



# ALBERTA LEPIDOPTERISTS' GUILD NEWSLETTER – FALL 2012

Welcome to the ALG newsletter, a compendium of news, reports, and items of interest related to lepidopterans and lepidopterists in Alberta. The newsletter will be produced twice per year, in spring and late fall.

## Awards – Hoo boy, are we good or what!

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ALG members were showered with national awards this year. Our president **John Acorn** was presented with the McNeil Medal by the Royal Society of Canada for his outstanding contributions to communicating science to students and the public.



Another medal went to **Felix Sperling**, this being the Entomological Society of Canada's Gold Medal for outstanding achievement in Canadian entomology. Here, Rose Declerck-Floate presents Felix with the medal at this November's Ent Soc Canada/Ento Soc Alberta Joint Annual Meeting in Edmonton (photo by Rick West)



**Charley Bird** was presented with the ESC Norman Criddle Award for his stellar contributions as non-professional entomologist to the furtherance of entomology in Canada. Kevin Floate does the honour of passing on a plaque and a copy of the legendary *Criddle-De-Diddle-Ensis* (photo by Adrian Thyse).

Awards cont. next page...

## Awards...



President's Prizes for best graduate student presentations went to local lep students **Julian Dupuis** (Sperling) and **Kurt Illerbrun** (Roland) at the JAM (photo by Adrian Thyse).

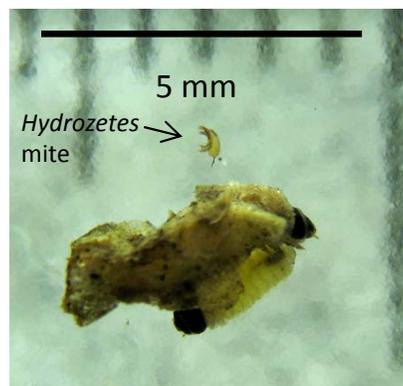


Christie Jaeger won the Harry Clench Award for the first place talk in student presentations at the 2012 joint meeting of the Lepidopterists' Society and the Societas Europaea Lepidopterologica. Felix is proud! (photographer unknown).



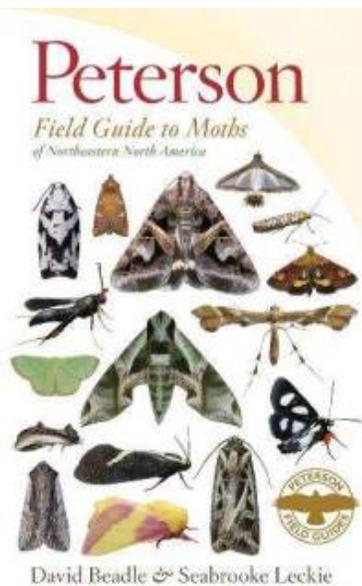
## Mystery of the Tiny Wet Caterpillars

**Heather Proctor** was intrigued to find numerous tiny caterpillars coming out of a Tullgren funnel extraction of aquatic plants taken from the lake at Moose Pasture, the acreage she and Dave Walter own east of Elk Island NP. More were collected from a pond near Caroline by her Zoology 351 students. Heather sent them to Alma Solis, an expert on aquatic Lepidoptera at the Smithsonian Institution. Alma pronounced them the smallest larvae of an *Elophila* sp. (Crambidae) that she'd ever seen. It's not clear what species they belong to, but Greg Pohl's bet is *E. oblitalis* Walker, the 'waterlily leafcutter moth'.



There are no water lilies at Moose Pasture, though, so these larvae must be eating something else. Maybe next year Heather and Dave will try rearing some to adulthood.





**Peterson Field Guide to Moths  
of Northeastern North America -  
D. Beadle and S. Leckie  
a review by Chris Schmidt  
First published in "Trail and Landscape",  
Ottawa Field Naturalists' Club, October 2012.**

The release of a new book on moths in the Peterson Field Guide series caught much of the "moth-o-phile" community by surprise, simply because our moth fauna is vast, and to prepare a good-quality guide takes a considerable amount of time and dedicated effort. But David Beadle and Seabrooke Leckie have managed this task, rather impressively. By necessity, the guide focuses on a specific region (northeastern North America), with emphasis on a subset of the fauna, namely those moths most likely to catch people's eye - large, common or conspicuous. The geographic coverage includes southern Ontario and Quebec, south of about 49°, to the southern extent of Missouri, Kentucky and Virginia, and west to the edge of the Great Plains (including Minnesota and Iowa). Nearly 1500 species are covered; a considerable portion of the 3000-3500 species native to this region.

Replacing an earlier Peterson version of "Eastern Moths" (Covell 1984), this book differs significantly in format and content. At a hefty 611 pages, 500 pages are dedicated to species accounts, with the text page opposite the plate page; about seven species are treated per page, on average. The full-colour opposing text-and-plates format is a significant improvement over the previous "Eastern Moths" version, which relied on separate sections in this respect. The text header consists of a common name (many coined here for the first time, particularly micro-moths), scientific name, MONA catalog number (Hodges et al. 1983) and an indication of abundance. The main text indicates species size (either as total length or wingspan, in mm), and gives a brief description, sometimes with diagnostic characters relative to similar species. Larval hosts and geographic ranges (for those species without maps) are given. The adult flight time is illustrated by an easy-to-interpret phenogram, and a range map is given for nearly all macro-moth species (but not micro-moth species). The number of macro-moths treated is comparable to Covell (1984) with about 1100 species, but nearly twice as many micro-moths (~400 vs. ~230) are covered. For most macro-moth groups, coverage is very good; exceptions include some of the more difficult groups such as the pugs (*Eupithecia*), where only 8 of about 50 Northeastern species are covered. I tested the macro-moth coverage by comparing a one-night catch from late May in eastern Ontario, and all but 12 of 144 species were illustrated.

cont...

*Peterson review, cont...*

Like most popular books on moths, the authors fell into the trap of simply repeating secondary literature citations of larval host plants, thus perpetuating erroneous records; a thorough cross-check with some of the recent high-quality publications on Lepidoptera larvae (e.g. Wagner 2005 and references therein) would have prevented these errors. For example, Wagner (2005) points out that the hosts for *Hypena sordidula* and *H. manalis* are wood nettle and false nettle respectively, not dandelion, alder and butternut. Host plant information is particularly relevant when one considers that absence of the right host plant usually precludes occurrence of a moth species.

This is the first book on North American moths to rely solely on photographs of live specimens. This format makes the guide particularly appealing to prospective moth enthusiasts, since it immediately makes this mega-diverse group of insects accessible without the equipment needed for collecting, preparing and storing specimens. Specimens are as they would appear in life, often displaying the characteristic postures and wing shapes sometimes lost in set specimens. The trade-off in illustrating live moths is that hindwings are concealed in most species, making identification considerably more difficult in groups where hindwing pattern is highly diagnostic – obvious examples include *Noctua*, *Cryptocala*, some of the *Catocala*, and *Sphinx*. Photographs are generally high-quality, and most species (except larger species such as silk moths and hawk moths) are reproduced larger than life-size, with one shadow silhouette per page at life size for scale. A few of the life-size silhouettes are too small, such as *Pyrrhia exprimens* and *Thysania zenobia*. This system of maintaining relative size among similar species works quite well, since differences in size often aid in identification. I much prefer this to having all species illustrated at the same size, with individual scale bars. Images are on a white or pastel background, colour coded to family. The pastel background works well for white moths, which are often difficult to reproduce with good colour rendition. Overall, colour rendition is very good, with a few exceptions like *Orthofidonia flavivenata* (too orange) and *Catocala lachrymosa* (too green). Having reviewed many of the Macro-moth identifications prior to publication, I could find no misidentifications except the right image of *Grammia williamsii*, which is *G. franconia* – perhaps I'm to blame!

cont...



*Grammia williamsii* at left  
and *G. franconia* at right  
<http://mothphotographersgroup.msstate.edu/slow.php?plate=22&page=6&size=m&sort=h>  
<http://v2.boldsystems.org/views/taxbrowser.php?taxon=Grammia>





*Swammerdamia* on the left and *Venusia* on the right. These specimens are so far northeastern that they are from the U.K.

<http://www.naturespot.org.uk/species/swammerdamia-pyrella>

<http://ukmoths.org.uk/show.php?bf=1873>

*Peterson review, cont...*

Throughout the text and checklist sections, species are grouped according to family and further broken down into subordinate groups (subfamily or tribe) for the largest families. Although some small groups such as the Saturniidae are further divided into subfamilies, others such as Notodontidae are not. The inclusion of several small erebid subfamilies into a single group (“Assorted Owlets”) is understandable, but the grouping of multiple, unrelated micro-moth families is rather frustrating – families Tineidae with Acrolophidae; Lyonetiidae with Yponomeutidae; Glyphipterigidae with Plutellidae and Acrolepiidae; etc. These groupings leave the reader in the dark as to which family a species belongs to – for example, is *Swammerdamia* a lyonetiid or an yponomeutid? Minor glitches include the misspelling of Herminiinae throughout, and the omission of the family Attevidae for *Atteva*. The style of deriving common names from family-group taxa is also inconsistent, for example use of “Archips Leafrollers” rather than “Archipine Leafrollers” for the tribe Archipini; “Cochylid Moths” rather than “Cochyline Leafrollers”; “Sparganothid Leafrollers” rather than “Sparganothine Leafrollers” – in contrast to “Olethreutine Moths” for “Olethreutine Leafrollers”. The lack of standardized common names in North American moths will unfortunately continue to be problematic for those not comfortable with scientific names – many common names differ from those used in recent popular works such as Wagner (2005) and Wagner et al. (2011). This also makes referencing more difficult, as the index lists common names and species by genera, but separate entries for species epithets are not provided – i.e., is indexed under “*Venusia – cambrica*” and “Wave - Welsh”, but not under *cambrica*. This will invariably limit the utility of the index and the book as generic combinations change through taxonomic revisions. Lastly, the characteristic moth silhouettes given on the back pages to serve as an identification guide would have benefited from accompanying page numbers for easy reference.

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*Peterson review, cont...*

A significant shortcoming of this otherwise impressive guide is an omission – no mention whatsoever is made of moth collecting and specimen preservation techniques, or references to literature for such. One of the great challenges facing entomologists today is the false perception that collecting insects is unnecessary or even harmful, and that entomology should ‘progress’ from a collection-based to an observation-based science, much like ornithology has over the past century. Without going into a lengthy discussion, moth populations, like other insects, are extremely resilient to collecting, and museum specimens are fundamental to taxonomic work, conservation, education, diagnostics, and as vouchers for molecular and morphological information – photographs can contribute little or nothing to these disciplines. Pohl (2011) gives an excellent overview for the importance of insect collecting (see also Schweitzer et al. 2012). Although the lack of basic knowledge for many Northeastern moth species is acknowledged in the introduction, the omission of collecting techniques, combined with a necessarily restricted coverage of difficult groups (especially micro-moths) where only genitalic dissections are diagnostic, give the reader a rather ‘vertebrate-centric’ impression that moths are well-known: so much so that all one needs is a camera and field guide. Certainly this will introduce more people to the study of and appreciation for moths, but taking the extra step of providing an entry point into serious entomology would have improved the impact of this guide considerably.

This guide will likely become one of the top popular entomology books in North America – it is currently the top-selling Lepidoptera book on Amazon for good reason. The synergy of broad faunal coverage, accessibility to different skill levels and novel use of full-colour photos of live moths (many illustrated for the first time) opens the door to one of the most fascinating and diverse insect groups that we share our planet with. David Beadle and Seabrooke Leckie are to be commended for this unparalleled addition to the naturalists’ book shelf.

**Literature cited**

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- Wagner, D.L. 2005. Caterpillars of eastern North America: a guide to identification and natural history. Princeton University Press, Princeton, NJ, 512 pp.
- Wagner D.L., Schweitzer, D.F., Sullivan, J.B., Reardon, R.C. 2011. Owllet Caterpillars of Eastern North America. Princeton University Press. 576 pp.





## 8 July 2012 Dry Island Butterfly Count Report from Charley Bird



*Location: Dry Island Buffalo Jump Provincial Park, Red Deer River Valley, east of Huxley.*

At 10 AM, when the Count started at the Upper Viewpoint/Parking Lot, it was sunny with a light southerly wind. Four species of butterflies were seen. We drove down to the picnic area at 10:15. It was sunny and hot, up to 34 C, for the remainder of the Count which ended at 4 PM. Wildflowers were in abundance. Mosquitoes were somewhat of a problem. Kilometers on foot estimated to be over 10.

The participants (42) were Marian Belich, Elizabeth Bagdan, Kurt Bagdan, Ann Bird, Charley Bird (Compiler), Tony Blake, Lori Brohman, Claudia Cameron, Sandy Davis, Les Dobos, Bruce Christensen, Shirley Coulson, Ava Diebolt, Bernie Diebolt, Emily Diebolt, Erinn Diebolt, Jerard Diebolt, Leslie Diebolt, Janet Enns, Dorothy Dickson, Sylvia Glass, Bernice Hafner, Gail Hughes, David Lawrie, Rhonda Mackay, Sandra Mailer, Irene McIntosh, Kelly Mcivor, Gordon O'Handley, Linda O'Handley, Ashley Patterson (Conservation Officer), Chris Pfeifle, James Podlubny, Michelle Roth, Mary Roy, Lorraine Schowalter, Tim Schowalter, Kevin Stewart, Brooklyn Vale, Sheila Vale, Tracy Vale, Suzanne Visser and Kathy Weisse. Because of the large number of participants, we divided up into a team lead by David Lawrie, one led by Tony Blake and one led by Charley Bird and a small group who watched near the picnic tables.



The 2012 Dry Island Buffalo Jump counting crew

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Dry Island Buffalo Jump cont...

SPECIES OBSERVED

- Oarisma garita* (Garita Skipperling) – 24  
*Polites mystic* (Long Dash Skipper) – 1?  
*Polites themistocles* (Tawny-edged Skipper) - 4  
*Pyrgus communis* (Common Checkered Skipper) – 13  
*Thorybes pylades* (Northern Cloudywing Skipper) – 1  
*Papilio machaon dodi* (Dod's Old World Swallowtail - 25  
*Papilio glaucus canadensis* (Tiger Swallowtail) - 1  
*Pieris occidentalis* (Western Checkered White) - 13  
*Colias alexandra christina* (Christina Sulphur) - 1  
*Colias philodice* (Clouded Sulphur) - 15  
*Lycaena helloides* (Purplish Copper) - 1  
*Harkenclenus titus* (Coral Hairstreak) - 1  
*Icaricia shasta* (Shasta Blue) – 7, all near *Eriogonum flavum* (Yellow Umbrella-plant)  
*Everes amyntula* (Western Tailed Blue) – 3  
*Lycaeides melissa* (Melissa Blue) – 7  
*Glaucopsyche lygdamus couperi* ( Silvery Blue) – 12+  
*Plebejus saepiolus* (Greenish Blue) – 15  
*Nymphalis antiopa* (Mourning Cloak) - 2  
*Vanessa atalanta* - Red Admiral) – 1  
*Speyeria cybele pseudocarpenteri* (Great Spangled Fritillary) - 14  
*Speyeria atlantis lais* (Northwestern Fritillary) – 28  
*Speyeria callippe* (Calippe Fritillary) - 3  
*Phyciodes batesii* (Tawny Crescent) - 6  
*Phyciodes cocyta* (Northern Crescent) – 16  
*Basilarchia arthemis* (White Admiral) - 7  
*Cercdyonis pegala* (Meadow Brown) - 2  
*Coenonympha inornata* (Inornate Ringlet) – 42  
*Danaus plexippus* (Monarch) - 1



*Lycaena helloides* (Bdvl.) (male dorsal)  
ALBERTA: 30km SE Vulcan 24-VIII-1996 (D. Lawrie)  
U.A. Strickland Museum #UASM25112 (G. Anweiler image)



*Speyeria callippe calgariana* (McD.) (male ventral)  
ALBERTA: 30km SE Vulcan 19-VI-1995 (D. Lawrie)  
U.A. Strickland Museum #33795 (G. Anweiler image)

One dragonfly was identified - *Ophiogomphus severus* (Pale Snaketail). It has a pale green, rather than blue, color.

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### *Dry Island Buffalo Jump cont...*

General Comments: An excellent turnout (43), exceeding that of the 32 who took part in 2011 and the highest number of participants ever for the count. Twenty-six species of skippers and butterflies and 268 individuals were seen, the highest number of any of the annual Counts which started in 1999. One species, *Nymphalis antiopa*, had not been seen on any of the previous counts. Many participants had nets. The Count being in a Provincial Park, was catch, identify and release. All agreed that this Park is one of the most beautiful in Alberta and all hoped that, with continued good management, it will remain so. Lots of scenery and flower photos were taken.

Some of the plants seen in flower were: *Achillea millefolium* (Yarrow), *Agrimonia striata* (Agrimony), *Anemone canadensis* (Canada Anemone), *Arnica fulgens* (Shining Arnica), *Campanula rotundifolia* (Harebell), *Cornus stolonifera* (Red-osier Dogwood), *Eriogonum flavum* (Yellow Umbrella-plant), *Gaillardia aristata* (Brown-eyed Susan), *Galeopsis tetrahit* (Hedge Nettle), *Galium boreale* (Northern Bedstraw), *Gaura coccinea* (Scarlet Butterfly-weed), *Geum aleppicum* (Yellow Avens), *Gutierrezia sarothrae* (Broomweed), *Helianthus annuus* (Common Sunflower), *Hymenoxys richardsonii* (Colorado Rubber-plant), *Linaria vulgaris* (Toadflax), *Lilium philadelphicum* (Western Wood Lily), *Linum lewisii* (Wild Blue Flax), *Lygodesmia juncea* (Skeleton-weed), *Lysimachia ciliata* (Fringed Loosestrife), *Medicago sativa* (Alfalfa), *Melilotus alba* (White Sweet-clover), *M. officinalis* (Yellow Sweet-clover), *Mirabilis hirsuta* (Hairy Umbrella plant), *Monarda fistulosa* (Wild Bergamot), *Opuntia fragilis* (Fragile Prickly-pear Cactus), *O. polyacantha* (Prickly-pear Cactus), *Penstemon gracilis* (Lilac-flowered Beardtongue), *Petalostemon purpureum* (Purple Prairie-clover), *Potentilla anserina* (Silverweed), *Potentilla arguta* (White Cinquefoil), *P. fruticosa* (Shrubby Cinquefoil), *Rosa acicularis* (Prickly Rose), *Sisyrinchium montanum* (Blue-eyed Grass), *Sphaeralcea coccinea* (Scarlet Mallow), *Stellaria longifolia* (Long-leaved Chickweed), *Symphoricarpos occidentalis* (Buckbrush), *Taraxacum officinale* (Common Dandelion), *Tragopogon dubius* (Goat's-beard) and *Vicia americana* (Wild Vetch).



## **2012 Alberta Lepidopterists' Guild Annual General Meeting**

The ALG executive and interested members convened at the house of Felix and Janet Sperling on Dec 1. Among the business discussed was timing of these **upcoming events**:

- Feralia: likely to be a symposium on the theme of atlases of Alberta arthropods on Sat 16 Feb, followed by Feralia party at John Acorn's house
- Dry Island Butterfly Count: likely 1st Sunday after long weekend in July
- Vegreville Butterfly Count: probably around last weekend in June



## The Monarch Migration of 2012 – A Vegreville Perspective

A Documentation of the Monarch life-cycle at the home of Bruce and Helen Christensen

By Robert B. Hughes - with additional data from Bruce Christensen

The migration of the Monarch butterfly, *Danaus plexippus*, into Alberta was first noted by a very excited Gary Anweiler, via the Alberta Lepidopterists' Guild list server (AltaLeps), on June 7, 2012, in Edmonton, Alberta. Gary told us that he managed to get his bath robe and slippers on, before running outside to attempt catching one of these long range migrants. Before long, there was a flood of emails to AltaLeps from others in the Edmonton region, relating their own sightings of Monarchs. John Acorn saw them in Edmonton, and Shelley Ryan-Hovind spotted some at The Devonian Botanic Garden, on Hwy 60, both on June 7. Further sightings followed: from Edmonton, Calgary, Barrhead, and Whitecourt, Alberta, then Saskatoon and Blaine Lake, Saskatchewan.

That same day, after reading Gary's account, I had just handed out some nets and was trying to catch up to a 5 and 6 year old who wanted to catch butterflies. By the time I got to the empty lot full of dandelions and long grass they had run to, they had caught some pond damsels, and told me they had just seen a giant orange butterfly. From their description, it sounded like a Monarch. A few hours later I saw one in Lavoy, Alberta, just east of Vegreville.

Then on June 11, I got a call from Bruce Christensen in Vegreville. Helen Christensen had been out mowing the front yard, when she noticed a large orange butterfly. Lo and behold, it was, you guessed it, a Monarch. Bruce asked if I could rip over and get some pictures. When I got there, Bruce, Helen and a neighbour were gathered about the Showy Milkweed, *Asclepias speciosa* that had been growing by the front door for 12 years. I managed to get some photos of what appeared to be two female Monarchs visiting the milkweed and laying eggs. One looked worn from the migration, and the other fresher and darker orange. The butterflies were very approachable, and didn't seem to mind us standing about taking pictures. See photo 1.



Photo 1: Monarch female ovipositing on Showy Milkweed, June 11, 2012  
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*Monarch migration cont...*

On June 18, I visited a local Vegreville bedding plant grower and found more Monarchs nectaring on Chives and Lantana. The Monarch chat on AltaLeps soon turned to questions such as “What caused this large, unprecedented influx of Monarchs”? “What route did they take”? The general consensus was that strong southeast winds had assisted their migration from the Dakotas and Montana, across Saskatchewan, and into Alberta. Some Monarchs showed up in Edmonton in 2007, but not like the wave and northerly extent we just experienced in the summer of 2012, across Saskatchewan and Alberta. By June 18, Janet Scott reported Monarchs in Medicine Hat, and Monica Higuera saw them in Cypress Hills, Alberta, where they are normally known to occur. On June 25, Linda Morgan spotted Monarchs nectaring on American Vetch, at Brule, Alberta, while maintaining her Bluebird nest box trail.

The 2012 Monarch migration into Alberta stimulated AltaLeps email discussions, on many related topics, including butterfly migration, wind and weather patterns, Monarch releases, larval host plants, *Asclepias* species ranges, macro photography, stable isotope analysis, and butterfly tagging. Butterfly field data websites, such as Monarch Watch, eButterfly, and Journey North, were also discussed and presented to a wider audience through AltaLeps.

Meanwhile, back at the Christensen home, approximately 25 Monarch larvae had hatched. Bruce figures the first hatch was in the morning on June 25. The first instar larvae create tiny holes in the milkweed leaves, while the later instars proceed to quickly strip the plants. I had purchased one Swamp Milkweed, *Asclepias incarnata*, so I planted it next to the quickly disappearing *A. speciosa*. By July 14, most of the larvae were into the pre chrysalis stage and attaching to the undersides of adjacent Peony leaves. The dense Peony bushes provided very good shelter. The later feeding larvae finished off the Showy Milkweed (Photo 2) and ate most of the Swamp Milkweed.



Photo 2: Monarch larvae on Showy Milkweed

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*Monarch migration cont...*

As I documented the Monarch life cycle, unfolding before us in the Vegreville area, I soon found that normal photos just didn't show the exquisite detail of butterfly, larva, and chrysalis. So, I had to switch to macro photography. Fortunately, my camera was capable of super-macro shots, allowing me to get within 2 - 3 cm of the subject. This was really handy for chrysalis photos, which to me look like gold-adorned, jade pendants. The scene of pupating Monarchs, underneath the Peony, was like a green-hued chrysalis garden (Photo 3).

After discussions with John Acorn and Tyler Flockhart, Bruce and I agreed to collect two Monarch butterflies and send them to the University of Guelph, for stable isotope analysis, to assist in determining the western North America migration route for this species. Bruce moved a few of the earliest pupating larvae inside. The early larvae had only fed on *A. speciosa* that had been in the ground for 12 years. Whereas the recently purchased Swamp Milkweed, *A. incarnata* had started its growth somewhere in the U.S. These specimens, emerging on July 23, and *A. speciosa* leaves were shipped to Guelph on August 13, 2012.

The following generation of Monarchs, that remained outside, started emerging on July 30, continuing for the next few days, with a few late butterflies up to August 7. The emergence stretched out over nine days due to cool weather. Then at the end of the summer, on August 27, I saw one Monarch feeding on Alfalfa flowers, just west of Vegreville.

Other people were also busy studying Monarchs this year. Janet Scott had many Monarchs over the summer, where she lives in Medicine Hat. Janet tagged 50 adults, starting on August 3, and sent many specimens, as well as milkweed leaves to Tyler Flockhart for stable isotope analysis. She mentioned seeing Monarchs all around her city and many more than usual, with many sightings of Monarch caterpillars. Her last date where she saw an adult Monarch was October 17. John Acorn also sent in Monarch specimens for the stable isotope analysis.



Photo 3: Monarch chrysalis garden, July 16

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### *Monarch migration cont...*

On July 27, during the National Moth Week evening, at The Devonian Botanic Garden, I was able to get a few photos of Shelley's Monarchs before the light faded. We found a chrysalis and there were still a few caterpillars feeding on Showy Milkweed, *A. speciosa* and Common Milkweed, *Asclepias syriaca* (photo 4).

That's the Monarch story from our perspective in Vegreville, plus a few details from other locations in Alberta, Canada. For those wanting to know more about Monarchs, I recommend the Imax film, Flight of the Butterflies, as an incredible way to finish off an eye opening butterfly season.

### **Monarch 2012 Time Line for Vegreville:**

June 7 – First observed adults.

June 11 – First oviposition at Christensen's home.

June 18 – Adults feeding at various locations and on a variety of flowering plants: milkweed, lilacs, chives, Lantana.

June 23 – Monarchs observed on Vegreville Butterfly Count.

June 25 – First hatch at Christensen's.

July 12 – Pre-chrysalis stage initiated.

July 16 – Chrysalis stage

July 23 – Adult emergence inside

July 30 to Aug. 7 – Adult emergence outside

Aug. 27 – Adult observed feeding on Alfalfa.

Sept. 15 – One adult flying south, at Birch Lake, Innisfree, AB.



Photo 4: Monarch caterpillar on Common Milkweed, July 27

### **Further reading and viewing:**

Monarch emergence <http://www.fredmiranda.com/forum/topic/1108140>

Journey North News <http://www.learner.org/jnorth/current.html>

Monarch Watch <http://www.monarchwatch.org/index.html>

Monarch Watch – biology <http://www.monarchwatch.org/biology/cycle1.htm>

Saskatchewan News article about Monarch Migration

<http://www.newstalk650.com/story/monarch-butterflies-largest-migration-past-140-years/63120>

CBC News on Monarchs in Alberta

<http://www.cbc.ca/news/canada/calgary/story/2012/06/20/monarch-butterfly-migration-alberta.html>

eButterfly online data form <http://www.ebutterfly.ca/>

Secrets of Wildlife Migration Revealed through a Forensic "Isotopic Tag"

<http://www.ec.gc.ca/scitech/default.asp?lang=En&n=D318A198-1>

Mind Your Monarchs

<http://whyfiles.org/083isotope/2.html>

SK Films – Flight of the Butterflies <http://skfilms.ca/flight-of-butterflies/>

Flight of the Butterflies Official Trailer #1 (2012) - IMAX 3D Movie HD

<http://www.youtube.com/watch?v=03soGDi4gSg>



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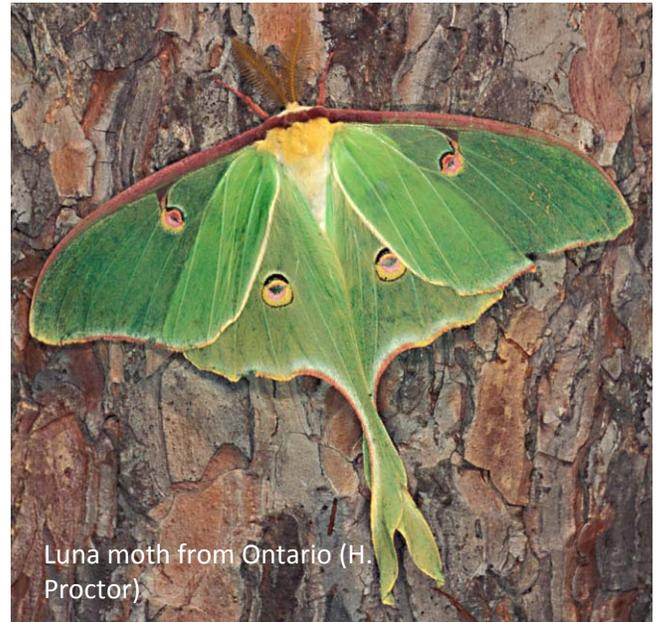
## *Luna moths discovered in Alberta!*

By Greg Pohl and Matthias Buck, with data compiled by Pete Heule (Royal Alberta Museum), Danny Shpeley (University of Alberta), and Doug Macaulay.

For several years there have been hints that Luna Moths, *Actias luna* (Linnaeus), might possibly occur in the boreal forests of northeastern AB. This spectacular and elusive moth has developed a sasquatch-like reputation here, but until this year, there were intriguing stories but no hard evidence for their occurrence in the province.

Luna Moths are the most conspicuous and recognisable moth species in North America. No other species north of Mexico could possibly be mistaken for one. They fly in eastern Canada from late May to early July, with a peak emergence in early June. The adults are active very late at night, between midnight and 3:00AM. In the northern part of their range, the larvae prefer birch, but they have been reported from aspen, willow, maple, and several other species (McGugan 1958). In the southern United States they prefer several temperate tree species (Ferguson 1972).

Luna Moths were previously known to occur across southeastern Canada from central SK to the maritimes, and south all across the eastern United States. The species is well known from as far north as Timmins in ON, and The Pas and Flin Flon in MB (Ferguson 1972; Tuskes et al. 1996). In SK, Luna Moths are known from Prince Albert (McGugan 1958) and Big River (Pohl, unpublished data). In the Big River area, in an extensive UV light trapping program (approximately 700 trap-nights over three years) to monitor non-target effects of Bt spraying for Spruce Budworm, only one Luna Moth was collected among over 170,000 moth specimens.



That specimen (in the Canadian Forest Service's Northern Forestry Centre Research Collection in Edmonton) remains the most westerly record known in North America, and it appeared to mark the western limit of the Luna Moth's range.

Despite the known range limits, there have been rumours of Luna Moths occurring farther west. ALG member Doug Macaulay (pers. comm.) knew a man from the Fort McMurray area (since passed away) who was certain that he saw a Luna Moth there in the 1990s. The man knew the species well from his previous home in eastern Canada, and was certain of what he'd seen. Despite the lack of a specimen or photo record, it was a compelling tale; the rich boreal forest around Ft. McMurray is very similar to the forests of central SK, with plenty of birch and a very similar climate to Prince Albert, Flin Flon and Timmins.

cont...

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## *Luna moths...*

There was no biological reason they shouldn't be around Ft. McMurray; it's just that Lepidopterists hadn't seen one there yet. Although there was no reason to doubt the sighting, there was always a possibility that it was an accidental or deliberate introduction, so it remained an unverified anomaly.

Macaulay suspected that Lunas likely occur in the birch forests along the Clearwater River Valley east of Ft. McMurray, and made several trips searching for them there. He endured some difficult situations chasing after Lunas. He collected several other new AB records on those trips, such as *Lapara bombycoides* Walker and *Acrionicta tritona* (Hübner), but the Lunas eluded him. Based on the suitable habitat there and Macaulay's information, Pohl et al. (2010) listed the Luna Moth as "probable" for AB.

That all changed in 2012. In the span of two weeks, four different people independently contacted the authors, or Danny Shpeley at the University of Alberta, with reports of Luna Moths from the Ft. McMurray area. A fifth record was reported to the "Butterflies and Moths of North America" (BAMONA) website (Opler et al. 2012). All five of these reports were accompanied by photos, and four have detailed locality information. The records and images are as follows:



The Oilsands sighting, Athabasca Oilsands, J. Gatten & J. Fenneman, LGL Limited, 28 May 2012.

### ***The Oilsands Sighting, 28 May 2012.***

Jeremy Gatten contacted Greg Pohl about a Luna Moth he and co-worker Jamie Fenneman saw and photographed on 28 May while working for LGL Limited, in the forest near the oilsands developments. The site was just west of the Athabasca River about 70km north of Ft. McMurray. He wrote; "the area was burned last year, and the individual we found stood out like a sore thumb on a burnt spruce". He sent the photo, and precise UTM coordinates that correspond to 57.3348°N, 111.6899°W. The specimen appears to be a female, and is missing one of its tails. Mr. Gatten takes some beautiful photos of moths and birds, and writes a blog about them, *The Naturest Naturalist* (Gatten 2012). Besides taking the first Luna Moth photo in AB, in 2012 he also photographed the first AB record of an Elusive Clubtail dragonfly, *Stylurus notatus* (Rambur).

### ***The Airport Rescue, 1 June 2012.***

On June 2, Kelly Brouwer wrote to Danny Shpeley at the University of Alberta, asking him if he could identify a moth in a photo: "So sorry Danny, no we do not have the specimen. It was found alive under an aircraft, placed on the grass and flew away. It was as big as a man's hand! So sorry we didn't keep it, it seemed a shame to hold captive such a beauty." The photo (next page) was taken by Jeff Pulkinen. The specimen appears to be a fresh female. The Ft. McMurray airport is located at 56.6556°N, 111.2234°W. cont...

*Luna moths...*

***The Quarry Ridge encounter, 1 June 2012.***

In early June, Clarence Makowecki of Ft. McMurray contacted Pete Heule at the Royal Alberta Museum, about a Luna Moth he photographed in the woods near Ft. McMurray, at 56.6755°N, 111.3569°W. The photo is not a closeup, but it is clear enough to see by the wide feathery antennae that it is a male. The site is near a subdivision on the south end of Ft. McMurray, about 7km from the airport.

***The abacus99 sighting, 6 June 2012.***

Little is known about this sighting. A report and two photographs of a Luna Moth were submitted by "abacus99" to the BAMONA website (Opler et al. 2012, record #719310), as follows:

Date of Observation: June 06, 2012

Submitted By: abacus99

Species: *Actias luna* Luna moth

Specimen Type: Photograph

Observation Notes: Seen in Fort McMurray. Northern Alberta, Canada. Sitting stationary on the grass beside a stand of white birch.

Approximately 22 degrees celcius outside with impending thunder showers but no rain as of time of picture taking.

Status: Resident

Verified By: BAMONA



The Quarry Ridge encounter, C. Makowecki, 1 June 2012.

abacus99" photos 1 and 2, Ft. McMurray, "abacus99", 6 June 2012.



The identity of "abacus99" is not known. The photos available on the BAMONA website, though not of high quality, clearly indicate a fresh male specimen on a lawn. It is not known exactly where in Ft. McMurray the moth was photographed. It is possible that this specimen is the same as the male Quarry Ridge moth, but the tails look slightly different.

***The Gatepost Luna, 11 June 2012.***

On 12 June, Bart Crist wrote to Matthias Buck, about another Luna sighting: "This moth was sighted by my neighbor and I hanging out on our gate to the backyard. I googled it and matched it up, and found an article with you commenting on this moth. Thought you might be interested. This is a very impressive moth." Indeed it is, a fresh female. The moth was photographed in a new subdivision on the northwest end of Ft. McMurray, at approximately 56.7697°N, 111.4660°W.

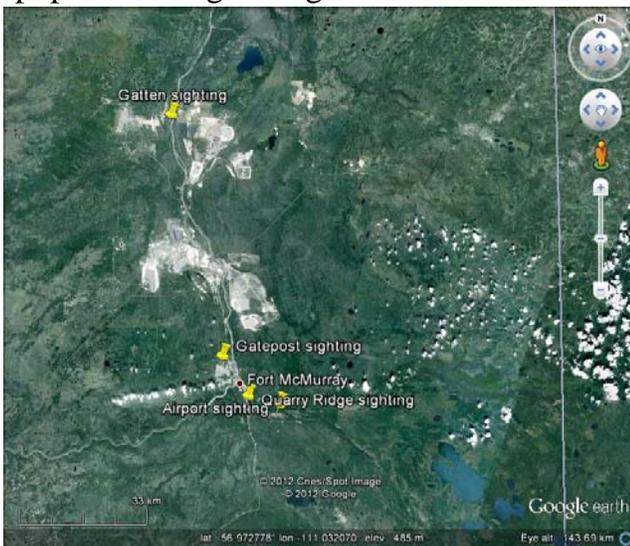


The Gatepost Luna, Ft. McMurray, B. Crist, 11 June 2012.

*cont...*

## Luna moths...

These specimens are quite widely distributed around the Ft. McMurray area, and they clearly represent at least three, and almost certainly at least four, different individuals. Besides being the first photo of a Luna in AB, Jeremy Gatten's photo represents the most westerly record, and by far the most northerly record of the species. We accept these four records collectively as proof that Luna Moths are most definitely part of the AB fauna. We suspect that they are a fairly recent arrival to AB, as there are no historical records or apparent sightings prior to the unverified report from the 1990s. The four separate sightings this year suggest that there is now a thriving population. Their discovery in such numbers may be a reflection of the increasing human presence in the Ft. McMurray area, or it may indicate that the Luna Moth population is growing as well.



Based on these records, the Alberta Lepidopterists' Guild has awarded the annual Wolley Dod Discovery Award in 2012, to the citizens of Ft. McMurray, for their collective efforts discovering the Luna Moth in Alberta.

Locations of four Luna Moth sightings in the Ft. McMurray area of northeastern AB.

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## A Plenitudinous Pollard: 2012 As One Heck of a Butterfly Season

by John Acorn

I've been paying attention to butterflies since I was 5 years old, for the last 49 years, and I have lived in Edmonton almost all of my life. At first, I collected them (and I still do), but beginning in 1993 I helped to organize annual butterfly counts as well. Many of us found, however, that butterfly counts were fun, but not much good for monitoring changes in butterfly numbers, since you rarely manage to sample the same point in the flight period of any particular species from year to year. So in 1999 I began weekly "Pollard Counts," along a route in Edmonton that takes me (over the course of 1 to 2 hours) from the parking lot just northwest of the Groat Bridge, to just upstream of the mouth of McKinnon Ravine, with a quick side trip into the mouth of Ramsay Ravine as well. Numerous people have helped me with this project over the years, in particular Christianne McDonald, who is now working on her MSc. with Felix Sperling and me.

After collecting Pollard Count data in 1999, 2000, 2002, 2007, 2009, and 2010, a pattern began to emerge, as we say, from the data. For the most part, there was little change over the decade. However, a general trend toward hot, dry years did result in the local disappearance of at least three species (red-disked alpine, common alpine, and arctic skipper—all with grass-feeding caterpillars) from my now brown and dusty south-facing study area (although it was clear that these butterflies were still abundant very nearby at cooler, less sun-baked sites). The bronze copper had also disappeared from my route, presumably because its spring-fed marsh was by now a thick willow swamp. I presented these findings at the annual meeting of the Entomological Society of Alberta, and most folks I spoke with seemed to think they were at least coherent, if not minimally interesting.



Japanese student volunteers accompany Christianne McDonald and John Acorn on a Pollard Walk in early September.

The summer of 2011, as you will remember, was a lot cooler, and came with quite a bit of rain. Butterfly numbers on my walks were about average, and the alpines and arctic skippers were still absent from my sites. I fully expected another cool, wet summer in 2012, but I was surprised instead to experience both warmth and moisture, with good soil moisture persisting from the previous year.

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*Pollard cont...*

The season began with impressive numbers of overwintered adult mourning cloaks and Milbert's tortoiseshells. Then, spring azures appeared in greater abundance than ever before. On June 7, my first two monarchs appeared (see Rob Hughes article on this year's irruption of monarchs). From then on, it was simply overwhelming. Over the entire season I counted 1935 butterflies in the course of 25 outings, breaking my previous record of 686 in 16 outings. Even when corrected for effort and season, I was encountering one and a half to two times the number of butterflies per outing compared to any other year. On June 12 I tied my record for number of species (14) on June 22 I set a new record for number of individuals (198). I identified 36 species in 2012, far outdoing my previous record of 26, in 1999. The following species set new record highs on my route: Hobomok skipper, long dash, Canadian tiger swallowtail, cabbage white, spring azure, silvery blue, western tailed blue, and mourning cloak. I suspect the European skipper also reached new highs this year, but I was out of town during the peak of its flight season. New species for the count included monarch, roadside skipper, red admiral, tawny crescent, and orange sulphur. And both species of alpines did return to my study area as well, although I'm still waiting for the Arctic skipper.

As the season progressed, I watched carefully for newly emerged monarchs, but saw none. I should mention, however, that there was clear evidence of monarchs breeding locally, and to Rob Hughes' records I can add good numbers at Wetaskiwin, the mouth of the Blindman River, and a fresh adult near the Vega Ferry Terminal up by Fort Assiniboine on August 9. Even in Medicine Hat, it was clear that this year's monarch numbers were far higher than any I could remember, and Jan Scott confirmed this while I was there in mid July.



John Acorn and son Benny surveying butterflies in McKinnon Ravine (note the carefully documented cabbage white in flight in front of John's right foot).

In early September, Monarch Watch announced that this year's migration through the eastern US was much smaller than usual, but about a week later the observers on Hawk Mountain, Pennsylvania reported a record high count of migrating monarchs. As I write this, the monarchs are just arriving in Mexico, and we still don't know if this year was good, bad, or average—we will have to wait until February to find out for sure. Still, I can't help but feel that many of our eastern and southern colleagues assumed that monarchs had overshot their range into central Alberta, and were doomed—I think that Alberta actually produced not a bad crop of return migrants, but I could easily be wrong.

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*Pollard cont...*

Interestingly, mourning cloaks had not only a good year, but also an obvious second summer generation. For example, I caught a larva near Clyde on August 17, which emerged on August 31. In early September, James Glasier and I were in southern Alberta, watching hundreds of cloaks flying more-or-less south over open grasslands nowhere near the usual woody habitats of this species.

As usual, I was hoping for a butterfly sighting in Edmonton in November, and it seemed to me that this could be the year. Such, however, was not to be the case, and the butterfly season was clearly over by the middle of October.

What will next year bring? Will we see more monarchs (many of us are planting milkweed in anticipation), more migrants, or more record-breaking numbers? Or perhaps things will resemble a normal year, of either the wet or dry variety. Then again, maybe we will see a pattern that is entirely different and unanticipated. No matter what the outcome, I am still enthusiastic about my Pollard walks, and still intrigued each and every time I set out, even after 126 walks and 5,627 butterflies.



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**Lilac Ash Borer *Podsesia syringae* in Edmonton**

<http://www.edmontonjournal.com/technology/Huge+infestation+threatens+southwest+neighbourhood+trees/7630410/story.html>

EDMONTON - Southwest Edmonton neighbourhoods are suffering a serious infestation of lilac ash borers that's putting the future of 1,700 boulevard and park trees at risk. Although the moth larva is widely distributed in Edmonton, large numbers of the destructive insect have turned up in ash around Terwillegar Towne and Terwillegar South, city principal of forestry Jeannette Wheeler says. "Some of these areas have high water tables. Combined with ... just being newly planted, the trees are under a lot of stress," she said Thursday, adding this is the city's largest borer outbreak. "This was unexpected. It's a new one for us."

Most of the ash involved were planted within the last 15 years. Workers have put pink paint on trees affected by the bugs, which eat holes into the bark and can kill their hosts if they do too much damage. Staff are now assessing which trees need to be removed to stop the insects from spreading, with those facing the axe receiving additional marking within a few weeks and cutting and chipping over the winter, Wheeler said. She doesn't think all the trees will have to go, but can't estimate how many will need to be chopped down or the budget for the work. Some of the borers can be dealt with by spraying or using biological controls such as parasites and traps scented with reproductive chemicals.

"This is a lot of trees that have been planted and established. It costs us about \$1,200 to replace each of these, so we're looking at about \$2 million if we were to replace all (of them)," she said. "I don't think we have done anything wrong here. It's just that we have found a problem ... Now we're looking at ways to mitigate (it)." The work will probably last about two years to cover the lilac ash borer's life-cycle, she said. *cont..*

*Lilac ash borer...*

Although the fate of the trees is unclear, Terwillegar Towne resident Kerri Smiley is worried about what will happen on her block, where she calculates 90 per cent of the forest canopy has been identified as a borer bastion. “They’re just starting to really look like boulevard trees rather than just sticks in the ground ... It’s almost at the height of my two-storey home. We’re not talking about little saplings.” Smiley does fall deep-root watering, pruning and insecticide treatment if necessary to keep healthy the tree beside her house, which is one of the few along the street that isn’t infested. “I would rather see them treated if there’s a method to take care of them ... I don’t want them chopped down,” she said. “They’re important to me. They’re beautiful.”

Terwillegar Community League president James Richardson said in an email they’re aware of the number of trees marked as infested by pests. “It is regrettable both for environmental and esthetic reasons that many, if not all, are scheduled for removal. We continue to work with our city councillor to ensure that the affected trees will be replaced in a timely manner.” This is the latest bad news for Edmonton’s urban forest, which has been hard hit by dry weather over most of the past decade. In the past, the city typically replaced 600 to 900 trees a year, but since 2002 that figure has soared to more than 4,000 lost annually and spending has increased. Last week, 31 ailing elms in the Whyte Avenue median east of 99th Street were cut down, some of them having elm bark beetles and red elm weevils. Wheeler said any ashes taken away in the southwest will be replaced, unless they’re in a bad growing location. She hopes to plant a wider variety of species that might include oak, maple and linden to increase diversity, but admitted there’s a limited selection of trees that do well in Edmonton’s harsh boulevard conditions.

“We want to increase the number of trees in the city. This really hurts when we start chopping down trees ... We’re not moving forward.”

gkent@edmontonjournal.com



G. Anweiler

1 cm  
*Podosesia syringae* Edmonton June 24, 2011



# Some favourite photos of 2012 from Altaleppers



*Thymelicus lineola* by Rob Hughes



Police Car Moth, *Gnophaela latipennis*, caterpillar by Charley Bird



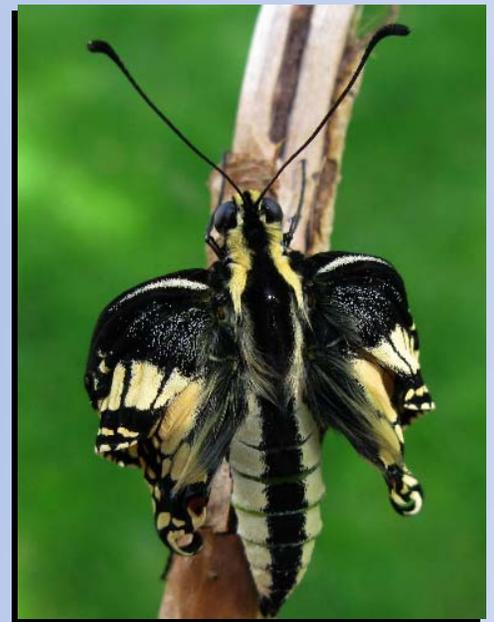
Male pine white by Annie Pang.



mating Western Sheep Moths, *Hemileuca eglanterina* by Doug Macaulay



Metalmark (*Emesis ares*) by Gary Anweiler



Old World Swallowtail (*Papilio machaon dodi*) by Jan Scott



*Oreta rosea* (Drepanidae) by Bryan Brunet



*Hyles euphorbiae*, Spurge Hawkmoth, Andrea Jackson



**FINIS – and  
happy  
holidays!**