ladon</i>	74	8
Summer Azure	<i>Celastrina neglecta</i>		6
Silvery Blue	<i>Glaucopsyche lygdamus</i>	97	19
Blue sp.		21	4
Atlantis Fritillary	<i>Speyeria atlantis</i>		10
Silver-bordered Fritillary	<i>Boloria selene</i>		80
Meadow Fritillary	<i>Boloria bellona</i>	2	
Silvery Checkerspot	<i>Chlosyne nycteis</i>		10
Harris' Checkerspot	<i>Chlosyne harrisii</i>		45
Northern Crescent	<i>Phyciodes cocyta</i>		2
Eastern Comma	<i>Polygonia comma</i>	2	1
Green Comma	<i>Polygonia faunus</i>	2	
Grey Comma	<i>Polygonia progne</i>	5	
	<i>Polygonia sp.</i>	7	1
Mourning Cloak	<i>Nymphalis antiopa</i>	7	2
American Lady	<i>Vanessa virginiensis</i>	9	2
White Admiral	<i>Limenitis arthemis arthemis</i>		247
Viceroy	<i>Limenitis archippus</i>		1
Eyed Brown	<i>Satyroides eurydice</i>		3
Little Wood Satyr	<i>Megisto cymela</i>		113
Common Ringlet	<i>Coenonympha tullia</i>		217
	<i>Satyrid sp.</i>		1
Chryxus Arctic	<i>Oeneis chryxus</i>	24	
Monarch	<i>Danaus plexippus</i>	1	11
Total Number of Species:		26	35
Total Number of Individuals:		428	1499
Number of Observers:		16	36
Number of Party-hours:		35.5	83.5
Butterflies/Party-hour		12	18
Cumulative Total Species		51	57

## Additions to the Butterfly List of Presqu'ile Provincial Park

by Philip Careless

Presqu'ile Provincial Park is a 10 kilometre peninsula jutting into Lake Ontario south of Brighton, a few kilometres south of Highway 401. Although Presqu'ile has no shortage of butterflies, it does possess an assemblage unlike that of the "mainland". While Red-spotted Purples, Bronze Coppers and Sliver-spotted Skippers are a regular component of mainland fauna, they are scarce or absent from Presqu'ile.

The less diverse fauna of Presqu'ile is commonly attributed to the peninsular effect or what Park staff term "Tombolo effect". The beach, dunes and interdunal slack or "Panne" area of the Park act as a deterrent towards mainland populations dispersing into Presqu'ile. Many reproductive individuals that drift into the Park find little suitable habitat in this portion of Presqu'ile and turn back. Individuals that cross the beach/panne/dune area, entering the field and deciduous forest that constitute the southern half of the Park, must exist as populations isolated from the mainland.

This low level of immigration from mainland populations (bottlenecking), makes small Park populations vulnerable to extirpation in unfavorable years. This isolated nature of Presqu'ile (from the perspective of butterflies) has resulted in fewer species in the Park than found on the mainland.

Despite the above, the last four years since the printing of the Butterflies of Presqu'ile (Gurr 2000), has shown that many species visit the Park (all be it in small numbers). Since early 1999, eight new species, and one subspecies, have been added to the Park Checklist and are reported here. Some were expected and others exceptional.

Leonard's Skipper (*Hesperia leonardus*)

Date: August 21, 2000

Location: Visiting a butterfly bush at a cottage backyard at the north end of the paved Newcastle Trail.

Sighted by: David Gilmore

Note: One specimen captured, clearly identified by Park Naturalists and released at the request of David Gilmore.

Little Glassywing (*Pompeius verna*)

Date: July 30, 2001

Location: Amongst Cow Vetch north of Chatterton point.

Sighted by: Philip Careless

Note: One specimen collected among many Dun Skippers. The specimen is in poor condition, and resides in the Park Collection.

Checkered White (*Pontia protodice*)

Date: Aug 27, 2001

Location: The junction of Beach 4 and the Natural Beach.

Sighted by: Philip Careless

Note: One specimen collected. It was with a number of Clouded Sulphurs (*Colias philodice*) and Cabbage Whites (*Pieris rapae*) flitting over short mustard plants in flower.

Specimen is in poor condition and resides in the Park Collection.

Hickory Hairstreak (*Satyrrium caryaevorum*)

Date: July 21, 2001

Location: Open field in between the north end of the Paved Newcastle Trail and the Cottages

Sighted by: Bill Gilmore

Note: One specimen collected and initially misidentified. The specimen is in good condition, and resides in the Park Collection.

Grey Hairstreak (*Strymon melinus*)

Date: July 7, 1999

Location: Roadside north of Chatterton Point

Sighted by: Philip Careless and Heather Robertson

Note: Two specimens were collected while feeding on Cow Vetch. In early September Mike Gurr collected another poorer specimen in the foredunes of Beach #1. The first two specimens are in good condition, and reside in the Park Collection.

Baltimore Checkerspot (*Euphydryas phaeton*)

Date: July 16, 2001

Location: Old Field on north side of Day Use #1

Sighted by: Bill and Mike Boyd

Note: One individual in good condition was seen and photographed. Oddly, no Turtle Head (the larval host plant) grows in the area where it was sighted, but Red Ash (a host plant for later instars) is common there. The excellent photos taken are in the park collection.

Milbert's Tortoiseshell (*Nymphalis milberti*)

Date: September 8, 2000

Location: Owen Point Trail

Sighted by: Ian Shanahan

Note: One individual was seen among many Red Admirals. Mr. Shanahan was unable to collect the specimen but sketched it in his notebook.

American Snout (*Libytheana carinenta*)

Date: July 28, 2002

Location: Open Field in between the north end of the Paved Newcastle Trail and the Cottages

Sighted by: Bill Gilmore

Note: One specimen was collected and has a damaged hindwing. The individual kept alighting on an arbor that Mr. Gilmore was reading under. The specimen resides in the Park Collection.

Red-spotted Purple (*Limenitis arthemis astyanax*)

Date: July 2, 2002

Location: Along Lighthouse Lane about 1km north west of the Lighthouse Parking-lot.

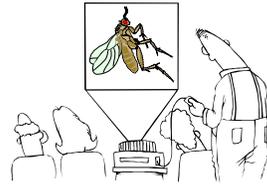
Sighted by: Bill and Margaret Gilmore

Note: David Bell recollects seeing this species in the late 1990's, sunning on a grape leaf at the confluence of the north Pioneer Trail and Paxton Rd. This 2002 sighting is the first confirmed sighting since then.

These new records and the pre-existing fauna bring up many curious questions about Ontario's butterfly fauna. What is it about some species that allows them to thrive in Presqu'ile while others have such a hard time getting a foothold? Do similar "peninsula effects" occur at other Ontario locations? Hopefully someone will further examine these Lepidopteran puzzles.

Literature Cited:

Gurr, M. 2000. Butterflies of Presqu'ile & Southern Ontario. Friends of Presqu'ile Park. 108 pp.



# Meeting Reports



## January

Sandy Smith

Insects of the Haliburton Forest

The first meeting of the year featured an excellent talk by Sandy Smith, associate professor of Forestry at U of T. Over the last few years she has been supervising a census of the insects of the Haliburton forest. Her talk included not only some of the results of their study but also the importance of sampling design in order to portray an accurate picture of the insect biodiversity within a forest.

Following Sandy's talk, there were many questions for Sandy about this fascinating study.

## February

Marvin Gunderman

Ontario's Insects on Film

Our speaker for the day was Marvin Gunderman, a TEA member and curator of entomology at McMaster University. Marvin told us of his passion for spiders and insects as a kid that was fueled by a summer job at the ROM, where he worked with experts in the field and did a lot of travelling and collecting. He gradually developed an interest in photographing insects. He brought his equipment and some gorgeous slides to show us. He recommended the book, *The Nature Photographer's Complete Guide to Professional Techniques* by John Shaw as being the best.

Marvin uses a system that includes a 135 mm lens and extension tubes and flash. If you use a macro lens, you need to be fairly close to your subject (a few inches), which as we all know, can be

difficult with insects. With the system that Marvin uses, he can be about 3 feet away and still get the 1:1 size. However, when you use the extension tubes you lose a lot of light and so must use flash. The advantage of using flash, though, is that you don't need a tripod and once you have your system set up, you can take photos with little thought. He usually shoots at F16, using Kodachrome 64 slide film. Focusing is done by moving the camera itself. The whole system is put together using a custom-made bracket.

After the technical aspects, Marvin showed us his slides. He brought a selection that covered the whole of the arachnids and insects, mostly of Southern Ontario. And Marvin didn't just show us his slides, but gave a little talk about each creature, giving us info about identification, habitat, habits, reproduction and feed strategies etc. He also had some SEM (scanning electron microscope) photos that were quite stunning. It was a great show for a gloomy winter day!

## March

TEA Annual Student Symposium

This meeting was our annual student symposium where students from Ontario universities presented their research on insects. We had four excellent talks (abstracts are in this issue of OI - see page ) and lively questions from the audience. Thanks to Peter Hallett, Chris Darling and Carolyn King for their help in making the symposium a success.

## Toronto Entomologists' Association Student Symposium

A dreary March 22, 2003 was livened up by interesting talks given by students from York and Brock Universities as well as the University of Toronto. We heard about Large Carpenter Bees and how social behaviour might arise, Karner Blue butterflies and the possibility of seeing them in Ontario again, Spruce Budworm larvae and the factors that affect their health and its implications for management, and the effect of forestry practices on insects. The prize for Best Talk was presented. Merne Powers was given the honour of choosing the best talk in the absence of Peter Hallett who usually chairs the meeting. The Best Talk 2003 was presented to Christina Campbell who presented a lively and focused discussion of her research on the horizontal transmission of a protozoan pathogen within Spruce Budworm populations. The abstracts of the four talks are presented here.

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### Horizontal Transmission of a Protozoan Pathogen within Spruce Budworm Populations

Christina Campbell (Supervisors: S.M. Smith and K. Van Frankenhuyzen)  
Department of Zoology, University of Toronto

Abstract: The spruce budworm *Choristoneura fumiferana* (Lepidoptera: Tortricidae) is a major forest pest throughout the boreal forests of North America. During outbreaks, extensive feeding on spruce and fir foliage results in massive tree mortality and economic loss. The cyclic nature of budworm populations may be driven by natural biotic factors. A parasitic protozoan, *Nosema fumiferanae* (Microsporida: Nosematidae), is often found at high levels during a budworm outbreak and delays budworm development and reduces fecundity. This sublethal pathogen is thought to be involved in the collapse of budworm populations. The participation of *Nosema* in the budworm population dynamics is complicated by two means of transmission: per os (horizontal) and transovarial (vertical). In the current paper, I explore the rate of horizontal transmission and spore production of *Nosema* in relation to spruce budworm population dynamics by examining differing levels of infection and larval instars. To mimic infection at different budworm densities, I will rear larvae in five infection ratios (infected to uninfected individuals). These ratios will provide critical knowledge on how the pathogen spreads and results in high infection levels during budworm outbreaks. My work will expand our current state of knowledge about insect-pathogen population dynamics in general, and help integrate information on disease transmission with current management plans for budworm monitoring and control. Most insect literature focuses on lethal pathogens and the involvement of sublethal pathogen in the system has largely been ignored.

Plant communities in Oak Savannahs in Ontario: Are we ready for reintroduction of the Karner Blue Butterfly (*Lycaeides melissa samuelis*)?

Pak Kin Chan (Supervisor: L. Packer)  
Department of Biology, York University

Abstract: The population of the Karner Blue Butterfly (*Lycaeides melissa samuelis*) has dropped by more than 99% in the past century due to destruction and fragmentation of the oak savannah habitat in North America. In 1991, the butterfly was extirpated in Ontario, which is the only Province where it was found in Canada. Restoration work has been performed on several oak savannahs in Ontario since then. Promising results have been obtained, but no systematic scheme has been employed to evaluate the quality of these restored sites to see if they are ready for reintroduction of the Karner Blue. This study tries to evaluate several potential Karner Blue reintroduction sites in Ontario by looking at both biotic (vegetation—especially the larval host plant *Lupinus perennis*, 1<sup>st</sup> and 2<sup>nd</sup> brood adult nectar source plants, and tending ant species) and abiotic (temperature, relative humidity and light intensity) aspects. Also, by comparing the biotic and abiotic aspects of these sites with those of the largest Karner Blue sites in the USA, recommendation can be made upon where butterflies should be taken in the USA for reintroduction in Ontario based on the degree of similarity among different sites in terms of vegetation community and microhabitat. Furthermore, comparison will be made when sites are grouped according to their management history so that the effects of different management methods (such as prescribed burn and thinning of the shrub layer) are compared. Recommendations will then be made upon future management strategies of the Ontario sites.

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### Social and Nesting Behaviour in the Large Carpenter Bees, *Xylocopa* sp.

Sean Prager (Supervisor: M. Richards)  
Department of Biological Sciences, Brock University

Abstract: Members of the bee genus *Xylocopa*, the large carpenter bees, are traditionally considered solitary. Solitary bees are characterized in part by a limited acceptance of intruders in their nests. Observations, however, suggest that some species are tolerant to conspecifics, suggesting an initial step towards the evolution of sociality. The construction of branched nests is also a factor leading to social interactions. In branched nests, females must share a common entrance and thus limited tolerance is required. It can therefore be expected that tolerant species

will coincide with branched nests, while intolerant species will be found in unbranched nests. A comparative approach was used to examine the evolution of branched nests and conspecific tolerance across the genus *Xylocopa*. In such an approach, traits are mapped onto an existing phylogeny and analyzed for possible trends. Due to conflicts between existing phylogenies, we created a new total evidence phylogeny. This phylogeny unambiguously accounts for 22 of the 53 commonly recognized subgenera. These analyses suggest that construction of branched nests and tolerance to conspecifics are ancestral traits in the large carpenter bees. Further, it is shown that there have been multiple reversions in both these traits. Finally, this information is used to make predictions for *Xylocopa virginica* in Ontario.

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Family Safe Forestry: Effects of single-tree selection harvesting on Hymenopteran diversity

João M. Sousa (Supervisor: S.M. Smith)  
Department of Zoology, University of Toronto

Abstract: Insects are a diverse and critical component of forests providing essential services such as pollinating plants, recycling nutrients, and being food items for many organisms. The most

important forest herbivores are the Lepidoptera (moths and butterflies), which are important pests and can cause widespread forest defoliation. Their most important natural enemy are parasitoids (Hymenoptera and Diptera), which place their eggs on or within the body of a host, ultimately killing it. Parasitoids aid in regulating lepidopteran population levels and potentially decrease the populations of species that are harmful to forest growth and survival. Single-tree selection logging is promoted as an ecologically sound silvicultural system within shade-tolerant mixed-wood forests of eastern North America, yet effects of such harvesting on insect diversity have not been considered. Many insect species are vertically stratified in habitat use, and so the effects of tree harvesting on abundance and richness within the canopy may be different than effects within the understorey. The current research examines the impact of single-tree selection logging on Hymenoptera abundance, family richness, and family diversity within the canopy and understorey of sugar maple-dominated stands in the Haliburton Forest & Wildlife Reserve. Specifically, the objectives are to: 1) determine if parasitoid communities differ between single-tree selection harvested and unharvested stands; and 2) compare differences in the parasitoid community between the canopy and understorey. This will provide essential information, not only on the possible mechanism for changes in diversity, but as well on the long-term sustainability of single-tree selection in terms of overall faunal diversity and forest health.



## The Bookworm

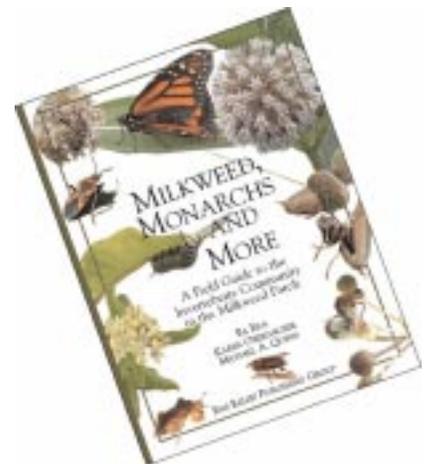


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### New Books

Butterflies of North America  
Kaufman Focus Guides  
Edited by Kenn Kaufman, Jim P. Brock  
ISBN: 0618254005; \$30.00  
Hardcover; 384 pages  
Publication Date: 03/02/2003  
More than 2,300 illustrations. Now available in bookstores.  
For more information:  
[www.houghtonmifflinbooks.com/catalog/titledetail.cfm?titleNumber=688330](http://www.houghtonmifflinbooks.com/catalog/titledetail.cfm?titleNumber=688330)

Milkweed, Monarchs and More - A field Guide to the Invertebrate Community in the Milkweed Patch  
By Ba Rea, Karen Oberhauser, Michael A. Quinn  
Soft Cover, 96 pages, 300 full-color photos.  
Bas Relief Publishing Group  
\$9.00 US plus \$2.50 postage and handling. Sets of 20 for \$7.50 each.  
For further information, contact Dr. Karen Oberhauser -  
[karen.s.oberhauser1@tc.umn.edu](mailto:karen.s.oberhauser1@tc.umn.edu)  
For a detailed description of the book and its contents, go to the MonarchLarval Monitoring Website at: <http://www.mlmp.org/> and read pages 15 and 16 of the "MLMP 2003 Newsletter".





# Monarch News

submitted by Don Davis



## Monarch Update

Researchers have found that North America's monarch butterflies have at least partially recovered from last year's devastating mass die-off in their overwintering sites, which killed approximately 80 percent of the wintering population in Mexico.

Tens of millions of the butterflies were killed as the result of an unusually cold and wet storm in January 2002. For years, scientists have argued that monarchs are more vulnerable to severe weather if the forest canopy in the sanctuaries is thinned, leaving them exposed to the elements.

Data collected this winter by researchers in the Monarch Butterfly Biosphere Reserve show that the monarch colonies at their overwintering sites occupied an area of approximately 8 hectares, or nearly 20 acres. The average area occupied by the monarchs every year from 1993 to 2001 has been approximately 9.6 hectares, according to a team of scientists who study the monarch colonies.

Monarch colony sizes are determined by measuring the perimeter and calculating the area occupied by the butterflies in their overwintering habitat. Before last year's storm, in December 2001, reserve biologist Eligio García reported an occupation of 9.35 hectares. Given the estimated mortality of 75 to 80 percent that occurred on January 14, 2002, the area occupied by the survivors after the storm would have been approximately 1.9 to 2.3 hectares. Thus, this year's reported 8 hectares may be considered a recovery in the mid range in comparison to annual averages in past years.

Once again this year, Dave Kust from Minnesota has been purchasing tags for the Monarch Watch program, while his family stays in the small town of Anganguero. Dr. Orley Taylor reports that few tags from the 2002 tagging season have been recovered, but in all, 1,100 tags were purchased. Most tags were from monarchs tagged in 2001, and recovered in the spring of 2002 after a bad spring storm killed millions of monarchs. A lack of funds prevented Monarch Watch from purchasing more tags from the local guides at the various monarch sanctuaries in Mexico. Dave Kust recently wrote about finding tag number BGQ 604 on a trail at the Chincua Colony, and commented that "it's probably one of those Canadian taggers, eh?". That monarch was released on Sept. 6/02 in east Toronto by T.E.A. member Don Davis. Another tag purchased has been put on a monarch in Iowa in 1993 by an associate of Dr. Fred Urquart.

Migrating monarchs were reported in extreme south Texas in early March and by April 4th, had reached Oklahoma, Kansas, North and South Carolina and Georgia. Local monarch enthusiasts were also finding eggs and larva on young milkweed. T.E.A. Past President Dr. Phil Schappert reported seeing his first monarch at the Stengl "Lost Pines" Biology Station south-west of Austin on March 16th, earlier than usual.

Over the last 10 years, PROFEPA (Mexico's Attorney General for the Environment), has demonstrated its resolve to look after the well-being of the monarch and its habitat in Michoacán and Estado de México.

An article that appeared in the March 30th issue of the Mexican newspaper

"Reforma" indicates that PROFEPA will temporarily close the reserves to tourism, until there are indications that the impact of tourism can be diminished. Some suggest that there are political motives to this announcement. PROFEPA's press release may indicate that they are trying to demonstrate that they are working hard in the Monarch Reserve, when in fact, illegal logging continues. One observer notes that this was announced 1 day before the scheduled closing for the season. This observer didn't see anything on the recent trip that justified these allegations or shutting down these sites.

NB: Excellent maps showing the progress of the monarch butterfly migration are posted at the Journey North Website - [www.learner.org/jnorth](http://www.learner.org/jnorth)

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Monarch Butterfly Researcher  
Recipient of NSERC Award

Dr. Barrie Frost, Professor, Departments of Psychology, Biology and Physiology, and Centre for Neuroscience Studies, Queen's University, Kingston, was a finalist of the Gerhard Herzberg Canada Gold Medal for Science and Engineering of the Natural Sciences and Engineering Research Council of Canada. As a finalist, Dr. Frost was the recipient of The NSERC Award of Excellence and received \$50,000.00 towards his research.

With another colleague, Dr. Frost developed a remarkable flight simulator for monarch butterflies. This butterfly research has already made international headlines by demonstrating that monarchs use a time-compensated sun compass, and not a magnetic one, to

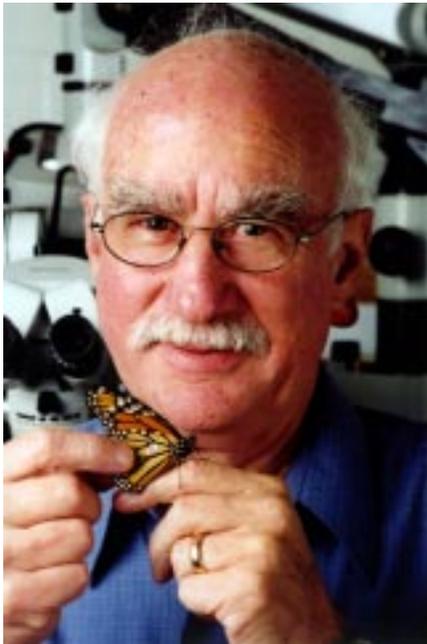
navigate on their incredible 3,500-kilometre journey to Mexico. Dr. Frost is now exploring the brain processes that enable monarchs to migrate.

Dr. Frost is currently carrying out similar research, noted above, with monarch butterflies in his native New Zealand.

More information about Dr. Frost's research can be found at the following two websites:

[www.nserc.ca/news/2002/win\\_frost.htm](http://www.nserc.ca/news/2002/win_frost.htm)

[pavlov.psyc.queensu.ca/~frostlab/](http://pavlov.psyc.queensu.ca/~frostlab/)



Dr. Barrie Frost

### Monarch Larval Monitoring Project

The Monarch Larval Monitoring Project is a citizen science project involving volunteers from across the United States and Canada in monarch butterfly research. It was developed by researchers at the University of Minnesota to collect long-term data on larval monarch populations and milkweed habitat. The overarching goal of the project is to better understand how and why monarch populations vary in time

and space, with a focus on monarch distribution and abundance during the breeding season in North America. More specific questions we are addressing include:

1. How do larval monarch population densities fluctuate throughout the breeding season in different parts of North America?
2. At what larval stages does the highest mortality occur?
3. What is the net reproductive potential for summer breeding monarchs?
4. What plant qualities affect female monarch host plant choice and how does this vary between milkweed species?
5. What is the timing of movement of reproductive monarchs throughout their breeding range?
6. How does monarch recruitment vary with larval habitat size and degree of disturbance?

To answer these questions, we have recruited volunteers to conduct weekly monarch and milkweed surveys, measuring per plant densities of monarch eggs and larvae and milkweed quality. The results of these volunteers' efforts will aid us in conserving monarchs and their threatened migratory phenomenon, and advance our understanding of butterfly ecology in general.

The second, equally important focus of this project is to provide citizens with hands-on experience in scientific research. It is our hope that, through this experience, volunteers will enhance their appreciation and understanding of monarchs, monarch habitat, and the scientific process in general. The Monarch Larval Monitoring Project is a potential model for future citizen science endeavors.

In the five years since the project began, more than 400 participants have monitored 264 sites in 32 US states and 2 Canadian provinces.

For more information, go to:  
[www.mlmp.org](http://www.mlmp.org)

### TEA Member Rearing Monarch's

"This City" column of the February 2003 issue of "Toronto Life" magazine featured a brief article and large photograph of T.E.A. member Ken McGrath. Ken has successfully converted a 42-square-foot walk-in closet into a monarch butterfly rearing facility, complete with mesh cages, 275 potted plants, grow lights, and nectar sources. The article indicated that Ken's roommates are small and quiet – all 160 of them!



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: Alan Hanks, Treasurer, TEA, 34 Seaton Drive, Aurora, Ontario L4G 2K1

## 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, 2004. 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: Jeff Crolla (2-642 Dovercourt Road, Toronto, ON M6H 2W6. Home: 416-533-2267, jeff@primus.ca).

### 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, 2003. 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 Ontario Insects, Volume 4, Number 3, May 1999, pages 48-52 or a previous issue of Ontario Odonata.

## ITEMS FOR SALE THROUGH THE TEA

Books: reproductions of out-of-print books

The Odonata of Canada & Alaska (3 volumes) by E.M. Walker

\$196 Can (\$190 for TEA members who pick it up); In USA: \$145 US surface; \$150 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: \$23 US surface; \$26 US airmail

The North American Dragonflies of the Genus Aeshna by E.M. Walker (1921) with colour plates

\$65 Can (\$60 for TEA members who pick it up); In USA: \$50 US surface; \$53 US airmail

The North American Dragonflies of the Genus Somatochlora by E.M. Walker (1925)

\$55 Can (\$50 for TEA members who pick it up); In USA: \$43 US surface; \$46 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. \$34 Can; In USA: \$25 US.

Books: T.E.A. publications

The Ontario Butterfly Atlas by A.M. Holmes, R.R. Tasker, Q.F.Hess, A.J.Hanks (1991)

ISBN: 0921631111 \$25 Can (\$20 for TEA members who pick it up); In USA: \$20 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: Volume 1-3 (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.

Volume 2 (16 articles plus summary). Articles discuss significant range extensions ecology, regional lists, conservation and information on a museum collection.

Volume 3 (18 articles plus summary). Articles include county and regional lists, range expansions, behavioural notes, conservation status and identification problems.

Cost per volume: \$25 Can; In USA/overseas, \$25 U.S.

Checklist of the Butterflies of the Toronto Region: 135 years of history (Second edition)

Includes flight seasons. Compiled by Barry Harrison.

\$2.50 Can (\$2 for TEA members who pick it up); In USA: \$3 US

For complete details and to order, contact:

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



# Flea Market



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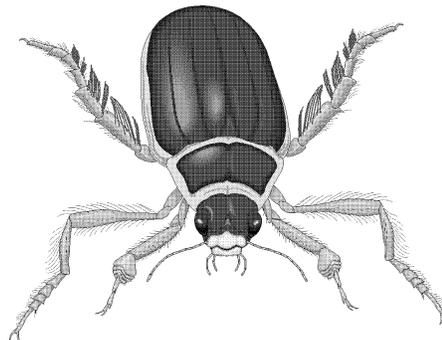
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## Notice to Contributors

### Who Can Contribute:

Observations, articles, etc., to be published in Ontario Insects, are welcome from members of the Toronto Entomologists' Association. There are no page charges, however, submissions from non-members will require a membership purchase prior to publication. 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

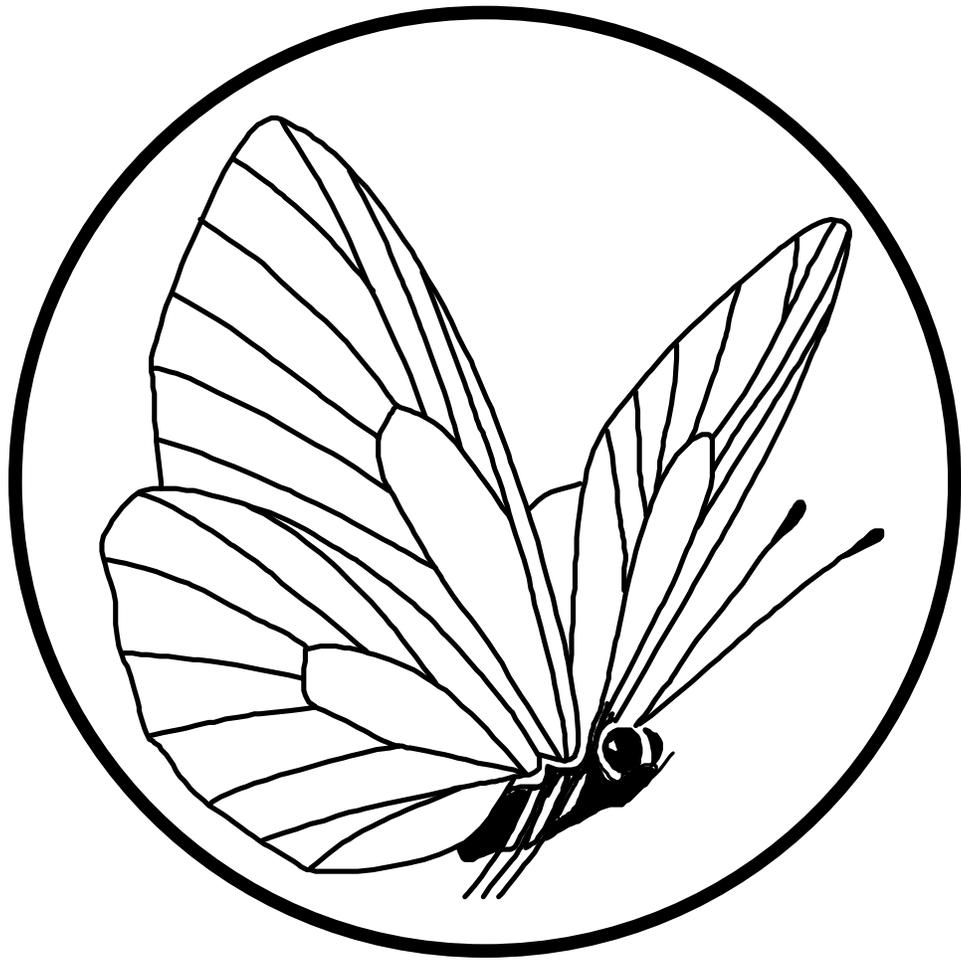
Opinions, Letters, Queries -anything entomological under 500 words that may be of interest to the membership

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 a 600 dpi 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.





# ONTARIO INSECTS

THE NEWSJOURNAL OF THE TORONTO ENTOMOLOGISTS' ASSOCIATION



VOLUME 9, NUMBER 1

SEPTEMBER 2003

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## DEADLINE INFORMATION - Members Please Note:

The deadline for submissions to the January 2004 issue of Ontario Insects is December 1. Late submissions may be added at the discretion of the Editor after that date. If there are any questions or concerns regarding submissions, please feel free to contact Colin Jones at the address below.

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**Submissions to: Colin D. Jones, Editor of Ontario Insects, Box 182, Lakefield, ON, K0L 2H0, [naturalist@algonquinpark.on.ca](mailto:naturalist@algonquinpark.on.ca), (705) 652-5004**

TEA members are welcome to submit any entomologically relevant materials. Please see the inside back cover for Notice to Contributors for more information. Deadlines for submission are 1 month prior to publication.

**For general inquiries about the TEA contact: Alan Hanks, Treasurer, TEA, 34 Seaton Dr. Aurora, ON, L4G 2K1, [a.hanks@aci.on.ca](mailto:a.hanks@aci.on.ca), (905) 727-6993 or check our website at: [www.ontarioinsects.org](http://www.ontarioinsects.org)**

## 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.

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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 Alan Hanks, Treasurer, 34 Seaton Drive, Aurora, Ontario, Canada, L4G 2K1. (905) 727-6993. [a.hanks@aci.on.ca](mailto:a.hanks@aci.on.ca)

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

### Students receive W.J.D. Eberlie Award

The TEA is pleased to announce that the W. John D. Eberlie Research Travel Award for 2003 has been presented to **Tara Stephens** and **Melanie Youngs**, undergraduate students at the University of Guelph. They will be conducting their research at the Wildlife Research Station in Algonquin Provincial Park. The title of the project is: Influence of substrate cues in the absence of prey stimuli on the hunting site selection of adult *Misumena vatia* (crab spiders). This is a follow-up to a study that they did last year in order to shed light on the specific cues that crab spiders use to select their hunting sites. Last year's studies suggested that *M. vatia* females selected hunting sites based on the architecture of the flower.



### 2004 Student Symposium - First Call for Titles

The T.E.A. is pleased to invite postdoctoral fellows, graduate students or senior undergraduate students to present a talk or poster at the Annual Student Symposium, scheduled for **Saturday, March 27, 2004** at 1 pm (location to be announced). Everyone is welcome to attend the symposium.

Please e-mail either of the following people if you are interested in participating or would like more information. Provisional titles, final submitted and edited abstracts will be published in Ontario Insects. Longer reports are optional. We look forward to your participation and attendance at the symposium. Please pass this information on to anyone you know who might be interested.

- Nancy van der Poorten, President T.E.A.  
email: [nmg.vanderpoorten@sympatico.ca](mailto:nmg.vanderpoorten@sympatico.ca)

- Peter Hallett, Symposium Organizer:  
email: [peter.hallett@utoronto.ca](mailto:peter.hallett@utoronto.ca)

### TEA now has a generator available for rent!

The TEA recently purchased a portable generator that is now available for rent to TEA members. Its a Coleman portable that weighs about 22 pounds and can power one or two 150 watt lamps for about two hours - perfect for mothing!

For more information, contact us.

### Junior Entomologists Page

You'll notice that we now have a Junior Entomologists page in OI. Thanks to the Bug Lady, Jean Godawa, for preparing it. We hope to have it as a regular feature. Let us know what you think!

### Call for Applicants: The W.J.D. Eberlie Award for Original Research into Ontario Insects

The T.E.A. announces that it is now taking applications for the W. John D. Eberlie Field Research Travel Award 2004.

The T.E.A. is offering a research travel award of \$300 to assist graduate or undergraduate students conducting original field research into Ontario insects. The award is intended as a travel grant to defray costs of travel to field sites used for research. The award will be made on the basis of merit and quality. Applicants must be members of the Toronto Entomologists' Association and a graduate or undergraduate student at an Ontario university. To apply, submit a properly completed application form (available from the TEA) postmarked no later than March 25, 2004.

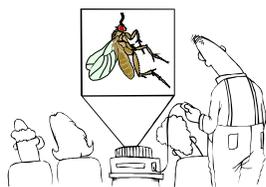
Membership in the T.E.A. (\$15 per year for students) has many benefits including a subscription to Ontario Insects (published 3x per year), the annual Lepidoptera summary and discounts on book sales.

An application form for the award, or for membership in the TEA may be requested by writing to:

Nancy van der Poorten, President TEA  
164 Morse Street, Toronto, On M4M 2P8  
Telephone: 416-466-9013  
email: [nmg.vanderpoorten@sympatico.ca](mailto:nmg.vanderpoorten@sympatico.ca)



Canadian Tiger Swallowtails at Eels  
Creek - Michael van der Poorten



# Upcoming Meetings

*Everyone is welcome. Bring a Friend!*



Saturday, September 27, 2003 1 PM

## **MEMBERS' MEETING**

This year the members' meeting will be in two parts. For the first part, members are encouraged to bring in slides, photos, etc of what they've seen over the summer. The second part will be devoted to discussion of insect rearing. Many of us rear insects and have developed our own techniques for maximizing success; this will be an opportunity to learn from each other. If you have slides of your rearing facilities, please bring them.

Saturday, October 25, 2003 1 PM

## **ALDERVILLE - PRESERVING OUR NATURAL HABITAT**

### **Rick Beaver**

Rick Beaver is a biologist, band member and Natural Heritage Co-ordinator of Alderville First Nation's Black Oak Savannah/Tallgrass Prairie. Alderville is north of Cobourg and contains the largest remnant of tallgrass prairie in central Ontario. Under Rick's guidance, studies are being conducted which encompass a wide range of botanical and entomological surveys. The entomological focus is on butterflies, including studying the potential for reintroducing the Karner Blue. Rick will give us an overview of how this special place is being restored and preserved.

Saturday, November 22, 2003 1 PM

## **STRANGE THINGS DONE 'NEATH THE MIDNIGHT SUN: SEARCHING FOR MILUGIAK (AKA. BLACK FLIES) IN ARCTIC CANADA**

### **Doug Currie**

Doug is the Curator of Entomology in the Centre for Biodiversity and Conservation Biology, Royal Ontario Museum and Associate Professor in the Department of Zoology, University of Toronto. His research is on the systematics and comparative biology of aquatic insects with special reference to black flies (Diptera: Simuliidae). His current research focuses on the diversity and biogeography of black flies from arctic Canada. Doug will discuss the logistical- and physical difficulties associated with fieldwork in the far north, and will include copious images from some of the most remote- and wild regions of Canada. Four seasons of collecting reveals that arctic black flies are far more diverse than previously supposed. Patterns of insect diversity in the far north will be discussed.

Saturday, January 24, 2004 1 PM

## **FORENSIC ENTOMOLOGY**

### **David Gibo**

David Gibo is a professor of Biology at U of T, Mississauga, teaching forensic entomology, evolution and invertebrate zoology. He has spoken to the TEA before about his inventive studies related to monarch migration (remember the flying lawn chair powered by chainsaw engines?). This time he will be bringing us up to date on forensic entomology: how it works, what's being done in the field, and the limitations of forensic entomology. It promises to be a lively talk.

**Future dates 2004: February 28 - Steve Marshall; March 27 - Student Symposium (Location TBA); April 24 - TBA**

All meetings are held at:

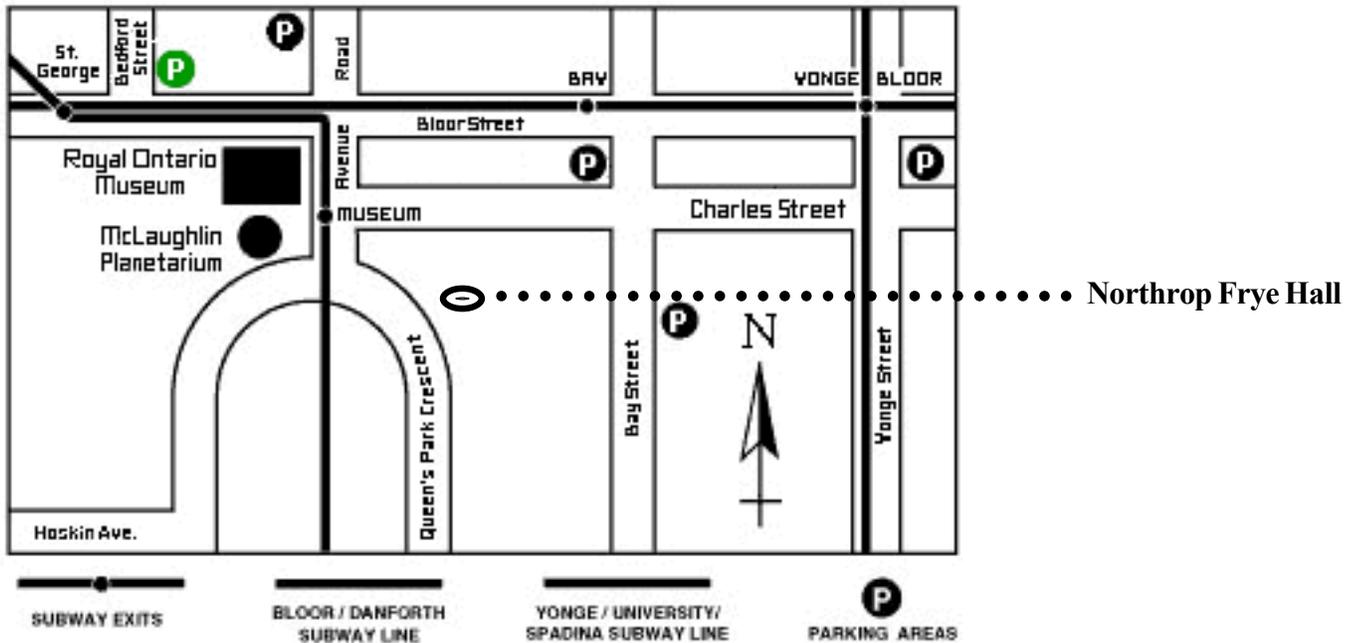
### **Northrop Frye Hall Room 113**

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 Alan Hanks at (905) 727-6993

Also check [www.ontarioinsects.org](http://www.ontarioinsects.org)



**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 \$5 or more depending on the lot.



# Field Trip Reports

by Carol Sellers, Field Trip & Program Coordinator



Once again we got lucky and had perfect weather for the TEA outings. About 16 people attended each outing and with so many sharp eyes and varied interests, there was always something neat to look at.

## June 7

### Dragonflies and other insects of the Rouge Valley

Leader: Michael van der Poorten

On one of the few nice days of early summer, we met at the Pearse House and headed down to the pond. Teneral damselflies seemed to be everywhere! Michael and his hand lens were kept busy identifying them. We got a good list of odonates and a respectable number of butterflies for so early in a slow season. Clwedd Burns found a humungous nursery web spider on the way and Ellie Kubisz caught many interesting insects, including a large black-and-white one we'd never seen before. Thanks to Michael van der Poorten for scouting the location and sharing his expertise.

Common Name	Scientific Name	Numbers
<b>Dragonflies</b>		
Eastern forktail	<i>Ishmura verticalis</i>	
– many mature males, immature (orange) females, mature females (pruinosed blue) and hundreds of tenerals		
Northern bluet	<i>Enallagma cyathigerum</i>	
– about 8 seen, mature blue colour		
Familiar bluet	<i>Enallagma civile</i>	
- 3 mature males		
Dot-tailed whiteface	<i>Leucorrhinia intacta</i>	
– many teneral males and females		
Common whitetail	<i>Plathemis Lydia</i>	
– one male and one female		
Amber-winged spreadwing	<i>Lestes eurinus</i>	
– one very fresh female!		
Common green darner	<i>Anax junius</i>	
– about 6 males patrolling the pond		
- unknown anisop nymph		
- unknown zygop nymph, <i>Lestes</i> sp?		

Common Name	Scientific Name	Numbers
<b>Butterflies</b>		
Spring azure	<i>Celastrina argiolus</i>	
Eastern tailed blue	<i>Everes comyntos</i>	few
Silvery blue	<i>Glaucopsyche lygdamus</i>	few
Little wood satyr	<i>Megisto cymela</i>	
Dreamy duskywing	<i>Erynnis icelus</i>	
Juvenals duskywing	<i>Erynnis juvenalis</i>	
Cabbage white	<i>Pieris rapae</i>	
Common ringlet	<i>Coenonympha inornata</i>	
Pearl crescent	<i>Phyciodes tharos</i>	few
Silver spotted skipper	<i>Epargyreus clarus</i>	
<b>Moths</b>		
Grape Leafroller moth	<i>Desmia funeralis</i>	
Toothed Somberwing	<i>Euclidia cuspidea</i>	
<b>Spiders</b>		
Nursery web	<i>Pisaurina mira</i>	
Crab	<i>Xysticus sp (ferox?)</i>	
Jumping	<i>Phidippus clarus</i>	
<b>Other</b>		
Pygmy grasshopper		

## July 19

### Moths on the Oak Ridges Moraine

Leader: Dave Beadle

Once again, we started the outing in TEA member Brian Henshaw's garden in Brooklin. Brian's overnight trapping had captured some beautiful moths, including very fresh tiger moths (Virgin and Arge). After Dave and Brian had identified and released the moths, we moved to a lovely private estate on the Moraine. We set up sheets in 2 locations and waited for the moths to find us. We had great luck: even more species than last year, and several species of Sphinx. We were joined for a while by the home owners and their guests who seemed to appreciate the beauty of the moths we were attracting.

Thanks to Dave Beadle for organizing and leading the outing, and for patiently identifying the moths for us.

Thanks also to Brian Henshaw for his overnight trapping, use of his garden, and for knowing where the great spots are on the Moraine.

Scientific Name	Common Name	Numbers	Scientific Name	Common Name	Numbers
<i>Coleophora spissicornis</i>		1	<i>Darapsa myron</i>	Hog Sphinx	2
<i>Choristoneura rosaceana</i>	Oblique-banded Leafroller	1	<i>Peridea basitriens</i>	Oval-based Prominent	1
<i>Archips purpurana</i>		1	<i>Nerice bidentata</i>	Double-toothed Prominent	1
<i>Sparganothis sulfureana</i>		2	<i>Gluphisia septentrionis</i>	Common Gluphisia	2
<i>Tortricidia testacea</i>		2	<i>Heterocampa umbrata</i>	White-blotched Heterocampa	1
<i>Tortricidia flexuosa</i>		1	<i>Haploa contigua</i>	The Neighbour	1
<i>Apoda y-inversum</i>		1	<i>Haploa confusa</i>	Confused Haploa	1
<i>Euclea delphinii</i>	Spiny Oak-Slug Moth	1	<i>Phragmatobia fuliginosa</i>	Ruby Tiger Moth	1
<i>Nymphula ekthlipsis</i>		4	<i>Grammia virgo</i>	Virgin Tiger Moth	1
<i>Munroessa icciusalis</i>		1	<i>Grammia arge</i>	Arge Moth	1
<i>Ostrinia nubilalis</i>	European Corn Borer Moth		<i>Halysidota tessellaris</i>	Banded Tussock Moth	6
<i>Fumibotys fumalis</i>		1	<i>Ctenucha virginica</i>	Virginia Ctenucha	10
<i>Pyrausta signatalis</i>		1	<i>Cisseps fulvicollis</i>	yellow-collared Scape Moth	2
<i>Desmia funeralis</i>	Grape Leafroller Moth	1	<i>Leucoma salicis</i>	White Satin Moth	1
<i>Pantographa limata</i>	Basswood Leafroller Moth	1	<i>Idia americalis</i>	American Idia	3
<i>Herpetogramma pertextalis</i>		10	<i>Idia aemula</i>	Common Idia	2
<i>Crambus agitatellus</i>		1	<i>Phalaenophana pyramusalis</i>	Dark-banded Owlet	1
<i>Microcrambus elegans</i>		1	<i>Zanclognatha ochreipennis</i>	Wavy-lined Zanclognatha	4
<i>Urola nivalis</i>		4	<i>Epidelta metonalis</i>	Pale Epidelta	1
<i>Pyralis farinalis</i>	Meal Moth	1	<i>Epidelta larentioides</i>	Black-banded Owlet	6
<i>Hypsopygia costalis</i>	Clover Hayworm Moth	2	<i>Rivula propinqualis</i>	Spotted Grass Moth	1
<i>Herculia olinalis</i>		1	<i>Bomolocha baltimoralis</i>	Baltimore Bomolocha	1
<i>Galasa nigrinodes</i>		1	<i>Bomolocha palparia</i>	Mottled Bomolocha	1
<i>Pterophoridae sp.</i>		2	<i>Bomolocha abalienalis</i>	White-lined Bomolocha	1
<i>Itame pustularia</i>	Lesser Maple Spanworm	2	<i>Bomolocha deceptalis</i>	Deceptive Bomolocha	1
<i>Semiothisa bisignata</i>	Red-headed Inchworm	1	<i>Hypena scabra</i>	Green Cloverworm Moth	3
<i>Semiothisa pinistrobata</i>	White Pine Angle	1	<i>Spargaloma sexpunctata</i>	Six-spotted Gray	1
<i>Protobernia porcelaria</i>	Porcelain Gray	1	<i>Panapoda rufimargo</i>	Red-lined Panapoda	1
<i>Hypagyrtis unipunctata</i>	One-spotted Variant	2	<i>Caenurgina erechtea</i>	Forage Looper Moth	15
<i>Euchlaena serrata</i>	The Saw-Wing	3	<i>Catocala blandula</i>	Charming Underwing	1
<i>Ennomos subsignaria</i>	Elm Spanworm	20	<i>Autographa precatationis</i>	Common Looper Moth	1
<i>Plagodis phlogosaria</i>	Straight-lined Plagodis	1	<i>Marathyssa inficita</i>	Dark Marathyssa	1
<i>Eusarca confusaria</i>	Confused Eusarca	3	<i>Meganola miniscula</i>	Confused Meganola	1
<i>Tetracis crocallata</i>	Yellow Slant Line	1	<i>Lithacodia muscosula</i>	Large Mossy Lithacodia	3
<i>Eugonobapta nivosaria</i>	Snowy Geometer	1	<i>Lithacodia albidula</i>		2
<i>Idaea dimidiata</i>		2	<i>Lithacodia synochitis</i>	Black-dotted Lithacodia	4
<i>Pleuroprucha insulsaria</i>	Common Tan Wave	1	<i>Lithacodia carneola</i>	Pink-barred Lithacodia	1
<i>Scopula limboundata</i>	Large Lace Border	10	<i>Tarachidia candefacta</i>	Olive-shaded Bird-Dropping	1
<i>Dysstroma hersiliata</i>	Orange-barred Carpet	2	<i>Tarachidia erastrioides</i>	Small Bird-Dropping Moth	1
<i>Eulithis diversilineata</i>	Lesser Grapevine Looper	10	<i>Charadra deridens</i>	The Laughter	1
<i>Xanthorhoe lacustrata</i>	Toothed Brown Carpet	1	<i>Raphia frater</i>	The Brother	2
<i>Orthonama obstipata</i>	The Gem	2	<i>Acronicta innotata</i>	Unmarked Dagger Moth	1
<i>Orthonama centrostrigaria</i>	Bent-line Carpet	1	<i>Acronicta morula</i>	Ochre Dagger Moth	1
<i>Horisme intestinata</i>	Brown Bark Carpet	1	<i>Acronicta haesitata</i>	Hesitant Dagger Moth	1
<i>Calledapteryx dryopterata</i>	Brown Scoopwing	1	<i>Acronicta increta</i>		1
<i>Malacosoma dissiria</i>	Forest Tent Caterpillar	6	<i>Apamea amputatrix</i>	Yellow-headed Cutworm Moth	2
<i>Malacosoma americanum</i>	Eastern Tent Caterpillar	1	<i>Oligia exhausta</i>		4
<i>Sphinx canadensis</i>	Canadian Sphinx	1	<i>Oligia subjuncta</i>		2
<i>Lapara bombycoides</i>	Northern Pine Sphinx	1	<i>Amphipoea velata</i>	Veiled Ear Moth	2
<i>Smerinthus jamaicensis</i>	Twin-spotted Sphinx	1	<i>Balsa tristigella</i>	Three-lined Balsa	1
<i>Paonias myops</i>	Small-eyed Sphinx	2	<i>Discestra trifolii</i>	The Nutmeg	1
<i>Pachysphinx modesta</i>	Big Poplar Sphinx	1	<i>Polia nimbosea</i>	Stormy Arches	1
			<i>Polia imbrifera</i>	Cloudy Arches	8
			<i>Lacanobia subjuncta</i>	Speckled Cutworm Moth	1
			<i>Lacinipolia renigera</i>	Bristly Cutworm Moth	5

Scientific Name	Common Name	Number
<i>Leucania multilinea</i>	Many-lined Wainscot	10
<i>Leucania pseudargyria</i>	False Wainscot	2
<i>Anhimella contrahens</i>		1
<i>Homorthodes fufurata</i>	Scurfy Quaker	2
<i>Xestia praevia</i>		1
<i>Protolampra brunneicollis</i>	Brown-collared Dart	2
<i>Euretagrotis sigmoides</i>	Sigmoid Dart	2
<i>Cryptocala acadensis</i>	Catocaline Dart	2

**TOTAL NUMBER OF SPECIES: 105**



**Hog Sphinx - *Darapsa myron* in Acton by Bill McIlveen**

## July 22

### Moths in High Park

Leaders: Dave Beadle and Tom Mason

The TEA participated once again in the High Park moth night. Tom Mason gave an introductory talk on moths to the assembled adults and children while Dave Beadle and Carolyn King set up sheets and lights to attract the moths. It had rained that afternoon but fortunately stopped in time for the show to go ahead. We actually got 38 species of moths including a very fresh Elm Sphinx. Thanks to everyone who helped out and especially to Dave Beadle for producing the species list.

Scientific Name	Common Name	Numbers
<i>Coleophora spissicornis</i>		1
<i>Dichomeris flavocostella</i>		2
<i>Croesia semipurpurana</i>	Oak Leafroller	1
<i>Argyrotaenia quercifolia</i>		1
<i>Choristoneura fractivittana</i>	Oblique-banded Leafroller	2

Scientific Name	Common Name	Number
<i>Archips purpurana</i>		1
<i>Sparganothis sulphureana</i>		2
<i>Nymphula ekthlipsis</i>		2
<i>Helvibotys helvialis</i>		1
<i>Hypsopygia costalis</i>	Clover Hayworm Moth	1
<i>Herculia olinalis</i>		1
<i>Crambus sp.</i>		4
<i>Pterophoridae sp.</i>		3
<i>Itame pustularia</i>	Lesser Maple Spanworm	1
<i>Semiothisa pinistrobata</i>	White Pine Angle	1
<i>Idaea dimidiata</i>		2
<i>Pleuroprucha insulsaria</i>	Common Tan Wave	1
<i>Scopula limboundata</i>	Large Lace Border	2
<i>Orthonama obstipata</i>	The Gem	1
<i>Eupithecia sp.</i>		1
<i>Ceratonia amyntor</i>	Elm Sphinx	1
<i>Halysidota tessellaris</i>	Banded Tussock Moth	1
<i>Cycnia tenera</i>	Delicate Cycnia	1
<i>Idia americalis</i>	American <i>Idia</i>	1
<i>Epidelta larentioides</i>	Black-banded Owllet	1
<i>Renia sobrialis</i>	Sober Renia	1
<i>Hypena scabra</i>	Green Cloverworm Moth	1
<i>Scoliopteryx libatrix</i>	The Herald	1
<i>Caenurgina erechtea</i>	Forage Looper Moth	3
<i>Catocala sp.</i>		1
<i>Autographa precatonalis</i>	Common Looper Moth	1
<i>Lithacodia synochitis</i>	Black-dotted Lithacodia	1
<i>Tarachidia candefacta</i>	Olive-shaded Bird-Dropping	1
<i>Eudryas grata</i>	Beautiful Wood Nymph	1
<i>Alypia octomaculata</i>	Eight-spotted Forester	1
<i>Oligia exhausta</i>		1
<i>Cosmia calami</i>	American Dun-Bar	1
<i>Euxoa tessellata</i>	Tessellate Dart	2

## August 17

### Spiders of Blackwater/Beaver Creek

Leader: Tom Mason

We started the outing by walking north from the Beaver Creek bridge. Michael van der Poorten immediately found a mob of brightly coloured *Datana* caterpillars on sumac. Then Tom Mason found several *Phidippus clarus* spiders on milkweed, guarding their nests from patrolling black cremastogaster ants. I can attest that the ants bite when provoked. We got as far as the pond where Tom found several bridge spiders (*Nuctenea sericata*). After lunch we headed south and found several more species including 2 fishing spiders. In all, we had a great day: good weather, good company, and even more species of spiders than last year. Thanks to Tom Mason for his leadership and expertise in spider identification.

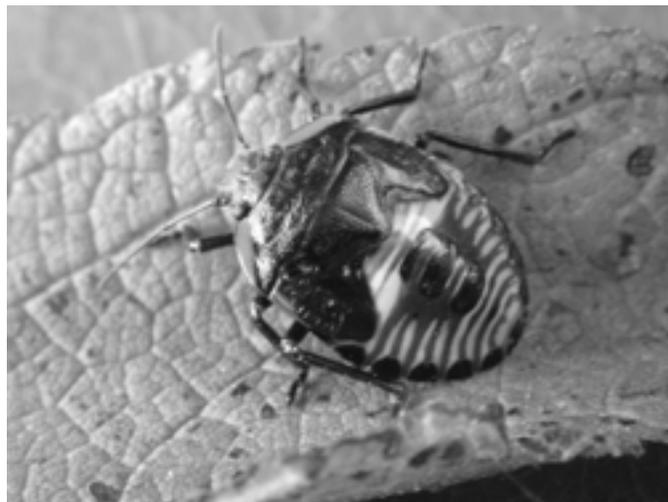
Scientific Name	Common Name	Numbers
Theridiidae - One species unidentified, webbing on bridges.		
Linyphiidae		
<i>Prolinyphia marginata</i>		
<i>Hypselistes florens</i>		
1 unknown Linyphiidae		
Araneidae		
<i>Nuctenea (Larincoides) cornuta</i>		
<i>Nuctenea patiaga</i>		
<i>Nuctenea sericata</i>		
<i>Araneus trifolium</i>		
<i>Argiope aurantia</i>		
<i>Argiope trifasciata</i>		
Tetragnathidae		
<i>Tetragnatha laboriosa</i>		
<i>Tetragnatha viridis</i>		
Agelenidae		
<i>Agelenopsis pennsylvanicus</i>		
Pisauridae		
<i>Pisaurina brevipes</i>		
<i>Dolomedes triton</i>		
Lycosidae		
<i>Alopecosa kochii</i>		
Clubionidae		
<i>Clubiona riparia</i>		
Philodromidae		
<i>Tibellus oblongus</i>	** Specimen looked closer to the European species <i>T. maritimus</i> but I have not seen records of this species in Canada as of yet.	
Thomisidae		
<i>Misumena vatia</i>		
<i>Xysticus transversatus</i>		
1 Thomisid female with eggs 5mm, brown with white tipped abdomen		
Salticidae		
<i>Eris militaris</i>		
<i>Metaphidippus protervus</i>		
<i>Phidippus clarus</i>		

**Trip Summary by Tom Mason**

A total of 24 species were observed covering 11 families. Orb weavers were again the family best represented. Of note is the *Tetragnatha viridis*. This species is known from wetlands where black spruce grows. The area it was found in was definitely wetland but black spruce was not prevalent.



**Tiger Swallowtail nectaring on bear scat near Timmons - Bill McIlveen**



**Stinkbug on Joe-Pye-Weed - Bob Bowles**



**Ctenucha (*Ctenucha virginica*) - Joker's Hill U of T property near Newmarket, nectaring on Spreading Dogbane (*Apocynum androsaemifolium*) - Bill McIlveen**

# Ninth Annual TEA Toronto East Butterfly Count - July 1, 2003

By Tom Mason

July 1st was a beautiful sunny day and we had a good turn out for the count. Here's what we saw:

Scientific name	Common name	Number
<i>Pterourus glaucus</i>	Tiger swallowtails	6 *
<i>Pterourus canadensis</i>	Canada swallowtail	4 *
<i>Pieris rapae</i>	Cabbage white	70
<i>Colias philodice</i>	Clouded sulphur	11 **
<i>Colias eurytheme</i>	Orange sulphur	6
<i>Fenissca tarquinius</i>	The Harvester	2
<i>Lycaena hyllus</i>	Bronze copper	3
<i>Everes comyntas</i>	Eastern tailed blue	1
<i>Celestrina l. neglecta</i>	Summer azure	14
<i>Glaucopsyche lygdamus</i>	Silvery blue	59
<i>Speyeria cybele</i>	Great spangled fritillary	16
<i>Euphadryas phaeton</i>	Baltimore	16
<i>Phyciodes cocyta/selenis</i>	Northern crescent	384
<i>Phyciodes tharos</i>	Pearl crescent	20
<i>Polygonia comma</i>	Comma	1
<i>Polygonia interrogationis</i>	Questionmark	7
<i>Polygonia faunus</i>	Green comma	1
<i>Nymphalis antiopa</i>	Mourning cloak	5
<i>Vanessa atalanta</i>	Red admiral	9 + 2 larva
<i>Vanessa virginiensis</i>	American painted lady	1
<i>Basilarchia arthemis</i>	White Admiral	44
<i>B. arthemis astyanax</i>	Red spotted purple	13
<i>B. archippus</i>	Viceroy	40
<i>Enodia anthedon</i>	Pearly eye	18
<i>Satyrodes eurydice</i>	Eyed brown	9
<i>Megisto cymela</i>	Little wood satyr	344
<i>Coenonympha inornata</i>	Inornate ringlet	298
<i>Cercyonis pegala</i>	Wood nymph	4
<i>Danaus plexippus</i>	Monarch	26 + 1 larva
<i>Epargyreus clarus</i>	Silver spotted skipper	22
<i>Thorybes pylades</i>	Northern cloudywing	15
<i>Erynnis icelus</i>	Dreamy duskywing	3
<i>E. baptisiae</i>	Wild Indigo duskywing	1
<i>Anclioxypha numitor</i>	Least skipperling	17
<i>Thymelicus lineola</i>	European skipper	1150
<i>Polites peckius</i>	Peck's skipper	15
<i>P. themistocles</i>	Tawny-edged skipper	117
<i>P. mystic</i>	Long dash	80
<i>Wallengrenia egeremet</i>	Northern Broken dash	13
<i>Atrytone logan</i>	Delaware	1
<i>Poanes hobomok</i>	Hobomok skipper	153 ****
<i>Euphyes vestris</i>	Dun skipper	7

\* Specimens observed appeared to have characters of both species.

\*\* >3 were white phase.

\*\*\* >4 Pocahontas phase

Participants : Jerry Ball, Charles Heller, Tom Hanrahan, Carol Sellers, Siglinde van der Grinten, Ann Millett, Jim Taylor, Tom Mason, Nancy van der Poorten, Micheal van der Poorten, Mark Kubisz, Carolyn King, Chris Darling, Roslyn Darling, Tove Christenson, Barry Harrison and James Kamstra.

Areas Covered: Rouge Valley, Don Valley, Markham south of Hwy 7.

Total Km. Driven: 30

Total Km walked: 75

Total time Driven: 45 minutes

Total time walked: 77 hrs



Bald-faced Hornet nest - Bob Bowles

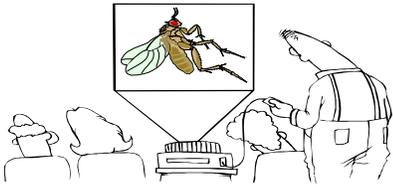
## Do you know?

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

**Donations are welcome to support initiatives of the TEA including:**

**W. John D. Eberlie Research Travel Grant** - to help to sponsor research into Ontario insects

Please send your tax creditable donation to: Alan Hanks, Treasurer, TEA, 34 Seaton Drive, Aurora, Ontario L4G 2K1



# TEA Activities



## April

### TEA general meeting

We had a good turnout for the last meeting of the season for Colin Jones' talk about dragonflies. Colin is a biologist with the MNR and editor of *Ontario Insects*, co-editor of *Ontario Odonata* and co-editor of the TEA Lepidoptera summary.

Colin treated us to a cornucopia of slides of gorgeous dragonflies while gently educating us. He covered all the major groups of odonata, giving the salient characteristics of each family and of some of the more common genera. He pointed out some field characters that are not widely known but that help to distinguish similar species and opened our eyes to the need to look carefully at what we see (the Lake Darner has a black line on its face which the very similar Canada Darner does not).

He introduced us to the lifecycle of the odonata, the adaptations that the larval stages make to survive in different habitats, and the reproductive behaviour of different species (did you know that males can scoop out of the female the sperm that has been deposited by another male?). We learned of the dangers that dragonflies face and how they deal with them – birds, spiders, frogs, fish, other dragonflies and even plants (such as the sundew) are all predators. We also learned about conservation efforts and how dragonflies are good indicators of a healthy environment. The talk was the perfect end to the winter season and the perfect start to a season of seeing outdoors what we've been reading about all winter.

### TEA at the Leslie Spit Spring Festival

On Saturday May 3, 2003, the TEA participated in the Leslie Spit Spring Festival. Six intrepid members of the TEA volunteered their time to stand in the cold to tell people how wonderful insects are. The day was sunny but it's usually cold on the spit, and our table was set up outside. We met a steady stream of people, adults and kids, walking, biking, and skating on the Spit who were induced to stop at our table by the gorgeous New Guinea butterflies we had on display! We then showed them the butterflies they would see on the Spit thanks to the photographs and specimens that Jim and Barry provided. We had lots of interest from people and some pointed questions about mosquitoes and West Nile virus.

At our scheduled 1 pm walk, only one person (another TEA member!) showed up so it ended up being a TEA event. It was still cold, but sunny and we managed to find the Forage Looper moth and some beetles.

Thanks to all who helped out: Jim Spottiswood, Barry Harrison, Sarah Stewart, Carolyn King, Carol Sellers and Michael van der Poorten.



### TEA at the North American Native Plant Society Plant Sale

The TEA had a table at the NANPS plant sale on Saturday, May 10, 2003 where the focus was on butterfly gardening and beneficial insects. We answered many questions about migrating monarchs, how to attract butterflies and butterfly releases in schools. It was a good match for both groups and we hope to participate again next year.

Thanks to Carolyn King and Michael van der Poorten for their help.

### Ontario Odonata receives praise

Just wanted everyone to know that *Ontario Odonata*, Vol 3 (2000) received a very good review in the latest issue of *Ode News*, An Occasional Newsletter about Dragonflies and Damselflies in Southern NewEngland.

They wrote:  
"The folks in Ontario really have their act together. Although there are relatively few people chasing odonates in the province, the fruits of their efforts are better documented than anywhere else in North America".

Great job! Thanks to Paul Catling, Colin Jones and Paul Pratt for co-editing and to all those who not only go out looking for odonates but take the time to send in their records.



# The Bookworm



# Things To Do



## New Books

### TIGERBEETLES

#### The Evolution, Ecology, and Diversity of the Cicindelids

David L. Pearson; Alfred P. Vogler  
ISBN: 0-8014-3882-9 US \$39.95  
Cornell Series in Art

#### Geometrid Caterpillars of Northeastern and Appalachian Forests

by D. L. Wagner et al.  
USDA Forest Service #FHTET-2001-10  
September 2001

### Marigold's Wings

By Vlasta van Kampen  
Key Porter, 32 pages, \$21.95  
A book about butterflies for children ages 4-6 with a postscript by former TEA president, Dr. Phil Schappert

#### An Obsession with Butterflies - Our Long Love Affair with a Singular Insect

by Sharma Apt Russell  
Perseus Publishing 2003 1-800-255-1514  
239 pg, hard cover, ISBN 0-7383-0699-7  
\$37.00 Canadian  
This book appears to be a general work about butterflies. The cover of the book bears a large monarch!

#### Field Guide to the Dragonflies and Damselflies of Massachusetts

200+ full-color pages and ring-bound, \$20, postpaid. Available from Natural Heritage & Endangered Species Fund, MA Division of Fisheries & Wildlife, North Drive, Westborough, MA 01581

## Worth Reading

### Bugs of Ontario

by John Acorn  
Lone Pine Publishing  
ISBN: 1-55105-287-3, 160 pages, \$14.95

Finally! A book about Ontario insects. John Acorn is a well known 'bugster' with a great sense of humor and an overwhelming passion for insects. This is a basic book that highlights the 125 'coolest' bugs of Ontario - it will be perfect for kids or those new to the subject. There's a brief introduction to life histories, ecology, systematics and being a bugster. Then each of the coolest species gets a page to itself with a half-page colour illustration by Ian Sheldon and a write-up in John's unique entertaining but educational style.

## Websites and CDs

### Saturniidae of North America on CD

For details, see  
[www.silkmoths.bizland.com/credits.htm](http://www.silkmoths.bizland.com/credits.htm)

Includes state by state listings, county by county distribution maps, numerous articles by members of WLSS, etc.

### Butterfly larvae of Canada and North America Website

See an introductory page at:  
[www.silkmoths.bizland.com/ButterflyIntro.htm](http://www.silkmoths.bizland.com/ButterflyIntro.htm)

Adult foods, larval foods, state and provincial distributions, rearing and general information are available. This is a private members site. See registration details at the URL above or contact Bill Oehlke at [oehlke@islandtelecom.com](mailto:oehlke@islandtelecom.com).

## Caterpillar Rearing Project

Dave Wagner of the University of Connecticut is the lead author of two wonderful USDA publications on identifying caterpillars. He is now embarking on an even larger project (400+ species) and could use some help rearing caterpillars. The idea would be to collect the caterpillars, rear them to maturity, and take a high-quality macro photograph of both the caterpillar and the moth when it emerges. He has suggested starting with *Cucullia* which feed on asters and goldenrods in the fall; he's also interested in *Furcula* and *Clostera* which feed on poplar and willows. If you'd like to help, please contact him directly:  
[david.wagner@uconnvm.uconn.edu](mailto:david.wagner@uconnvm.uconn.edu).

The current USDA publications on caterpillars are available free by emailing Georgia Haynes at the USDA: [ghaynes@fs.fed.us](mailto:ghaynes@fs.fed.us). Ask for Caterpillars of Eastern Forests, FHTET-96-34 and Caterpillars of Northeastern and Appalachian Forests, FHTET-2001-10. These are such worthwhile publications, it would be great if we could contribute to the next one.

## ESO Annual Meeting

Entomological Society of Ontario  
November 28 - 30, 2003  
Guelph, Ontario

### The Plant Link: Insect-Plant Interactions

- includes an Insect Expo, Job Fair, "Eat your Work" demo and more.

Check [www.entsocont.com](http://www.entsocont.com) for details.

## Royal Botanical Gardens Odonate Count 2003

by Carl Rothfels

On July 25, Royal Botanical Gardens (RBG) staff held a trial count of the dragonflies and damselflies (Odonata) of RBG properties. The count was set up in a similar fashion to the popular Christmas Bird Counts and the increasingly popular butterfly counts that now occur across much of Ontario.

Odonate counts are annually increasing in number; to my knowledge, there were four other odonate counts held in 2003: the Algonquin Park West Side Count; the Lake Dore Count; the Pelee Island Count; and the Carden Plains Count (King et al., 2003). Of these, only the Pelee Island count is in the Carolinian Zone, and none are in the northern Carolinian Zone area of Hamilton.

A count at Royal Botanical Gardens, then, has the potential to fill in a gap in the study of Odonata. Aside from its cultivated gardens, RBG has approximately 970 hectares of natural lands, consisting of four loosely connected sanctuaries boasting diverse ecological communities: Cootes Paradise, Hendrie Valley, Rock Chapel, and the Berry Tract (Smith, in press). Cootes (a coastal marsh where Spencer Creek flows into Hamilton Harbour), and Hendrie Valley (where Grindstone Creek enters the harbour) contain particularly rich wetland habitats, and that is where we concentrated our odonate counting.

I also hoped that by holding a count, we could learn more about the Odonata of RBG, and could increase the number of people interested in this fascinating group of insects. Encouraged by the success of this count, I plan on making it an annual event, and on holding an additional Hamilton Odonate count next year.

Dragonflies and damselflies make an excellent count group since, like birds and butterflies, they are conspicuous animals that can generally be identified with a pair of binoculars (with the need to catch some species for closer examination in order to confirm their identity). They are diverse but not to the extent of being overwhelming, and they are excellent indicators of ecological conditions. Odonata are dependent on aquatic environments for their larval stage, which makes them excellent indicators of water quality, an issue of significant interest at RBG and across the Hamilton Harbour area as we attempt to restore the Harbour environment.

The count was informal; it ended up being half “count” and half “tutorial.” We spent the morning at the western end of Cootes Paradise exploring the edges of the Desjardins Canal and Spencer Creek and trekking through the European Manna Grass (*Glyceria maxima*) wet meadow communities. For the afternoon we hiked along the Grindstone Creek through Hendrie Valley. This area features frequent

shallow-water “marshes” that have been isolated from the Creek by berms made of Christmas trees embedded in the soil sediment. These barriers keep Eurasian Carp out of the marshes and allow aquatic vegetation to regenerate. These marshes were particularly rich in Odonata. To end the count, we made a quick trip, in declining light, down to Mercer’s Glen to pick up the last species of the day.

The count was a great success. We found 556 individuals of 28 species. The most common species of damselfly was the beautiful Ebony Jewelwing (*Calopteryx maculata*), with 82 individuals observed. They were particularly abundant along Spencer Creek, along with the most abundant dragonflies—the meadowhawks. Many meadowhawks are difficult to identify to species, especially when they are young, so most of ours are listed as *Sympetrum* sp., which means that we know they were a meadowhawk, but we’re not quite sure which one.

Everyone involved had an excellent time, and was able to learn a great deal about odonate identification and ecology (and improve their skills with an insect net, too!). If anyone thinks that catching dragonflies (or even damselflies) is easy, we invite you to come out on the count next year!



**Highlights:** The Halloween Pennants (*Celithemis eponina*) seen over Blackbird Marsh were new for RBG. These fast-flying dragonflies with orange and red striped wings often fly low over ponds and can be extremely difficult to catch. Fortunately, they are stunningly coloured, and easy to identify from a distance. Also, the Cherry-faced Meadowhawks (*Sympetrum internum*) were new for RBG, and also new for Hamilton (OOD 2003) (see note for further details). This species poses an identification challenge (it resembles the common Ruby Meadowhawk [S.

*rubicundulum*]), and so it may have been overlooked in the past. Damselflies also delivered excitement. We found three locations for the Blue-fronted Dancer (*Argia apicalis*), a southern species of blue and black damselfly that had been found new for RBG and Hamilton (OOD 2003) the day before at Long Pond. This species was somehow missed last year, but appears to be widespread in the RBG area. Two of the locations are within Halton, and represent the first records of this species in that region (OOD 2003). Another exciting damselfly was the Rainbow Bluet (*Enallagma antennatum*), which manages to pack black, orange, yellow, green, and blue onto its tiny body. A population on Spencer Creek at Cootes Drive is the first RBG population and the second RBG record of this species (the first record being a lone individual found resting on foliage near the Cootes Paradise Fishway). Finally, several Band-winged Meadowhawks (*Sympetrum semicinctorum*) at the mouth of Grindstone creek were the second RBG record of this distinctive small meadowhawk.

**“Count Week” species:** We only had one party in the field, which, coupled with our relaxed pace, meant that we were only able to cover a small area (see attached maps), and only by foot (no canoes). Other species seen in the search areas within three days either side of the count include Skimming Bluets (*Enallagma geminatum*), Unicorn Clubtails (*Arigomphus villosipes*) and one Prince Basket-tail (*Epiptera princeps*). A more thorough count is sure to find more species, and many more individuals.

**Weather:** Conditions were great for counting odonates, with the day being hot and sunny, with a slight breeze.

**Participants:** Jeremy Adams, Hollie Clavering, Tiffany Harvey, Gordon Lewer, Brian Pomfret, Carl Rothfels, Sean Spisani, Jen Sylvester, and Kiirsten VanWyck. Special thanks to everyone for making this count such a success, and so much fun.

**Party hours:** Four kilometres walked, over six hours.

**Note:** *Sympetrum rubicundulum* and *Sympetrum internum* were not conclusively identified in the field. The critters we called “pale-faced Sympetrum” and “red-faced Sympetrum” during the count were attributed to these species, respectively, after the fact, based on close examination of *Sympetrum* specimens from RBG and elsewhere in Hamilton and Haldimond/Norfolk. *Sympetrum*s with red-faces seem to consistently be *S. internum*, and those with off-coloured faces *S. rubicundulum*, but my sample size is small, and some of the individuals placed in these species on the count may belong to other species.

**Request for sightings:** I am very interested in the Odonata of Hamilton and Halton regions. If anyone has any sightings, please let me know. I can be reached at RBG by phone at 905-527-1158, ext. 238 or by email at [crothfels@rbg.ca](mailto:crothfels@rbg.ca).

**Citations:**

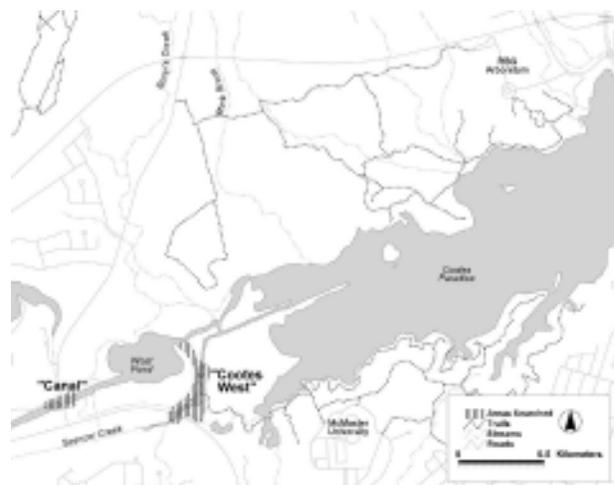
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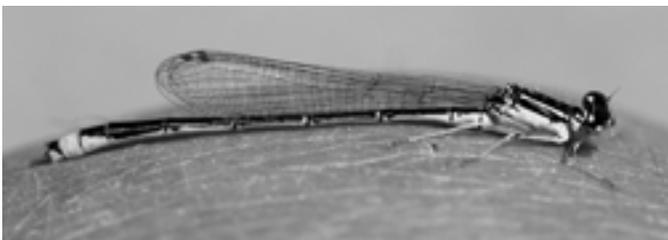
Cootes Paradise



Hendrie Valley

RGB Odonate Count 2003

Scientific Name	Common Name	Numbers
<b>Damselflies</b>		
<i>Calopteryx maculata</i>	Ebony Jewelwing	86
<i>Lestes dryas</i>	Emerald Spreadwing	1
<i>Lestes rectangularis</i>	Slender Spreadwing	20
<i>Lestes unguiculatus</i>	Lyre-tipped Spreadwing	2
<i>Amphagrion saucium</i>	Eastern Red Damsel	7
<i>Argia apicalis</i>	Blue-fronted Dancer	11
<i>Argia fumipennis</i>	Variable Dancer	1
<i>Enallagma antennatum</i>	Rainbow Bluet	5
<i>Enallagma ebrium</i>	Marsh Bluet	3
<i>Enallagma exsulans</i>	Stream Bluet	34
<i>Enallagma civile</i>	Familiar Bluet	5
<i>Enallagma signatum</i>	Orange Bluet	11
<i>Ischnura verticalis</i>	Eastern Forktail	6
<b>Dragonflies</b>		
<i>Aeshna constricta</i>	Lance-tipped Darner	1
<i>Anax junius</i>	Common Green Darner	3
<i>Celithemis eponina</i>	Halloween Pennant	3
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	7
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	2
<i>Libellula luctuosa</i>	Widow Skimmer	9
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	15
<i>Libellula lydia</i>	Common Whitetail	29
<i>Pachydiplax longipennis</i>	Blue Dasher	39
<i>Perithemis tenera</i>	Eastern Amberwing	20
<i>Sympetrum cf internum*</i>	Cherry-faced Meadowhawk	7
<i>Sympetrum obtrusum</i>	White-faced Meadowhawk	21
<i>Sympetrum cf rubicundulum*</i>	Ruby Meadowhawk	11
<i>Sympetrum semicinctum</i>	Band-winged Meadowhawk	2
<i>Tramea lacerata</i>	Black Saddlebags	4
<i>Sympetrum</i> sp.	Meadowhawk species	153
<i>Lestes</i> sp.	Spreadwing species	20
<i>Argia</i> sp.	Dancer species	3
<i>Enallagma</i> sp.	Bluet species	15
<b>TOTAL NUMBERS:</b>		<b>556</b>



Rainbow bluet - Eels Creek - Michael van der Poorten

# Moth Lore

.....Richard Rowe mentioned the Norse colonists of Greenland, and how climate change destroyed their once-lovely home. I thought you folks might be interested in an alternative, entomological explanation—the moth that ate Greenland. The noctuid moth *Eurois occulta* (L.), probably played a major role here. I read about it in Louis Hanfield’s book “Les Guide des Papillons du QuÉbec.” (Version scientifique. Broquet Inc., Ottawa. p. 756). In short, he argues that the Vikings accidentally introduced the moth, and that the caterpillars became super abundant and ate every green leaf in sight. In support of this, there are reports of caterpillars so thick on the rocks by the sea that kayaks could not be landed due to the slipperiness of their collective squished bodies. As well, there are layers in Greenland peat bogs made up of almost nothing but the remains of Eurois pupae. Interesting, no?

When I was a student, I had the good fortune to take a course in Quaternary environments. I think that was in 1985. Back then, no one had heard of global warming. I was taught that the first half of the 20th century was the warmest period in the last 1000 years, and that the climate was cooling at the time I took the course. I was also taught that the “little ice age” and the “hypsihermal” warm period were both slippery concepts, and that the evidence from one site rarely corresponded with that from another. The take home message seemed to be that climates change a LOT, and that there is no such thing as normal. When the global warming debate started up, I got the impression that climatologists broke into two camps— those who looked at evidence from the past and tried to correlate it with predictive models (such as the Milankovitch curves [hope I spelled that correctly]) and those who used computer models and recent weather data to predict the future. Whether these two groups have come together to share their perspectives in the last 15 years, I have no idea, but surely there is much here that we should understand before trusting claims about odonate ranges and global warming.

John Acorn  
 Edmonton, Canada  
 Exerpted from Ode-list communications with permission of John Acorn

## IN MEMORIAM: Dr. Fred A. Urquhart

Excerpted from the University of Toronto Bulletin (7) Monday, June 9, 2003, and other sources  
Compiled by Don Davis

Professor Emeritus Frederick Urquhart, an internationally renowned expert in the field of Insect Migration, died Nov. 3, 2002, at the age of 90.

Born in Toronto, Urquhart began his career at the university as a student, graduating at the top of his class in 1935. He completed his MA in 1937 and PhD in 1940. Following graduation he joined the meteorological division of the Department of Transport and taught meteorology to students in the RCAF until the end of the war. In 1945 he became the assistant director of zoology at the Royal Ontario Museum and in 1948 was cross-appointed as an assistant professor in zoology. The following year he became director of zoology and paleontology at the ROM and in 1961 he assumed full-time duties as an associate professor of zoology, becoming a full professor in 1963. Among Dr. Urquhart's students was noted Canadian author Farley Mowat.

In 1966 Urquhart became one of three initiators and organizers of the zoology teaching and research program at Scarborough College, retiring in 1977. Urquhart was one of the few people at Scarborough to produce a highly successful television lecture series.

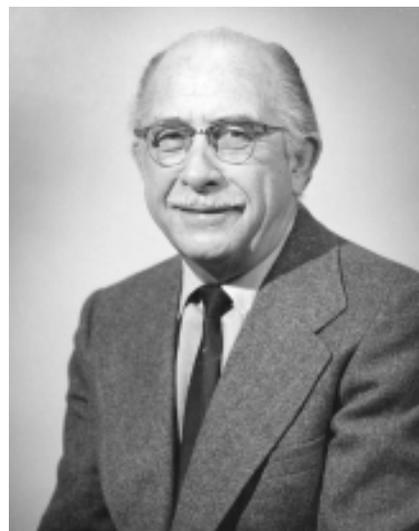
Although his research interests were broad – with four books, a monograph and 62 papers in refereed journals and countless scientific reports and popular articles relating to a wide range of biological subject matter to his credit — Urquhart's first love was butterflies. He longed to answer the question: Where do monarch butterflies go in the winter? Urquhart's first attempt in 1937 to follow the monarch by marking individual butterflies met

with limited success. But by 1940 he'd developed a method of tagging that worked and after the war he and his wife, Norah, whom he married in 1945, tagged thousands of monarchs, affixing a tiny label to the wing, reading "Send to Zoology University of Toronto Canada." In 1952 he issued the first appeal for volunteers to assist with the tagging and over the next 20-odd years thousands of people had participated. In January 1975, these efforts paid off. In 1976 the Urquharts were able to see the spectacular sight for themselves.

Now over a dozen sites on five mountains have been identified as winter habitat for monarchs and these are protected as ecological preserves by the Mexican government, largely through Urquhart's early influence and advocacy. In Canada, Fred was an advocate for a reduction in the use of pesticides and herbicides, and for the planting of milkweed, the sole food plant of monarch butterfly larva.

"Large numbers of people were encouraged to be citizen-scientists and a lot of people got involved internationally. It had quite an electrifying effect on butterfly migration studies," said U. of T. Zoology Professor David Gibo." A number of long-time members of the T.E.A. participated in Fred's tagging program and a few are named in his 1960 book "The Monarch Butterfly". Many research associates remained with the program, tagging monarchs for 10, 20, 30 years. At least one individual who began tagging with the Urquharts in the mid 1950's is still tagging monarchs with Urquhart tags.

While the project was officially ended in 1992, Fred and Norah continued to support limited monarch tagging in remote locations from where no recoveries had been made. One such monarch from Grand Manan Island,



Nova Scotia was recovered in Mexico two years ago.

It is noteworthy that until later years, when the National Geographic Society provided grants for insect migration research, this program operated on very limited funding provided by the Urquharts and their volunteer "Research Associates".

Fred was involved in the formation of the Federation of Ontario Naturalists. Until recently, a framed collection of photos from the 1941 "Limberlost Camp" hung in the reception area of the FON Headquarters. In one of these photos, Fred Urquhart was shown stirring a huge cast-iron pot with a large staff.

Fred and Norah Urquhart were awarded the W.W.H. Gunn trophy by the F.O.N. In 1998, as a result of a successful nomination supported by T.E.A. members and others, Fred and Norah were appointed to the Order of Canada. The Urquhart Butterfly Garden near Dundas, Ontario was named in their honour.

Fred Urquhart is survived by his wife, Norah and his son, Doug and family from Whitehorse, Yukon.

Photo from University of Toronto Bulletin



# Monarch News

submitted by Don Davis

## **Illuminating the Circadian Clock in Monarch Butterfly Migration**

Oren Froy, Anthony L. Gotter, Amy L. Casselman, and Steven M. Reppert  
*Science* 2003 May 23; 300: 1303-1305

## **A screening level approach for nontarget insect risk assessment: Transgenic Bt corn pollen and the monarch butterfly (Lepidoptera : Danaidae)**

Wolt JD, Peterson RKD, Bystrak P, Meade T  
ENVIRONMENTAL ENTOMOLOGY  
32 (2): 237-246 APR 2003

### **Abstract:**

Quantitative risk assessment affords an objective approach for assessing ecological risk from crops produced using biotechnology. Ecological risk assessment for plant-incorporated insecticidal proteins necessitates consideration of risks to nontarget insects when species-specific hazard information may be lacking. Screening-level risk assessment methods afford a means by which risks to species of concern may be evaluated conservatively using exposure estimates, host-range information, and a probabilistic estimate of toxicity to sensitive species. This approach was applied to the special case of Bt corn pollen risk, to monarch butterfly, *Danaus plexippus* (L.). populations the results were compared with more highly refined risk assessment techniques in terms of the risk conclusions which can be developed with more highly certain information. Exposure analysis based on readily available literature showed

pollen interception by the host for monarch butterfly larvae (common milkweed, *Asclepias syriaca* L.) declined exponentially with distance from the pollen source. Intra- and inter-genera sensitivity of lepidopteran species was used to project effect to monarch butterfly larvae. When the 90(th) percentile of effect (LC50.) was used to estimate monarch butterfly sensitivity to Bt corn pollen expressing CryIA (b) protein, the risk of lethality to individual larvae was negligible at > 1 in from the edge of source corn fields. Subsequent field measurements of pollen distribution, interception by milkweed, and especially effects determinations for monarch butterfly larvae exposed to CryIA (b) toxin indicate that the screening-level approach was effective in focusing the scope of the problem to exposure from high-expressing CryIA(b) events occurring within source cornfields or at the near-field edge. Screening level risk assessment conservatively identifies the scope of concern and the uncertainties that need clarification so that subsequent research can be appropriately focused.

### **Addresses:**

Wolt JD, Dow AgroSci, 9330 Zionsville Rd, Indianapolis, IN 46268 USA  
Montana State Univ, Dept Entomol, Bozeman, MT 59717 USA

### **Publisher:**

ENTOMOL SOC AMER, LANHAM  
IDS Number: 669MB  
ISSN: 0046-225X

## **Temperature-induced variation in larval coloration in *Danaus plexippus* (Lepidoptera: Nymphalidae)**

Solensky, M. S. and E. Larkin. 2003  
*Ann. Entomol. Soc. Am.* 96: 211-216.

From Michelle Solensky -  
"A few years ago, a high school student in our lab studied the effects of temperature on the color of monarch larvae. We had noticed (as I'm sure some of you have!) that when we put larvae in a cool chamber they got really dark. We reared monarchs in controlled-environment chambers and found that cool temperatures caused an increase in the amount of black pigment and a decrease in the amount of white color, whereas warm temperatures caused more white and less black color. This study has just been published in the *Annals of the Entomological Society* ... you can visit the journal's website to download the PDF file for free."

Annals of the Entomological Society website: <http://esa.edoc.com/server-java/Propub/esa/an-v96n3.contents>

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## 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 (titled Ontario Odonata) is not included with membership but must be purchased separately. 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 February 28, 2004. 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:** Jeff Crolla (2-642 Dovercourt Road, Toronto, ON M6H 2W6. Home: 416-533-2267, jeff@primus.ca).



Harpoon Clubtail - Eels Creek - Michael van der Poorten

### 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, 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 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:

Submissions should be received by December 31, 2003. Late submissions included at the compiler's discretion. **Northern Ontario:** (north of Algonquin Park, Nipissing District and including Haliburton, Muskoka, Renfrew and Peterborough) - 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):** (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) - Paul Catling (2326 Scrivens Drive, RR 3 Metcalfe, Ontario K0A 2P0. 613-821-2064, catlingp@agr.gc.ca). Paul is also Provincial Compiler. **Southwestern Ontario:** (south and southwest of a line connecting the south end of Georgian Bay to Hamilton and Niagara on the Lake) - Paul Pratt (7100 Matchette Rd., LaSalle, ON N9C 2S3. 519 966 5852, prairie@netcore.ca).

For more details, see Ontario Insects, Vol 4, No 3, May 1999, p 48-52 or a previous issue of Ontario Odonata.

Welcome to...

# The Junior Entomologists Page

September, 2003

We are proud and excited to be including our first-ever page for **kids only!** Look for us in every issue of Ontario Insects. It will be packed with info, games and lots of other stuff for the junior *entomophile* (insect lover). We also want to hear from you. Send us your drawings, jokes, cool facts, web site and book recommendations, backyard experiments and anything other buggly thing that you want to share.

**Help! We need a Name!** We're looking for the best name for this page. Got any ideas? Let us know. If we like it, you could win a collecting jar and insect field guide to take along on your next bug hunt!

## Word of the Day:

### "Instar"

Huh?...What's that?...

An instar is an "in-between stage" of growth. Sort of like you, but only for insects. As you know, before insects become adults, they spend time in other forms such as larvae and pupae. As larvae grow, they shed their exoskeleton again and again. The stages between shedding (also known as moulting) are called **instars**.

## Have fun on this bug hunt!

E	D	E	P	I	L	L	I	M	R	L	L
E	N	Y	M	P	H	I	N	S	O	E	A
B	U	T	T	E	R	F	L	Y	A	R	D
E	L	H	O	R	N	E	T	Y	C	T	Y
C	I	O	T	M	S	A	L	R	H	A	B
K	V	R	E	I	O	F	L	E	A	M	U
A	E	A	P	O	N	L	I	C	E	A	G
T	E	X	R	O	T	M	O	T	H	P	A
Y	W	N	G	N	I	T	S	G	R	U	B
D	T	A	S	P	I	D	E	R	I	P	A
I	R	T	S	T	I	C	K	O	U	S	N
D	B	U	G	P	S	I	N	S	E	C	T

ant	lice
bee	millipede
bug	moth
butterfly	nymph
dragonfly	pupa
entomologist	roach
flea	spider
grub	stick
hornet	sting
insect	thorax
katydid	wasp
ladybug	weevil

## Myths and Facts About...

### Ladybugs

- The number of spots on a ladybug **does not** tell you its age.



- A ladybug isn't a "bug" – it's a beetle!

Cool web site to check out:

[www.pbs.org/wnet/nature/alienempire](http://www.pbs.org/wnet/nature/alienempire)

This web site has fun online puzzles and lots of great info about insects.



## We want to hear from you

Send us an e-mail at [buglady@classinsecta.ca](mailto:buglady@classinsecta.ca) or mail your stuff to Class Insecta, 91 Roanoke Road, Don Mills, ON M3A 1G5



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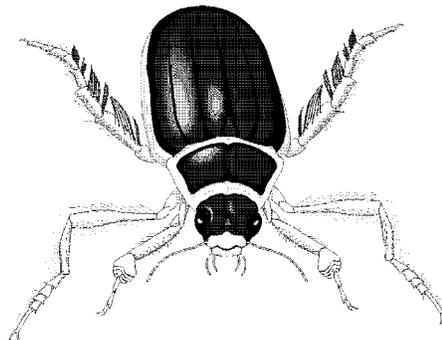
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## Notice to Contributors

### Who Can Contribute:

Observations, articles, etc., to be published in **Ontario Insects**, are welcome from members of the **Toronto Entomologists' Association**. There are no page charges, however, submissions from non-members will require a membership purchase prior to publication. 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 a 600 dpi 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.

# Items for Sale through the TEA

## Books: reproductions of out-of-print books

**The Odonata of Canada & Alaska** (3 volumes) by E.M. Walker  
\$196 Can (\$190 for TEA members who pick it up); In USA: \$145 US surface; \$150 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: \$23 US surface; \$26 US airmail

**The North American Dragonflies of the Genus Aeshna** by E.M. Walker (1921) with colour plates  
\$65 Can (\$60 for TEA members who pick it up); In USA: \$50 US surface; \$53 US airmail

**The North American Dragonflies of the Genus Somatochlora** by E.M. Walker (1925)  
\$55 Can (\$50 for TEA members who pick it up); In USA: \$43 US surface; \$46 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. \$34 Can; In USA: \$25 US.

## Books: T.E.A. publications

**The Ontario Butterfly Atlas** by A.M. Holmes, R.R. Tasker, Q.F.Hess, A.J.Hanks (1991)  
ISBN: 0921631111 \$25 Can (\$20 for TEA members who pick it up); In USA: \$20 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 including articles, notes and records

**Volume 1 (1999)** 16 articles plus records - conservation status ranks, natural history, migration, lists and records, and an illustrated key to the mature nymphs and exuviae of eastern Canadian Stylurus.

**Volume 2 (2000)** 16 articles plus records - significant range extensions ecology, regional lists, conservation and a museum collection.

**Volume 3 (2001)** 18 articles plus records - county and regional lists, range expansions, behavioural notes, conservation status and identification problems.

**Volume 4 (2002):** Due soon

Cost per volume: \$25 Can; In USA/overseas, \$25 U.S.

### Checklist of the Butterflies of the Toronto Region: 135 years of history (2nd edition) Includes flight seasons. Compiled by Barry Harrison.

\$2.50 Can (\$2 for TEA members who pick it up); In USA: \$3 US

### For complete details and to order, contact:

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

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

