

# The Entomological Society of Manitoba *Newsletter*



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## About the ESM Newsletter

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

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## Editors' Comments

This issue of the Newsletter will provide you with a summer's worth of interesting articles – well, part of your summer.

We're introduced to the Manitobanaturetalk group. Some of their members who are passionate butterfly collectors and photographers write about what a part of Manitoba has to offer. Also, Bob Wrigley tells about the diversity of backyard insects that a half-hour of collecting produced. And we have another exciting episode of Incredible Insects from John Gavloski.



Mark your calendars for the upcoming Joint Annual Meeting of ESC and ESM in October!

Visit the meeting website at:

[http://home.cc.umanitoba.ca/~fieldspg/ESC\\_ESM\\_meeting\\_webpage/index.html](http://home.cc.umanitoba.ca/~fieldspg/ESC_ESM_meeting_webpage/index.html)

Happy reading!

Marjorie Smith & Jordan Bannerman

## President's Message

### Aggregations can lead to success: For both insects and entomologists.

Insects may gather in large aggregations for many reasons; for defense, to communally enjoy a good food source, or to increase their chances of finding a mate. It won't be long before the midges and dance flies are entertaining us with their mating swarms. One of my favorite insect aggregations to watch though is the whirligig beetles, which not only hang out in big groups, but as a group do a cool gyrating dance when predators or inquisitive entomologists get too close. The position of individual beetles within a group is not random. Relatively hungry beetles go to the outside of a group, where there is less competition for finding food, but higher risk of encountering predators.



Kind of like going to the rough part of town for a good buffet. I can relate. Research in Minnesota found that whirligig beetles would disperse out of their aggregations at night, and when aggregations reformed in the morning it was not the same beetles making up the individual aggregations the next day. Individual beetles could move a long distance and end up in a very different aggregation the next day (Behavioral Ecology and Sociobiology. 1980. 179-186). This behaviour of dispersing at night and forming new aggregations the next day sound very much like an entomology society meeting doesn't it?

Speaking of gatherings of entomologists, Winnipeg is playing host to a large gathering of entomologists this October. The Entomological Societies of Canada and Manitoba will be jointly having their meeting at the Fairmont Winnipeg from October 22-25, 2017. With a great diversity of sessions to choose from, this is a great opportunity to learn, inform, and meet other entomologists. For those planning on submitting papers or posters, note that the submission deadline for papers and posters is July 31<sup>st</sup> - so mark this into your day planners and don't miss out on this great opportunity. And if you like doing things as cheaply as possible, note that the early registration deadline is September 11<sup>th</sup>. Need more information – check out the meetings webpage: [http://home.cc.umanitoba.ca/~fieldspg/ESC\\_ESM\\_meeting\\_webpage/index.html](http://home.cc.umanitoba.ca/~fieldspg/ESC_ESM_meeting_webpage/index.html).

Our entomology society thrives because of the hard work of volunteers. We would like to welcome Gina Karam as the new chair of the Social Committee. Gina is a Masters student in entomology at the University of Manitoba. Gina has had previous experience in events coordination through her undergraduate degree and more recently with the Graduate Students Association. Our entomological society is fortunate to have her sharing her talents with us.

John Gavloski

## **Fundraising Chair Needed**

The Entomological Society of Manitoba is still in need of a Fundraising Chair. This fundraising helps enhance the society's activities and enables us to provide high quality annual meetings.

Joel Gosselin, the past fundraising chair, is willing to work with the new Fundraising Chair to ensure a smooth transition of duties. If you are interested in this opportunity, please contact me (John Gavloski) at:

[John.Gavloski@gov.mb.ca](mailto:John.Gavloski@gov.mb.ca)

## **BioBlitz 2017**

On Friday June 2 and Saturday June 3<sup>rd</sup> there will be a BioBlitz at Pembina Valley Provincial Park southwest of Morden. I'll be there with nets, cages, light traps, etc. You can never have enough entomologists at an event like this so all are welcome to attend. Attached is a link to Pembina Valley Provincial Park for those who are interested: <http://bit.ly/2q6NiDS>

I've had good hikes there before, and almost spent an evening there once due to the poor sense of direction I am blessed with.

Have a good summer and enjoy the insects you collect or observe this summer.

John Gavloski

## **MEETING ANNOUNCEMENTS\***

### **IOBC-WPRS working group: Integrated Control in Protected Crops, Temperate Climate**

Niagara Falls, Canada, 4-8 June 2017

<http://iobccanada2017.ca/>

### **Society for Invertebrate Pathology, 50<sup>th</sup> Anniversary Meeting**

San Diego, California, 13-17 August 2017

Contact: Surendra Dara [skdara@ucdavis.edu](mailto:skdara@ucdavis.edu)

### **Entomological Society of Canada Joint Annual Meeting 2017: Small is Beautiful**

Fairmont Hotel, Winnipeg, 22-25 October 2017

The meeting will be held in conjunction with the Entomological Society of Manitoba

<http://www.esc-sec.ca/annmeet.php>

### **Entomological Society of America Annual Meeting 2017: Ignite, Inspire, Innovate**

Denver, Colorado, 5-8 November 2017

<http://www.entsoc.org/events/annual-meeting>

\*If you have a meeting you would like listed in the next ESM Newsletter, contact Marjorie Smith or Jordan Bannerman with the details by **15 August 2017**.



## Joint Meeting of the Entomological Societies of Canada and Manitoba

**Fairmont Winnipeg Hotel  
Winnipeg, Manitoba  
22-25 October 2017**



## Small is Beautiful

On behalf of the Entomological Societies of Canada and Manitoba, we are pleased to invite you to the **ESC-ESM 2017 Joint Annual Meeting: Small is Beautiful**. Nestled in between two very large entomology meetings; ICE in Orlando 2016 and ESA-ESC in Vancouver 2018, the ESC-ESM JAM in Winnipeg will undoubtedly be a much smaller event but an excellent opportunity to showcase entomological research in Canada.

**Keynote Speaker:** [Angela Douglas](#), Cornell – “Interface between insects and bacteria”

### Plenary Symposium Speakers:

- [Keith Summerville](#), Drake University – Forestry Symposium
- [Dale Clayton](#), University of Utah – Ectoparasite Symposium
- [Anthony Ives](#), University of Wisconsin-Madison – Population Dynamics Symposium
- [Nigel Raine](#), University of Guelph – Pollination in a climate of change Symposium

### Additional Symposia:

- **Biological Survey of Canada**
- **Graduate Student Showcase:** contact [Miles Zhang](#) or [Anne-Sophie Caron](#)

**Organizing a Member symposium or a workshop? Contact:** [Paul Fields](#) (Scientific Chair),

**\*\*\* Submitted paper deadline is 31 July 2017 \*\*\***

**Registration: (early registration deadline (11 September 2017) – online registration closes (15 October 2017))**

- Regular members - early registration (\$350), late or onsite registration (\$450)
- Early professional members – early registration(\$265), late or onsite registration (\$365)
- Students - early registration (\$175), late or onsite registration (\$275)
- Non-members - early registration(\$450), late or onsite registration (\$585)
- Single day onsite registration(\$200)

**Member Discount:** Renew or become an [ESC member](#) - \$26 for students and \$105 for regular members

**Accommodations:** [Fairmont Winnipeg Hotel](#), discount meeting rate - \$169 + taxes (book early).  
Staying at the conference hotel is convenient for you and lowers the meeting costs.

### Associated Meetings:

20 October 2017 - Agriculture & Agri-Food Canada Working Group on Biocontrol  
26-27 October 2017 - Western Forum on Pest Management

### Visit ESC-ESM 2017:

[http://home.cc.umanitoba.ca/~fieldspg/ESC\\_ESM\\_meeting\\_webpage/index.html](http://home.cc.umanitoba.ca/~fieldspg/ESC_ESM_meeting_webpage/index.html)

**For general meeting inquires contact:** [Rhéal Lafrenière](#) (General Chair),

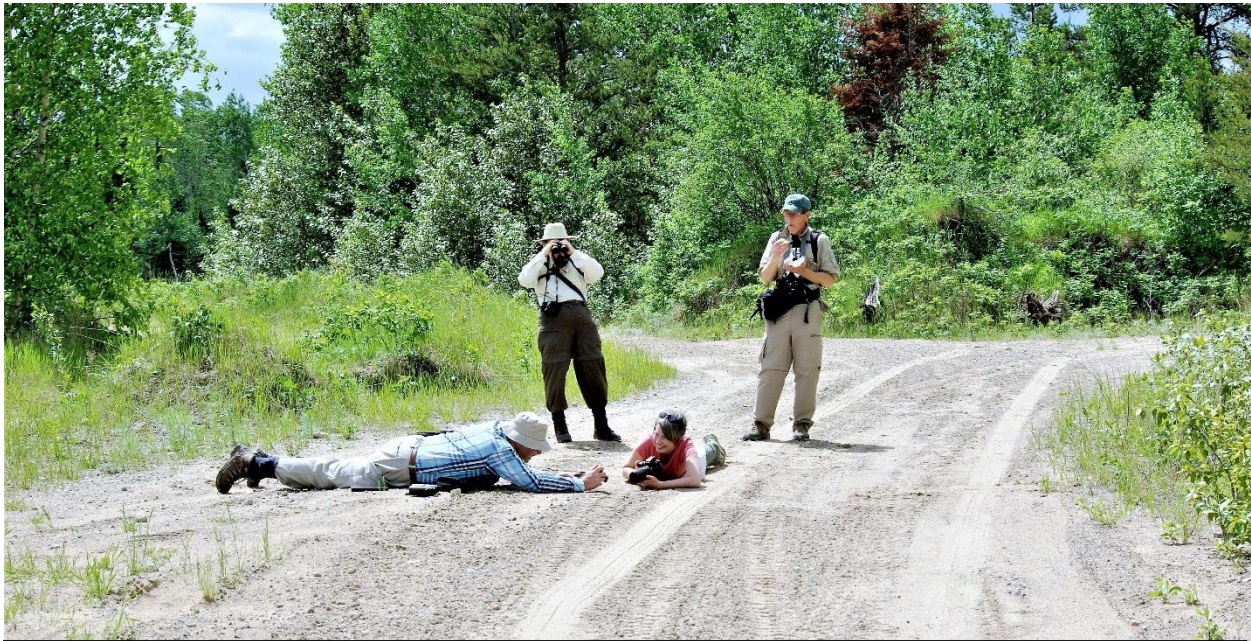


## A MANITOBA BUTTERFLY PROJECT INITIATED BY MEMBERS OF MANITOBANATURETALK

By Larry de March, Deanna Dodgson, Richard Staniforth and Peter Taylor.

Two full field seasons have now passed in a five-year project to record butterfly species and numbers as reported to the Yahoo discussion group, Manitobanaturetalk. We present a preliminary report of some of our findings, including migrant butterfly numbers, flight periods and range extensions for various species, and discussion of some selected butterfly groups: the gossamer wings, fritillaries, commas, the arctic and alpine butterflies, the duskywings and some other skippers.

Manitobanaturetalk is one of over ten million discussion boards hosted by Yahoo! Inc. It was set up in 2006 for sharing information on all Manitoba natural history subjects after the success of Manitobabirds, which had been set up 6 years earlier (current membership is over 700). Although Manitobanaturetalk garnered less interest than did Manitobabirds (58 members and, as is typical of online forums, about 10-15% very active) those who do participate actively are enthusiastic, knowledgeable naturalists eager to share sightings both in their posts and in the field.



Several members of Manitobanaturetalk on a field trip near Pinawa, MB, 5 June 2016. The centre of attention is an Indian Skipper (*Hesperia sassacus*). (photo by Richard Staniforth)

Manitobanaturetalk has proved to be an excellent forum for collecting data and photographs of the diverse flora and fauna of Manitoba. During the existence of Manitobanaturetalk, there have been numerous postings of arthropods, rather fewer of mammals, reptiles and amphibians, and even fewer of fungi and plants. Butterfly and dragonfly records and their photographs have been particularly numerous, likely because of their relatively large size and visibility, and they have generated considerable discussion.

In 2014, we kept only a casual list of “first-date-of-the-year” records for any butterfly species that were reported. By the end of the year we had records for 83 species. The enthusiasm of Manitoban naturalists encouraged us to record all butterfly sightings in the two subsequent years. The data included species, numbers of individuals, observation dates, locations, and observer names. Photographic documentation was obtained for all species, and for multiple observations in most cases. Eighty-four species of butterflies were recorded in 2015 and 93 species in 2016 for a combined total of 107 species, comprised of 2768 individual insects. This total does not include numbers for the Cabbage White (*Pieris rapae*), which was often described as “in the thousands”. To some extent the numbers of species depended on the travel history and habitat coverage of observers. Consequently, we decided that in future we would restrict our area of interest to southeast Manitoba and the results reported below reflect that decision. We also suggest that numerical comparisons are more meaningful within groups of related species than between different groups, because of variation in conspicuousness.

The study area is limited by the Ontario and U.S. boundaries to the east and south, respectively, and in the north by the latitude of Bloodvein. The western boundary is an irregular line that runs from Bloodvein to Watchorn in the Interlake, then along the eastern and southern shores of Lake Manitoba to Delta, and finally south to the international border.

As well as furnishing a lot of data and photographs, our field trips have left us with many indelible memories, especially from the period of peak butterfly diversity around the beginning of July. A combination of sunshine after recent rain with abundant roadside flowers can yield some fine spectacles of assorted puddling and nectaring butterflies along a little-used right of way. Provincial roads west of Chatfield (PR 419) and south of East Braintree (PR 308), and gravel roads in and near Agassiz Provincial Forest, were especially rewarding.



Part of a butterfly gathering at wet gravel in Agassiz Provincial Forest; left to right, White Admiral (*Limenitis arthemis*), Coral Hairstreak (*Satyrium titus*), Meadow Fritillary (*Boloria bellona*), and Atlantis Fritillary (*Speyeria atlantis*). (photo by Peter Taylor)

### **Migrant butterflies**

The Monarch (*Danaus plexippus*), Red Admiral (*Vanessa atalanta*), Painted Lady (*V. cardui*), Variegated Fritillary (*Euptoieta claudia*), Question Mark (*Polygonia interrogationis*), and Common Buckeye (*Junonia coenia*) are all immigration-dependent species. Others, like Orange Sulphur (*Colias eurytheme*), American Lady (*V. virginicensis*) and Western White (*Pontia*



*occidentalis*), may have small winter-surviving populations in Manitoba, but these may be augmented by foreigners from the south in favourable years.

Monarchs were not abundant between 2014 and 2016. Very small numbers were reported during 2014, but there were 118 observations in 2015, followed by a drop to only 36 individuals in 2016. The Monarchs arrived between early and mid-June, often in a battered condition, whereas those in September and October appeared fresh, suggesting local origins. Flight direction is often conspicuously southward for later dates. Other migrant butterfly species fared differently from each other. Red Admirals were common in both 2015 and 2016, and the Orange Sulphur was widespread and locally numerous in 2016 after scarcity in 2015. None of the remaining migrant species were common in any of the three years, and only a single Question Mark was reported.

Two other migrant species should be mentioned: the Variegated Fritillary and the Common Buckeye. On 10 September 2016, a concentration of 17 Variegated Fritillaries was found near Brightstone (northeast of Beausejour). They were feeding on blossoms of white sweet-clover (*Melilotus officinalis*) on an overgrown right-of-way. On that day, the wind was very strong from the south. The butterflies were exposed on the tall plants, but persisted in nectaring in a frantic manner even though they were being tossed around by the wind. Our only records of Common Buckeyes were made at Hecla Island by Bob Shettler. The first of his records involved a single insect on 11 July 2016; on 30 August there were 4, and Bob's last report was of a single individual on 15 September. It is conceivable that these localized populations of the Variegated Fritillary and the Common Buckeye were descendants of isolated, perhaps windblown, migrants as this may explain the occurrence of several individuals of an uncommon species in one place. Historically, the Buckeye is much the scarcer of these two butterflies in Manitoba, with records from only six localities prior to 1989, augmented by more recent specimens and sightings including a significant influx in 2007 (Klassen et al. 1989, Taylor et al. 2008). Variegated Fritillary records are distributed across much of southern Manitoba (Klassen et al. 1989), but the species is unpredictable and sightings always seem special.

### **Flight Periods**

We were excited by the number of species for which we had accumulated data. However, none of us expected that the flight periods (first and last dates of adult activity) of many of these butterflies would be beyond those on record (Klassen et al. 1989). Forty species had flight dates that were either earlier than previously established, or were later than the given last dates. Six species had their flight seasons extended at both ends. Whereas 2015 had an exceptionally late, warm autumn and 2016 had an early spring, first and last flight dates were broken in both years. On the other hand, no records were broken during 2014, which was regarded as having neither a relatively early spring nor a late autumn.

Species that benefited from mild weather in early spring and late autumn were those that hibernate as adults (e.g. commas, Mourning Cloak, tortoiseshells), migrant species (e.g. Red Admiral, Orange Sulphur) and the earliest non-hibernating species (e.g. elfins). The two migrant species, Red Admiral and Orange Sulphur, appeared much earlier than usual in 2016, by 16 days and 22 days, respectively.

Some of these flight-period extensions may reflect in part our own targeted activity during shoulder seasons when collecting activity may have been low in the past. Nevertheless, it seems likely that climate change is a factor in at least some of these new records. Range and flight-period extensions (the latter primarily in autumn) have been documented for a number of

Manitoba butterflies by Westwood and Blair (2010). Further information would be valuable to establish as accurate a baseline as possible to enable the detection of ongoing and future changes in butterfly phenology.

### Range Extensions

In 2015 a small group of Leonard's Skippers (*Hesperia leonardus*) was discovered mud-puddling along an unused trail north of Wanipigow River, roughly 50 km north of Victoria Beach, the previously published northernmost locale. This trail was visited twice the following year, when at least ten individuals were observed and/or photographed (DD). Along PR 304 (west of Wanipigow Lake), two more Leonard's Skippers were found nectaring on thistles in the grassy roadside verge (PT).



Leonard's Skipper (*Hesperia leonardus*). (photo by Deanna Dodgson)

Our records of Indian Skipper (*H. sassacus*), another little-known species in Manitoba, improve our knowledge of its distribution. Individuals were located in Whiteshell and Nopiming Provincial Parks (Davidson Lake and Tulabi Falls) and two locations near Pinawa, variously frequenting rocky outcrops and grassy roadsides. A notable northerly record by PT was from the Quesnel Lake road off PR 304 in 2016.

The delicately patterned Harvester (*Feniseca tarquinius*), famous for its carnivorous larvae, is usually encountered in ones and twos, though it is occasionally more plentiful where woolly aphids are abundant. The two-year total was 37 individuals. Our observations show this species occurring farther north than previously recorded, through Nopiming Provincial Park to the Wanipigow River area, with one sighting by RS at Aikens Lake, northeast of Bissett, on 28 May 2012.



A Baltimore Checkerspot (*Euphydryas phaeton*) shares space on a yarrow (*Achillea millefolium*) flower with a mating pair of Red-blue Checkered Beetles (*Trichodes nuttalli*). (photo by Peter Taylor)

Since previous collecting activity in the Nopiming-Bissett-Wanipigow region has been limited, based on the distribution maps in Klassen et al. (1989), we are unable to distinguish between extensions of knowledge and true range expansions for the three species discussed above.

The striking Baltimore Checkerspot (*Euphydryas phaeton*) was not observed in 2014, but it was found in the two following seasons. In July 2015 a single, somewhat worn individual was observed mud-puddling along a stretch of gravel road in Agassiz Provincial Forest; despite a short search around the area, no other Baltimores were found. Three days later, a trio of Baltimores was detected along PR 308 south of East Braintree.



The first Baltimore found in 2016 (2 July) was briefly seen nectaring on yarrow (*Achillea millefolium*) in Whiteshell Provincial Forest near Darwin. One week later, as many as five individuals, including a mating pair, were counted on a visit to Spruce Siding Road by a small group of insect enthusiasts. This same population yielded one individual on a later visit. Most sightings were closely tied to the well-known and showy larval food-plant, turtlehead (*Chelone glabra*).

Several of the Baltimore sightings mentioned above occurred at previously known sites (Taylor and Westwood 2010). This fact is encouraging and hopefully indicative of persisting, albeit small, breeding populations. We hope to check in on some of these populations in the coming years. The Baltimore Checkerspot is expanding its range northward in southeastern Manitoba, in concert with climate warming (Westwood and Blair 2010), and it will be interesting to see what further changes might be documented in the future.

### **Gossamer Wings**

Butterflies in the gossamer-wing family (Lycaenidae) are all small, with wingspans in the 20-40 mm range. They include the Harvester, discussed above. Of the five species of copper (*Lycaena* spp.) regularly found in Manitoba, only Dorcas Copper (*L. dorcas*) was fairly common, with a total of 78 almost evenly divided between 2015 and 2016, with peak counts in the Milner Ridge area in late July in both years. The others mustered only single-digit totals: six Bronze (*L. hyllus*) and nine Purplish Coppers (*L. helloides*), and only single individuals of Gray Copper (*L. dione*) and Bog Copper (*L. epixanthe*). The last of these species caused much hilarity when PT tried to announce his discovery while choking on a ham sandwich during lunch break on a field trip. It was close to a traditional 1980s locality near Milner Ridge (Klassen et al. 1989). Further fieldwork is needed to see if we can improve on these low totals.

The *Satyrrium* hairstreaks are a challenge to find, though a few usually make their way onto a July day's list. It is always worth checking roadside stands of white sweet-clover for nectaring individuals. We found Striped Hairstreak (*S. liparops*) most frequently, with a two-year total of 34, just exceeding the grand total for the four other species, Acadian (*S. acadica*), Coral (*S. titus*), Edward's (*S. edwardsii*), and Banded Hairstreak (*S. calanus*). Unsurprisingly, we have no records for the provincially rare Gray Hairstreak (*Strymon melinus*).

The elfins (*Callophrys* spp.) are a spring delight, emerging in May. The four species expected in the southeast were all detected, with more sightings in 2016 than 2015 in each case. Hoary Elfin (*C. polios*) was the most numerous by far (108, including 94 seen in 2016), followed by 20 Brown (*C. augustinus*) and 13 Eastern Pine Elfins (*C. niphon*), the latter all found by DD. She also found two Henry's Elfins (*C. henrici*), a rare and localized species in Manitoba, in May 2016, while LdM found one on 13 June 2014.

Blues are the showiest of the gossamer-wings, which no doubt boosted their totals, but there is no question that Northern [Spring] Azure (*Celastrina lucia*) and Silvery Blue (*Glaucopsyche lygdamus*) are particularly widespread and numerous species, with two-year totals of 410 and 722, respectively. Peak daily counts of both species were just short of 100 individuals. The azure totals exclude 38 July records, the majority of which appear to represent a small summer flight of *C. lucia* rather than the Summer Azure (*C. neglecta*), based on comparison of photographs with the illustrations in a recent paper by Schmidt and Layberry (2016). Like the *Satyrrium* hairstreaks, these summer fliers are especially attracted to white sweet-clover as a nectar source. Represented by much lower numbers were 41 Northern Blue (*Plebejus idas*), 21 Western Tailed Blue (*Cupido*

*amyntula*) and 8 Eastern Tailed Blue (*Cupido comyntas*). The absence of sightings for Greenish Blue (*P. saepiolus*) was disappointing. This species was easy to find in southern Manitoba in the 1980s, but a substantial range contraction has been noted in Ontario and has perhaps happened here too. Two other species previously known in southeastern Manitoba, Melissa Blue (*P. melissa*) and Arctic Blue (*Agriades glandon*) are also absent from our list. We note, however, that there was much discussion of some strongly marked Northern Blues that strongly resembled Melissa Blues, near Chatfield on 29 June 2016.

### **Greater and Lesser Fritillaries**

Fritillaries are always a pleasure to watch but a challenge to identify, beyond separating greater (*Speyeria* spp.) from lesser (*Boloria* spp.). Steely grey eyes help immeasurably with identifying photographs of Atlantis Fritillary (*S. atlantis*), usually the first to appear and most abundant of the three common greater fritillaries. All three were well represented, with two-year totals of 363 Atlantis, followed by 109 Great Spangled (*S. cybele*), and 107 of the later-flying Aphrodite Fritillary (*S. aphrodite*). We keep hoping for a rare easterly sighting of a Northwestern (*S. hesperis*) or Callippe (*S. callippe*) or a miraculous appearance by a Regal Fritillary (*S. idalia*).

As expected, the most frequently identified lesser fritillaries were Meadow (*B. bellona*), Silver-bordered (*B. selene*), and Arctic (*B. chariclea*, formerly Purple Lesser Fritillary, *B. titania*), with totals of 89 (a large majority in 2016), 64, and an unexpectedly high 172, respectively. Arctic Fritillaries were found at a number of locations, mostly from Milner Ridge and Pinawa to Nopiming Provincial Park, the Bissett area, and Rice River Road. Two relative rarities in southeastern Manitoba, Freija (*B. freija*) and Frigga Fritillary (*B. frigga*), were found on just a handful of occasions. These low numbers and the absence of Bog Fritillary (*B. eunomia*) sightings are in part a reflection of our fondness for dry feet, but we hope to put a little more effort into finding boreal-wetland species in the coming years. Some could be candidates for northward contraction of their range limits with ongoing climate change.

### **Commas**

Identification of commas, or anglewings, provided many opportunities for lively discussion within our group. Worn specimens were particularly difficult to identify at times, especially those seen only dorsally.

Gray Comma (*Polygonia progne*) proved to be the most common anglewing overall, usually seen either singly or in small groups, and often in company with other comma species. Unusually, in September 2014 and 2015, Gray Commas were observed with great frequency along a portion of Trans License Road, a dilapidated logging road north of Maskwa River.

Green Comma (*P. faunus*) had a particularly strong showing in 2016, with well over 100 records. These numbers are comparable to that of Gray Comma for the same year. Although the difference in seasonal totals between the two species was much greater in the previous two seasons, it would seem that Green Comma is more common in woodland habitat than was previously known. This confirms the suggestion by Klassen et al. (1989) that “it is probably more abundant in Manitoba than present records indicate”.

With some surprise, we occasionally found Eastern Commas (*P. comma*) in deeper woodland habitat than most of us had observed them in the past, *e.g.*, along the previously mentioned Trans-License Road. This species was observed in great number in early September 2016 in Pembina Valley Provincial Park, with 50 fresh specimens counted on a single visit along 6 km of

trails. The uncommon Satyr Comma (*P. satyrus*) was only occasionally found in the study area, always closely associated with forests. As noted above, only one Question Mark was observed, in Winnipeg. Regrettably, Hoary Comma (*P. gracilis*) has remained elusive throughout our surveys to date. Many fresh, Hoary-like anglewings gave us pause but, after consultation and much head scratching, we had to conclude that these were well-marked Grays.

### **Arctics and Alpines**

The only members of the Satyrini seen during the study period were Red-disked Alpine (*Erebia discoidalis*), and three species of *Oeneis*, namely Jutta Arctic (*O. jutta*), Alberta Arctic (*O. alberta*) and Macoun's Arctic (*O. macounii*).

*The Red-disked Alpine is usually bog-associated and five of six sightings during the study period were at Jessica Lake along a stretch of road that bisects a floating spruce/tamarack bog. They are likely more common than the numbers indicate as they are impossible to detect unless they fly or land on the road; they aren't often seen flying and they rarely leave the cover of the bog vegetation. The prairie-associated Alberta Arctic is severely habitat limited in southeast Manitoba. The sightings in 2015 all involved a population found by RS in Birds Hill Park. The 27 recorded in 2015 may be an over-estimate because three recorders visited the same site over a period of nine days. Macoun's Arctic occurs in even-numbered years in eastern Manitoba. It is usually found in small numbers, typically in sandy areas dominated by jack pine (Pinus banksiana) but also on the pre-Cambrian shield. This species was particularly common at Cow Moose Lake in 2016 where nine were seen of the 18 recorded that year. The one seen at the Interlake Forestry Centre south of Hodgson in 2015 is likely at the eastern edge of the western population, which occurs in odd-numbered years. The single Jutta Arctic was photographed near Zhoda on 18 July 2015 (J. Yatsko). Collectively the authors have only one previous sighting of this rare species in the study area (PT, Milner Ridge, 1 July 1989).*

### **Duskywings and some other Skippers**

Dreamy Duskywings (*Erynnis icelus*) were seen regularly over the three year period, along forested trails throughout the southeast. These appeared especially common in 2016 with just under one hundred individuals noted, nearly double the number observed over the previous two years combined. The similar Persius Duskywing (*E. persius*) was recorded only once, by RS at Mars Sand Hills on 23 May 2015.

Juvenal's Duskywing (*E. juvenalis*) was recorded with some frequency in 2016, accounting for 45 of the 55 total individuals tallied. This species is likely under-represented in our data, and more time spent in and near oak forests and upland mixed-oak habitat should help to secure additional records of both Juvenal's and Sleepy Duskywing (*E. brizo*) in the future. Our records for the latter species are sparse, with only three spied along Alice Chambers Trail, near Pinawa in late May 2016 (PT).

Several locations were found for Columbine Duskywing (*E. lucilius*). Most were seen singly but they were occasionally found in loose pairs. By the end of the 2016 season, we had identified fifteen individuals from about nine locations, ranging from Whiteshell and Nopiming Provincial Parks, west to the Milner Ridge area and north to PR 304 and the Rice River Road area.

Seventeen individuals of the rare Mottled Duskywing (*E. martialis*) were counted in Sandilands Provincial Forest. These were usually seen in open, wet areas near their food-plant, Narrow-



leaved New Jersey Tea (*Ceanothus herbaceus*), nervously mud-puddling with other skippers and butterflies. On 26 July 2014, a worn individual was photographed by RS north of Badger.



Mottled Duskywing (*Erynnis martialis*). (photo by Deanna Dodgson)

Two other skippers are worthy of note, in addition to the two species discussed above in the section on range extensions. The first of these is the diminutive Grizzled Skipper (*Pyrgus centaureae*). An unusual, even-year appearance of this skipper in May 2014 in Whiteshell Provincial Park was a welcome surprise for LdM. We can boast of only one other sighting, near Cat Lake in Nopiming Provincial Park on 26 May 2015 (DD). It was observed to alight briefly on a rocky outcrop before disappearing. This species has been found more frequently north of the study area, between Gypsumville and Grand Rapids (PT).

Common Branded Skipper (*Hesperia comma*), was recorded in Whiteshell Provincial Park (LdM, 4 July 2014) and near Bissett (PT, 27 July 2016). The latter record constitutes our most northerly sighting of this uncommon (for us) skipper. One rather worn specimen was found near Milner Ridge in late August 2015, frequenting a grassy meadow within jack pine forest. This species is almost assuredly more common than our few records indicate.

We welcome any readers' comments, especially on observations of uncommon and rare species. Please address them to Richard at richard\_staniforth@yahoo.ca.

### Acknowledgements

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## **BACKYARD INSECTS**

By Robert E. Wrigley

It was late in the afternoon on July 14, 2016, when I decided to relax by reading a book in my backyard gazebo in Winnipeg. As I looked up to rest my eyes for a moment, I saw a tiny insect, backlit by the sun, fly for a few metres across the yard, and then vanish from sight. While I was wondering what it was, and before I could look down to my book again, I saw another larger insect, this time flying slowly. Then I soon realized that there were many tiny insects flying every which way. I suspected that some of these insects may have been involved in mating swarms. Normally I would not have been able to see them, but being backlit by the sun, they stood out like silvery points of light, darting, swirling and floating by on the gentle breeze. I decided to investigate, and so I ran into the house for my butterfly net.



Standing motionless at the edge of the gazebo, like a baseball batter at the plate, I was ready to swing at the next target that flew by. After a couple of misses (The insects were capable of remarkable evasive action!), I finally captured one, but then watched it as it deftly maneuvered

through the mesh of the net and was gone. Obviously the net fabric was too coarse to hold my quarry (Most were only one or a few millimetres long.), but having nothing finer at hand, I kept swinging and tried to secure each specimen quickly, without squashing it, before it could escape. I continued this exercise for half-an-hour, capturing about one insect for every ten tries, until the sun dipped below the roof line of the house, and then the flying flotilla became invisible to my view. At this point I had no idea what types of insects lay at the bottom of my vial of alcohol, and it was not until the following day that I glued each one onto a paper 'point' attached to an insect pin. As soon as the glue was dry, I peered at the specimens through my stereo-microscope and began placing them into families. The following is a list of the insects I captured that afternoon:

- 3 species of Water Scavenger Beetles (Hydrophilidae)
- 2 species of Weevils (Curculionidae)
- 3 species of Rove Beetles (Staphylinidae)
- 3 species of Sap-feeding Beetles (*Nitidula* spp; Nitidulidae)
- 2 species of Plant Bugs (Miridae)
- 2 species of Ground Beetles (*Bembidion frontale*, *Stenolophus* sp; Carabidae)
- 1 species of Stink Bug (Pentatomidae)
- 1 species of Striped Leaf Beetle (*Phyllotreta striolata*; Chrysomelidae)
- 1 species of Pill Beetle (*Byrrhus americanus*; Byrrhidae)
- 1 species of Mud-loving Beetle (*Heterocerus* sp; Heteroceridae)
- 1 species of exotic Soldier Beetle (*Cantharis rufa*; Cantharidae)

The Soldier Beetle (native to Europe) had recently invaded Manitoba from Minnesota, and this and another invading species -- the Variegated Lady Beetle (*Hippodamia variegata*) -- were the subject of a paper Ms. Sarah Semmler and I published on these first records for the province. I was astonished at the diversity of species in my backyard -- all taken within a short period of one afternoon. No doubt that collecting periodically from spring to autumn would have easily resulted in several hundred species. I was completely unaware of all this biodiversity of tiny species in my backyard. The rest of the summer I remained alert for other insects in the garden, and collected the following:

Common Bagworm Moth (*Psyche casta*) larval case made of plant fragments and attached to the house, the exotic dreaded Red Lily Beetle (*Lilioceris lili*) on lilies, a ground beetle (*Stenolophus comma*) on the sidewalk, predaceous diving beetles (Dytiscidae) that slid off my gazebo roof, an impressive 70-mm (2.8-in)-long, black female wasp (*Pelecinus polyturator*), a 5-mm (0.2-in) Currant-tip Borer Long-horned Beetle (*Psenocerus supernotatus*) sitting on a window, a Banded Long-horned Beetle (*Typocerus velutinus*) on a flower, an ant-mimic Clerid Beetle (*Enoclerus nigripes*) running along a freshly cut White Spruce log, several species of jewel beetles (e.g., *Chrysobothris femorata*; Buprestidae) that emerged from oak firewood stored in my garage, and a horntail wasp (*Xeris melancholicus*) and colourful Willow-Oak Sawfly (*Arge quidia*) sitting on my gazebo deck. I now have a nice collection of insects without even leaving my property. I wondered how many of these insects would have been killed had I not requested that Malathion not be sprayed on my property for mosquito control.



# **Incredible Creatures**

## **Insects: The Original Farmers**

**By John Gavloski**

*Ed's note: John writes a monthly article called "Incredible Creatures" for Pembina Valley's local weekly newspaper, the Valley Leader. They are written at a very basic level to introduce people to some of the common yet often not well known creatures in Manitoba, and hopefully enhance appreciation for wildlife. The following article was published in March.*

Humans have become very efficient at cultivating crops and raising livestock, which has allowed our societies to flourish. But long before humans started farming, certain insects were already doing it. In this edition of Incredible Creatures, we will look at some insects that thrive by raising their own crops or livestock.

### **How Sweet are These Livestock**

Humans have domesticated some species of animals to use for either work, food, protection, and more recently companionship. However, insects had domesticated other animals long before humans had. Some species of ants have domesticated certain species of aphids. Aphids are small, slow insects that have a beak that they can poke into a plant and feed on the sap. To get all the nutrients they need from the plant sap, they have to feed a lot, and so they excrete a sweet sugary substance called honeydew frequently throughout the day. Ants like to feed on this honeydew, and some species of ants go the extra mile and will attempt to fight off predators who are interested in feeding on the aphids. Sometimes these predators may even be bigger than the ants, but as I can attest, don't try to mess with the food of someone who is hungry. Some species of ants take this mutualistic relationship a step further. They will gather aphid eggs in late summer and bring them into their nests, and in the spring return the newly hatched aphids to the plants. And recent research has found that chemicals on ants' feet tranquilise and subdue colonies of aphids, keeping them close by as a ready source of food. In the experiment aphids walked slower over a surface that had recently been walked on by ants. The ants have even been known to occasionally eat some of the aphids themselves, so subduing them is obviously a great way to keep renewable honeydew and prey easily available.

### **Beware of cattle-rustlers**

Being slow, and often in large colonies, aphids are an easy food source for many insect-eating insects, if you can get by the guards. Other insects like lady beetles and lacewings really like to feed on aphids, and sometimes this is really easy, as not all aphid colonies will be protected by ants. But when they are, other techniques to deal with or get by the guards may be needed. Some species of lady beetle can eat up to 100 or more aphids per day per individual. This is one reason why aphid populations don't continually get bigger from week to week, as many people mistakenly believe. Sometimes that can happen, but if there are a lot of things around that like to eat the aphids, often populations stabilize or even decline. But protection or ingenuity is needed when dealing with aphid colonies protected by ants.

When a lady beetle is being attacked by an ant protecting its livestock from cattle-rustlers, the lady beetles tuck their legs under their body so only the knees are exposed. From their knees they squeeze a nasty-tasting yellow liquid that people often mistakenly call ladybug pee. The liquid is actually the insect equivalent to blood (called hemolymph). This hemolymph burns the ant's eyes and mouthparts if they make contact with it. The ants that get a dose of this try to clean it off before any serious damage is done. This tactic prevents the lady beetles from getting harmed as they attempt to pillage the ant's livestock.

### **A Lion in Sheep's Clothing**

In the sixth century B.C., Aesop wrote a fable about a clever wolf and vigilant shepherd. The wolf was not having much luck catching sheep, so it put on a sheepskin and snuck past the shepherd into the flock. Of course wolves can't really dress themselves up in disguises. But some insects do use disguises to get at their favorite foods. There are a group of insects known as lacewings, which love to feed on aphids. The juvenile stages of lacewings are often called aphid lions because of their big appetite for aphids. But they too must deal with the ant armies trying to protect the aphids. So what some species of lacewings do is dress themselves up in the dried carcasses of aphids they have killed, or decorate themselves with other debris. This disguises them from the ants as they seek out aphids to feed on. In one experiment an entomologist removed the disguises of the lacewing larvae to watch what would happen. These undisguised lacewings were immediately detected by the shepherding ants, and tossed out of the colony and sometimes off the plant. Disguised lacewing larvae easily snuck past the ants and enjoyed an aphid feast.



Lacewing larva eating Lygus bug. Aphids are one of their favorite foods.

### **Farming Fungus**

Ants are actually a quite ingenious group of insects, and not only will some species raise livestock, but other species are quite good gardeners. There is a group of 47 species of ants known as leafcutter ants that live from the southernmost part of the United States down through Central and South America. They feed their young nothing but fungus. But not just any fungus, only certain species of fungus that seem to occur nowhere else but in the nests of leafcutter ants. Each species of leafcutter ant has a separate species of fungus that they use as baby-food. These fungi cannot survive without the leafcutter ants, and the leafcutter ants cannot survive without the fungi. A very sophisticated production system has evolved where these ants are constantly adding compost and fertilizer to their fungus gardens, starting new gardens, and making sure they have a good crop.

If you are ever out for a walk in the jungles of South or Central America, keep an eye open for long lines of ants that look like they are all carrying a big chunk of leaf over their head. These are your leafcutter ants. Although adults feed on leaf sap, these pieces of leaves they have cut are not for them to eat. They will chew these up and then deposit them as a base for their fungal food to grow on. So the leaves are essentially turned into a nutritious compost for the fungus garden. The worker ants will also defecate on the leaves. Their feces, like the manure we add to our gardens, contains nutrients that helps their garden grow.

### **These flies will make an ant's head roll**

But getting the leaves back to the nest is not without its hazards. There is a group of flies known as phorid flies that would like nothing better than to lay an egg in the ant's head. The phorid fly larva consumes the ant's brain and muscle until finally the ant's head falls off. So instead of carrying a chunk of leaf back to the nest, some leafcutter ants will ride on top of the chunk of leaf another ant is carrying in its mandibles. But they are not being lazy and along for a free ride. Their job is to fight off phorid flies, as the ant carrying the leaf would not be able to do this. The shotgun riders thrust their legs and snap their mandibles when a fly comes close. So the ant with the leaf doesn't mind a body-guard hitching a free ride.



This line of leaf pieces that looked like it was walking along a trail in Panama is leafcutter ants moving leaves for their fungus garden. Note the guard ant riding on one of the leaves.

Back at the nest ants are busy constantly attending the gardens. Much like vintners trim the branches of grape vines to maximize their yield, minor worker ants prune the surface of the



fungus garden, which stimulates more fungal growth. Small workers also look after food distribution. They feed their nestmates either by regurgitation or handing them edible wads of fungus.

### **Home-made Biopesticides**

As incredible as the association and reliance for survival between leafcutter ants and the species of fungus they cultivate seems, it gets even more interesting. When you grow a garden of fungus for food you don't want other fungi taking over your garden. And there is another fungus, called *Escovopsis*, that left unchecked could be a pest of their fungal garden. But on the cuticle (outer skeleton) of the leafcutter ants a type of bacteria called *Streptomyces* grows. These bacteria produce antibiotics, which specifically target and prevent the growth of the pest fungus. These bacteria are associated with all species of fungus-growing ants studied. This is of real interest to biologists as the association of *Streptomyces* with leafcutter ants is both highly evolved and of ancient origin. Humans have been trying for a long time to come up with more targeted forms of pest management, and although we have had some successes, there are many lessons we can still learn by studying insects and other animals and plants.

So we've seen that before humans had raising livestock and growing gardens figured out, insects were already doing it. So next time you are out for a hike or working in your garden and see ants hanging out around some aphid colonies, appreciate the dynamics of the farmyard scene you are witnessing. And keep an eye out for the cattle rustlers; you may get to witness deception at its finest or an epic battle.

*Incredible Creatures is a monthly contribution to provide information on some of the common yet often not well known creatures that we share space with in Manitoba. John Gavloski is an entomologist living in Carman.*

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