

Fall 2006



THE OFFICIAL NEWSLETTER
OF THE ALBERTA

ALG NEWS

ALG's Favorite Moths by Doug Macaulay

Recently a question arose as to what my favorite species of Lepidoptera was. At first I had no idea. I never realized how much thought needs to go into a question like this. So I started off with a list of ten worthy candidates. Once I finalized this list after hours of scrutinizing my favorite insects I decided to base my choice on appearance and how intriguing it was. An hour or two later I decided my favorite two were *Geina tenuidactyla*, a wonderful little Pterophorid, and the elegant *Polychrystia esmeralda*.

After making my own decision, I wondered what moths other ALG members would choose. I sent out an email query, and received the following responses:

John Acorn: "My friend Bill Abler frequently reminds me of his deep love of *Diachrysis balluca* (formerly *Plusia balluca*), a vaguely iridescent green noctuid. But for sheer "what moth impresses you most-ness" I'm personally shameless - our best, in my opinion, is *Hyalophora c. gloveri*!"

Charley Bird: "I go along with John." (*Hyalophora c. gloveri*)

Chris Schmidt: "...maybe not attractive in the conventional Lepidoptera sense, the wingless *Erannis (Erannis tiliaria)* females out right now are certainly plain old weird !"

Gary Anweiler: "I had to really think about this one because - as dear old mom used to say - they are ALL my favorites. BUT - I think it is the first spring pink form of the Dogwood Thyatirid,

the images you have shared of them. I probably don't even know of the existence of what one day I will think is the most beautiful or otherwise favorite one. But, if I just go with moths in my growing 'virtual' collection, I'll vote for the '*Autographa*' moths as a group - and so far *Syngrapha microgamma* as the most favorite of them. But others that have struck me as extraordinarily pretty include *Sicya macularia*, *Mesothea incertata*, *Anania funebris* and

Dysstroma If I'm going to vote based on the juvenile and adult as a 'team', then in my collection it is *Orgyia antiqua* and it's toothbrush caterpillar. I'm intrigued by the nomination of *Polychrystia esmeralda* I searched long and hard for the ID of this familiar delphinium



Hyalophora columbia gloveri voted ALG member's favorite moth (photo Doug Macaulay)

Euthyatira pudens MMMMMMM mmmm MM. And it is not even a noctuid!"

Nora Bryan: "How can one choose? I like all the nominations so far, (the *Erannis tiliaria* is cool in a kind of creepy way) and I remember

muncher and finally Ernest Mengerson revealed it's name to me (It was to be included in my garden bug book - and to do so required a name). This is the only caterpillar I have reared, because I wanted to see the moth."

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LepTree by Amanda Roe, Susan Weller, Cyndy Parr, and Charlie Mitter

Lepidoptera are an easily recognized, charismatic group of organisms, but currently many of their evolutionary relationships are shrouded in mystery. This is all about to change. This year our research community received an Assembling the Tree of Life (AToL) grant from the US National Science Foundation to explore the relationships among Lepidoptera. This AToL project, now called LepTree, is a community-based initiative that is designed to promote scientific exchange of lepidopteran knowledge, and improve our understanding of their taxonomy and evolutionary relationships.

The most important aspect of LepTree is community involvement. An impressive collective knowledge already exists among lepidopterists, and by tapping into this resource, we will be able to lay a foundation for future Lepidoptera research and promote large collaborative projects. An interactive website (<http://leptree.net>) and database of current knowledge will be a "one-stop-shop" for all things Lepidoptera. The website will host discussion boards, protocol lists (everything from pinning techniques to molecular methods), specimen exchanges, project directories, links to other Lepidoptera resources, and up to date accounts of other LepTree initiatives (e.g. molecular results). This website will be the key link between all other LepTree projects, and is essential to promoting international community involvement.

To expand our knowledge of lepidopteran relationships, a molecular "backbone" phylogeny from 26 nuclear gene sequences will be used to build a phylogeny for lepidopteran families and superfamilies. In conjunction with the sequencing project, a collection of identified, preserved Lepidoptera specimens is being assembled (called Alcohol Tubes of Lepidoptera, or ATOLep for short). This material is available to researchers around the world for DNA sequencing. Detailed protocols for collecting molecular quality specimens is outlined on the LepTree website (http://leptree.net/collecting_protocols). By expanding this frozen collection

from donations of identified, preserved material, an extraordinary resource will be available to the research community.

Finally, an illustrated, interactive on-line glossary of morphological structures will be developed that will allow new enthusiasts to learn the common descriptive terms for all the life stages (and their synonyms in the older literature!). We will have on-going discussions about homologies of problematic structures. Contributions to the glossary will be coordinated by a network of morphological/taxon specialists (aka Twig Leaders), and their involvement is key to the success of LepTree. Check out who is in charge of your favorite groups and volunteer to help your Twig leaders.



It is hoped that these projects will empower a virtual Lepidoptera community that will outlive LepTree itself and provide a foundation for the next generation of Lepidopterists.

So are you wondering how you can be involved? Great!!! We are constantly looking for submissions to expand the LepTree website. We need your recommended links to great websites. Protocols, such as a good moth baiting recipe or tricks of the trade for photographing butterflies, would be most welcome. We are also looking for snazzy pictures of both adults and larvae to decorate the website. We would be particularly grateful for any identified, preserved specimens that you would be willing to contribute to the ATOLep collection (for detailed instructions, please contact Charlie Mitter). We encourage you to check

out the preliminary LepTree website at <http://leptree.net>, and please send us your feedback or recommendations on how to improve the website. If you have any comments, or would like more information about becoming involved with LepTree, please contact Charlie Mitter, Cyndy Parr, Amanda Roe or Susan Weller.

The LepTree Core team:

Mike Cummings (phylogenetic computational methods)

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Don Davis (morphology and superfamily initiatives; taxon sampling and specimen acquisition for molecular study) davis.don@si.edu

Akito Kawahara (assistant coordinator for specimen acquisition) kawahara@umd.edu

Conrad Labandeira (conduct review of lepidopteran fossil record) labandec@si.edu

Charlie Mitter (overall coordinator, chief contact for questions/problems) cmitter@umd.edu

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So where are we now? After nearly a year of work, the LepTree project has come a long way. Below is a brief list of some of our accomplishments over the past year.

Molecular Project Updates:

Bombycoids: 70 species representing all families and most subfamilies, for 4-5 genes (6000 bp).

Macrolepidoptera: all but one of the

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Holoarctia sordida (photo Nora Bryan)

Thomas Simonsen: "Since I haven't collected that much in Alberta myself, I won't limit the list to those, but just to what's been collected in the province. Well, I am a micros man, so first I was thinking about the *Rostrolaetilia* (Pyrilidae) Gary collected last year, and then the *Acanthopteroctetes* collected by Charley, both not only new to the province but also scientifically very important. But no, I have to let my heart choose: the hepialid *Sthenopsis purpurascens*! And that even means that I have

chosen a critter I have collected here."

Felix Sperling: "One of my favorites is still *Hyalophora c. gloveri*, just like John and Charley, in part because finding one when I was child was a sort of epiphany for me. But now I think that the "pushup moths" (*Caloptilia fraxinella* or any of its kin) are even cuter than the big furry saturniids. There are just so many truly wondrous moths to choose from, each with their own special charisma!

"There are just so many truly wondrous moths to choose from"

Dave Lawrie: "If I had to choose my favorite it would still be an Alberta bug, *Holoarctia sordida*. There are so many unanswered questions about this thing and so few known specimens.

How does it live where it does (barren scree slopes at high altitude)? Why is it so rare (lack of collection sampling)? Etc. Etc. Etc. My favorites will always be the unknowns. Incidentally, it does not seem to have a common name. So, I propose (entirely in jest) that *H. sordida* should have the common name of "Nora's Squished Tiger moth". Based on her photo of this year (to the best of my knowledge) the only photo of this moth in a "natural setting" and "behaving naturally". (Right, it is dead and squished/squashed. What else would you expect it to be doing?)... "Nora's squashed tiger moth" could also work. NSTM for short."

So after this flurry of emails it looks like *Hyalophora columbia gloveri*- the Glover's Silk Moth- is ALG's favorite moth. 🦋

superfamilies for 4-5 genes (6000 bp).

Lower Ditrysia: 32 species, for all 26 genes.

An additional 200 species in progress

ATOLep Collection Holdings:

105 Families with 8000 specimens in >1600 genera

Morphology Workshops

Upcoming:

Homology Challenges in the Lepidoptera Tree of Life Symposium and Workshop (Entomological Society of America Annual Meeting, Indianapolis, IN Dec. 13th 2006)

Lepidopterists' Society Annual Meeting, Bakersfield, CA July 2007

Past:

Noctuidae Morphology Homology workshop (Lepidopterists' Society Annual Meeting, Gainesville, FL 2006)

Superfamily Network Template workshop (Lepidopterists' Society Annual Meeting, Gainesville, FL 2006) 🦋

2006 Wolley-Dod Award by Greg Pohl

Each year ALG presents the Wolley-Dod Award for the "most significant Lepidoptera discovery of the year" in Alberta. For 2006, this was a tough decision; we had discoveries of new species for Alberta in the Crambidae, Sesiidae, Pyralidae, and heliothine Noctuidae. However, the winner goes to new Albertans Jason Dombroskie and Allison Rose, for discovering a new family of moths for Alberta, the Heliozelidae. They collected a specimen of *Antispila* near or = *aurirubra* at dusk in Edmonton this past spring. Jason remembers seeing the moth in flight,



Antispila near or = *aurirubra*

standing out to his trained eye as a moth among a swarm of midges. He knew right away that it was an *Antispila*, but it

took a bit of sleuthing by he and I to pin down the probable identity. This group is in need of revision, so it can't be identified with certainty without examining the type. However, we know it's *Antispila*, and we're fairly certain it's either *A. aurirubra*, or an undescribed species near *aurirubra*. Thanks to Jason and Allison for adding this to our knowledge of the Alberta lepidoptera. It's a beautiful little moth with metallic green wings and white markings; the picture,

taken under artificial lighting, doesn't do it justice at all. There are currently 57 families of Lepidoptera known in

Alberta, with two more expected, the Tischeriidae and Incurvariidae. 🦋

I get high on

butterflies

by Joe Rosenblatt (from 'Til All the Stars Have Fallen')
submitted by Gloria J. Brons

I get high on butterflies;
the way they loom in the air
and land on air-domes

of petals
and with nervous wings
shake off their colours
of orange,
green and blue....

I get high on butterflies;
their very names:

Tiger swallow tail
Zebra
Pygmy blue
Arctic skipper
Spring azure
Common wood nymph.

Caught in the net of my mind
they whirl around

and around....



Beaverhill Butterfly Count Participants (left to right): Jim Beck, Ed Cameron, Barb Beck, David Lawrie, Claudia Cameron, Jessica Bennett, and Erik Ligtenberg. Not in photo: Katie Cameron and Allicia Kelly (BBO summer staff)

Upcoming Events

- *Ferelia* Festival 2007 to be held on February 17th, 2007 in Edmonton. For more information visit ALG website.
- "All the Flutter" held at Edmonton Valley Zoo on March 25th, 2007. For more information visit ALG website.
- The 2007 Annual Meeting of the Lepidopterists' Society to be held in Bakersfield, California on July 12-15. For more information visit Lepidopterists' Society website.

Beaverhill Natural Area Butterfly Count

by Allicia Kelly

Not surprisingly, Alberta is home to several North American Butterfly Association (NABA) Counts-- a one-day census of the butterflies sighted in a designated count circle. The Butterfly Count at Beaverhill Natural Area returned in 2006 after a four year hiatus (previous counts occurred in 1996 and 1998-2001). This year the butterfly chasing began at the Beaverhill Bird Observatory and finished sweetly at Mom's Ice Cream shop in Tofield. Since the count was held during the height of the Northern Crescent abundance there was no lack of butterflies! The Natural Area was swamped with Northern Crescents and White Admirals, and a short side trip to the wet roadside areas beside Anise Creek revealed an early Grey Copper and a Peck's Skipper. Sixteen species and 629 individual butterflies were documented in the area that was surveyed.

This event was also the first time 4 of the 9 participants had ever swung a butterfly net; it's a great way to introduce people to the excitement of the Lepidoptera world! Join a count next summer or start your own. Go to <http://www.naba.org> for more information. 

Chief Editor: Doug Macaulay

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Jason Edwards & Gary Anweiler

What is the ALG?

The Alberta Lepidopterists' Guild (ALG) is a non-profit society made up of amateur and professional Lepidopterists. Our objective is to support and encourage the study and appreciation of Alberta Lepidoptera (butterflies and moths). We coordinate research projects, facilitate the exchange of information among members, and host events where people can collect and look at Lepidoptera and exchange information and ideas. We have an elected executive, and hold at least one annual general meeting to handle society business. We also host a members-only electronic bulletin board, and numerous scientific and social events throughout the province.

Alberta is a province in western Canada which includes a diverse range of habitats, including mountains, boreal forest, and prairie. Over 3000 species of butterflies and moths are thought to live here; so far about three-quarters of these are known.

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To contact or join us, you can reach the ALG President
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