



ALBERTA LEPIDOPTERISTS' GUILD NEWSLETTER

FALL 2017

Welcome to the ALG Newsletter, a compendium of news, reports, and items of interest related to lepidopterans and lepidopterists in Alberta. The newsletter is produced twice per year, in spring and fall, edited by John Acorn.



Red admiral butterfly (*Vanessa atalanta*) with an ant attached to its leg (*Formica* sp., *rufa*-group worker), photographed at the Beaverhill Bird Observatory, by Steve Andersen. Ant identified by James Glasier. Some times, being a butterfly is difficult.

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The ALG's Rowley Adventure

Greg Pohl

This past summer, our incoming president Lisa Lumley decided that the ALG ought to try something new. So, she organised a weekend social and collecting trip to Rowley. Rowley is an almost deserted town in central Alberta, near the badlands of the Red Deer River valley, as well as the Rumsey Natural Area, a "knob and kettle" habitat that few ALGers have visited. The town of Rowley has been used for several historical movies, and can be "rented" for an entire weekend. So that's what ALG did—we rented the townsite for the July 14-16 weekend, and obtained permits to collect in nearby habitats. A total of 26 people came out for some or all of the weekend, and many Lepidoptera were seen. (Report will be available on the website, <http://www.albertalepguild.ca/>)



all photos by GRP



Family	P3 no.	Species	Rowley	Rumsey	Tolman
Hepialidae	110017	<i>Sthenopsis purpurascens</i> (Packard)	X		
Plutellidae	360083	<i>Plutella xylostella</i> (Linnaeus)	X		
Cosmopterigidae	420401	<i>Limnaecia phragmitella</i> Stainton	X		
Coleophoridae	421647	<i>Coleophora trifolii</i> (Curtis)	X		X
Tortricidae	620180	<i>Phtheochroa fulviplicana</i> (Walsingham)	X	X	
Tortricidae	620188	<i>Phtheochroa vitellinana</i> (Zeller)			
Tortricidae	620364	<i>Clepsis peritana</i> (Clemens)	X	X	X
Tortricidae	620629	<i>Celypha cespitana</i> (Hübner)			X
Tortricidae	620799	<i>Eucosma pallidicostana</i> (Walsingham)	X	X	
Tortricidae	620832	<i>Eucosma parmatana</i> (Clemens)	X		
Tortricidae	620835	<i>Eucosma ochroterminana</i> (Kearfott)	X		
Tortricidae	620971	<i>Pelochrista kingi</i> Wright	X		
Tortricidae	621109	<i>Notocelia culminana</i> (Walsingham)	X	X	
Tortricidae	621353	<i>Cydia flexiloqua</i> (Heinrich)	X		
Hesperiidae	770159	<i>Thymelicus lineola</i> (Ochsenheimer)			
Hesperiidae	770274	<i>Euphyes vestris</i> (Boisduval)		X	X
Pieridae	770340	<i>Colias philodice</i> Godart			X
Pieridae	770343	<i>Colias christina</i> Edwards		X	
Pieridae	770392	<i>Pieris rapae</i> (Linnaeus)	X	X	
Lycaenidae	770540	<i>Glaucopsyche hydamus</i> (Doubleday)		X	X
Lycaenidae	770544	<i>Plebejus idas</i> (Linnaeus)			
Nymphalidae	770613	<i>Boloria bellona</i> (Fabricius)	X		
Nymphalidae	770625	<i>Speyeria cybele</i> (Fabricius)	X		
Nymphalidae	770626	<i>Speyeria aphrodite</i> (Fabricius)	X		
Nymphalidae	770593	<i>Limnitis arthemis</i> (Drury)	X		
Nymphalidae	770673	<i>Vanessa cardui</i> (Linnaeus)	X		
Nymphalidae	770677	<i>Aglais milberti</i> (Godart)	X		
Nymphalidae	770742	<i>Phyciodes cocyta</i> (Cramer)	X		
Nymphalidae	770770	<i>Ceryonis pegala</i> (Fabricius)	X		
Crambidae	800753	<i>Petrophila kearfottalis</i> (B. & McD.)	X	X	
Crambidae	800786	<i>Occidentalia comptulatalis</i> (Hulst)	X		
Crambidae	800902	<i>Pediasia ericellus</i> (B. & McD.)	X		

Family	P3 no.	Species	Rowley	Rumsey	Tolman
Crambidae	800904	<i>Pediasia dorsipunctellus</i> (Kearfott)			
Crambidae	800918	<i>Agriphila ruricolellus</i> (Zeller)	X	X	
Crambidae	800926	<i>Chrysoteuchia topiarius</i> (Zeller)	X		X
Crambidae	800931	<i>Crambus perlella</i> (Scopoli)	X	X	
Crambidae	800945	<i>Crambus leachellus</i> (Zincken)			
Crambidae	801356	<i>Mecyna submedialis</i> (Grote)	X	X	X
Crambidae	801511	<i>Pyrausta nicalis</i> (Grote)	X	X	
Lasiocampidae	870014	<i>Malacosoma disstria</i> Hübner	X		
Sphingidae	890112	<i>Sphinx vashti</i> Strecker	X		
Sphingidae	890140	<i>Smerinthus jamaicensis</i> (Drury)	X		
Sphingidae	890145	<i>Paonias myops</i> (Smith)	X		
Sphingidae	890216	<i>Hyles gallii</i> (Rottemburg)	X	X	
Geometridae	911352	<i>Sicya macularia</i> (Harris)	X		
Notodontidae	930003	<i>Clostera albosigma</i> Fitch	X		
Erebidae	930246	<i>Apantesis parthenice</i> (Kirby)	X		
Erebidae	930290	<i>Arctia caja</i> (Linnaeus)	X		
Erebidae	930373	<i>Lophocampa maculata</i> Harris	X	X	
Erebidae	930440	<i>Cisseps fulvicollis</i> (Hübner)	X		
Erebidae	930923	<i>Caenurgina crassiuscula</i> (Haworth)	X		X
Nolidae	931149	<i>Baileya ophthalmica</i> (Guenée)	X	X	
Noctuidae	931236	<i>Plusia putnami</i> Grote	X		
Noctuidae	931291	<i>Protodeltote albidula</i> (Guenée)	X		
Noctuidae	932234	<i>Elaphria alapallida</i> Pogue & Sullivan	X		
Noctuidae	932392	<i>Neoligia subjuncta</i> (Smith)	X		
Noctuidae	932947	<i>Leucania commoides</i> Guenée	X		
Noctuidae	933044	<i>Lacinipolia renigera</i> (Stephens)	X		
Noctuidae	933553	<i>Cryptocala acadiensis</i> (Bethune)	X		
Noctuidae	933588	<i>Xestia c-nigrum</i> (Linnaeus)	X		
micros			12	4	3
macros			5	12	3
butterflies			25	11	4
TOTAL			42	27	10







Boreal Butterfly Diversity in the Oil Sands Region

Federico Riva (friva@ualberta.ca)

Three years ago, I was lucky (and reckless!) enough to begin my program at the University of Alberta. I was searching for a project to keep working with butterflies after a MSc in which I studied the bioacoustics of lycaenid caterpillars interacting with ants, but I wanted a more applied focus. The opportunity to assess the effects of “in situ” extraction of oil sands (i.e., from under ground, with wells) seemed perfect to me, and I decided to move and continue my studies on butterfly biology and ecology in Alberta, under the supervision of Scott Nielsen and John Acorn, at the Applied Conservation Ecology Laboratory (ACE Lab - <http://www.ace-lab.org/>). Needless to say that it's been a priceless experience, and I couldn't ask for more support during this amazing learning and growth process.

In the past three summers (2015-17) I conducted different research projects on the effects on butterfly diversity and behavior of the widespread, narrow corridors (3-10 m wide) that are necessary to locate the underground oil sands reserve. Because these corridors tend to regenerate more slowly (decades) in wet forests, I focused on these environments to maximize the conservation value of my research. I had no idea which butterfly species fly in Alberta, and I had even less knowledge of what to expect from this specific habitat, but after three years I can say that I am pleasantly surprised at the diversity of butterflies in these environments. Here, I want to share with you some general insights originated from this first segment of my research. At this point, I have observed 53 species (Tab. 1).



Cranberry blue feeding on chickweed

Species observed from 2015 to 2017 in the Wood Buffalo Region, Alberta. Species are divided into rare, uncommon and common based on the number of individuals observed (< 10, between 10 and 50, and more than 50 respectively). * Indicates *Speyeria* and *Phyciodes* species that were undistinguishable in field and thus treated as complexes, for which individual species abundance is estimated based on the number of pinned specimens.

Hesperiidae

<i>Thorybes pylades</i>	(rare)
<i>Erynnis icelus</i>	(uncommon)
<i>Carterocephalus palaemon</i>	(uncommon)
<i>Thymelicus lineola</i>	(uncommon)
<i>Ambyscirtes vialis</i>	(uncommon)
<i>Hesperia comma</i>	(uncommon)
<i>Polites mystic</i>	(uncommon)
<i>Polites peckius</i>	(rare)
<i>Poanes hobomok</i>	(rare)

Papilionidae

<i>Papilio canadensis</i>	(common)
<i>Papilio machaon</i>	(rare)

Pieridae

<i>Colias philodice</i>	(common)
<i>Colias gigantea</i>	(uncommon)
<i>Colias interior</i>	(uncommon)
<i>Colias palaeno</i>	(rare)
<i>Pieris oleracea</i>	(rare)
<i>Pieris rapae</i>	(rare)
<i>Pontia occidentalis</i>	(rare)

Lycaenidae

<i>Lycaena hyllus</i>	(rare)
<i>Lycaena dorcus</i>	(common)
<i>Lycaena mariposa</i>	(rare)
<i>Inicisalia augustinus</i>	(common)
<i>Celastrina ladon</i>	(uncommon)
<i>Glaucopsyche lygdamus</i>	(uncommon)
<i>Everes amyntula</i>	(uncommon)
<i>Plebejus saepiolus</i>	(uncommon)
<i>Plebejus optilete</i>	(uncommon)
<i>Lycaeides idas</i>	(uncommon)

Nymphalidae

<i>Boloria chariclea</i>	(common)
<i>Boloria eunomia</i>	(common)
<i>Boloria freija</i>	(common)
<i>Boloria frigga</i>	(uncommon)
<i>Speyeria atlantis</i>	(common)
<i>Speyeria hesperis</i>	(uncommon*)
<i>Speyeria aphrodite</i>	(uncommon*)
<i>Liminitis arthemis</i>	(common)
<i>Vanessa atalanta</i>	(rare)
<i>Vanessa cardui</i>	(rare)
<i>Aglais milberti</i>	(common)
<i>Nymphalis antiopa</i>	(common)
<i>Nymphalis vaualbum</i>	(uncommon)
<i>Polygonia faunus</i>	(common)
<i>Polygonia progne</i>	(rare)
<i>Polygonia satyrus</i>	(rare)
<i>Phyciodes batesii</i>	(common*)
<i>Phyciodes cocyta</i>	(common*)
<i>Enodia anthedon</i>	(rare)
<i>Erebia dischildalis</i>	(uncommon)
<i>Erebia dischildalis</i>	(uncommon)
<i>Erebia mancinus</i>	(uncommon)
<i>Oeneis chryxus</i>	(rare)
<i>Oeneis jutta</i>	(rare)

Of the the 53 species observed, nine species were skippers (three rare, 33%), ten species were lycaenids (two rare, 20%), twenty-five species were nymphalids (seven rare, 28%); two were papilionids (one rare, 50%); and seven were pierids (four rare, 57%). It seems like skippers and pierids are not particularly well-adapted in these environments, while lycaenids and nymphalids were the most abundant taxa in my samples. The most abundant species were certainly the lesser fritillaries, with *Boloria chariclea* being common in virtually any environment sampled. Curiously, *Lycaena dorcas* was also extremely common in the region. On the other hand, these forests appeared unsuitable for most skippers and pierids, including the exotic *Thymelicus lineola* and *Pieris rapae*.

Overall, the most interesting records are likely:

1. *Plebejus optilete*, with numerous new populations discovered in the area

1. *Colias palaeno* and *Papilio machaon hudsonianus*, that have been recorded few times in the Province.
2. *Enodia anthedon* and *Poanes homobok*, north of their previously known distribution

The first study produced after these three field seasons was published in *Biological Conservation*, and it is available online at: <https://doi.org/10.1016/j.biocon.2017.10.022>. We found that butterflies benefitted from the early seral stages of the forest succession that originate after that these corridors were cleared, even if these corridors are narrow in comparison to the usual size of forest disturbance associated with human activities. A short article summarizing our main results is available on the ACE Lab blog, at: <http://ace-lab.tumblr.com/post/167352689043/how-does-habitat-fragmentation-affect-boreal>.

Finally, if you are interested on how lycaenid caterpillar bioacoustics vary depending on their degree of association with ants, here is the link to my previous work: <http://dx.doi.org/10.1080/09524622.2016.1197151>.

My research is possible thanks to the support of the Land Reclamation International Graduate School (<https://sites.ualberta.ca/~lrigs/index.html>), the Alberta Conservation Association, through the ACA grants in biodiversity (<http://www.acabiodiversity.ca/index.htm>), and the Xerces Society through the DeWind award (<https://xerces.org/joan-dewind-award>).



Mariposa copper on black spruce



Poanes homobok, female and male, from near Fort McMurray, collected by Federico Riva.



This tiny butterfly....

I watch this tiny butterfly
as it goes quickly darting by,
and wonder where the bees have gone
and what we will depend upon
if climate will not let them thrive?
And then....how long...will **we** survive?

© *Annie Pang*

Pushing the Boundaries of Endurance

Vic Romanyshyn

There are times when one's enthusiasm can get the better part of valour. Inexperience can be partly blamed in many cases but for the older, presumably wiser folks, being uncertain of how much our physical stamina and resilience have declined with age can be, at the very least, quite humbling. Alternatively, the consequences could be much more dreadful! This was nearly the case this summer when I planned my trip to Adam's Creek Lookout.

We arrived at the Big Berland River campground early in the afternoon on the 5th of July and after setting up camp I ventured to the staging area to check out the first bit of the trail that was going to take me to Adam's Creek Lookout the following morning. On arriving, I found things weren't as expected. The staging area was surrounded by running water with water pooled on the road leading into the parking area and a good flow across the trail I was to take on the trek to Adam's Lookout. Undeterred, I built a walkway across a narrow spot of a channel using borrowed rails from a make-shift horse pen someone had taken time to build. Once across, I checked out the trail for some distance and found it to be the remnants of an old road in reasonable good condition. This led to the decision to use the mountain bike to speed up the trip although I realized that I would be facing a steep climb almost immediately once on the trail which would require walking the bike most of the way up as I didn't think the old legs had the stamina for a full riding ascent.

The next morning I set out at 7 am with my lunch and bottles of water in the backpack and the net tied to the bike frame. The first kilometer of trail was familiar but after that all was all new. From my internet research of this area I knew that there was a horse trail following the Berland River, criss-crossing the river as it went upstream, and an alternate more undulating trail which avoided river crossings but was more demanding of a biker. How undulating and demanding I was to find out soon enough. When I arrived at the fork in the trail I took the left branch leading to the river to assess water depth and speed for potential crossing. If I could continue along the river I would avoid the ups and downs of the other route, making the trip more manageable on bike. One kilometer later the trail brought me to the Berland River and I immediately realized the water speed and depth made crossing nearly impossible so I backtracked to the trail fork and continued on along the upper trail. Shortly after, I was facing another long steep hill. As I progressed it soon became apparent that the big inclines were more numerous than I had hoped and they



When I faced ascension of the third steep slope I began to wonder whether continuing on was worth the rewards awaiting at Adam's Creek Lookout. Stubbornly, I decided to continue on pushing my bike up each subsequent hill convinced that the effort to get the bike up was offset by the effortless descent. In between these more challenging climbs, I had to deal with occasional muddy spots and puddles and some stretches of very rough trail from the accumulation of horse hoof indentations in soft ground. Up to this point I had not had a glimpse of the mountain top I was intending to climb so I decided that I would push on until I got a view of the infamous Adam's Creek Lookout, and only then would I decide whether to continue on or declare defeat. On I went, and when I finally got sight of the mountain top, I was actually standing at the sign "Adam's Creek Lookout" posted at the head of the trail leading up there. Somewhat elated, I stood there realizing that all that was left was the climb to the top. It was 11 am and I felt good! I had abandoned my bike a kilometer back because the trail had deteriorated to a narrow rough horse trail for some distance but further along opened up to flat smooth road again. However, the distance back to retrieve the bike wasn't worth the time and effort so I continued on foot. Once I started up the branch of the Adam's Creek Lookout trail the pace slowed down requiring more frequent stops to rest as the ascent at times was quite steep. About two-thirds of the way up I came upon a small

spring along the side of the trail so I sampled the water and topped up my water bottle. Then on I climbed until I finally emerged above tree line to a spectacular view of the Berland River Valley with the range of mountains to the west and the forested hills to the east. Tired, but elated, I took in the view as I rested for a short time. What looked out of place in this wilderness setting were the buildings of Adam's Lookout set on the mountain top further up the trail. It was nearly 1:00 pm. I then pushed on and soon ran into the first *Oeneis taygete* with its erratic flight and frustrating camouflage once on the ground. Once I had caught a few I finally sat down for a quick lunch. Then, more collecting and searching for anything else of note. Happy to find both *Oeneis taygete* and *polixenes*, both present in reasonable numbers, I was also hoping to see high altitude *Boloria*, particularly *improba*. I managed to catch one fresh *astarte* of the two I saw but there were no *improba* in sight nor did I see dwarf alpine willow, their food source, anywhere in my wanderings. Once at the top I skirted around the buildings of the lookout and followed a trail that continued on to the top of an adjacent mountain but decided to turn back as I did not have enough time to go that distance nor did I feel my legs would take the stress of another climb. That was unfortunate as I could see potential for alpine willow on the side of that peak. At this point it was already after 3 pm and clouds were blotting out the sun so I began my descent. On the way down I refilled my water bottle at the same spring and continued on down the mountain. My progress down was steady and the stress on my legs began to take its toll from having to slow my downhill descent. I also was losing more body fluid than I expected so I was drinking more and more water as I went. By the time I reached my bike I felt tired and I was immediately faced with a climb up a long narrow trail before I could make good use of the bike. Slowly I worked my way up and once on flat ground mounted the bike to speed up the return trip. Fortunately, the next 2 kilometers were reasonably flat, about all the legs were willing to face. I was beginning to get concerned as after that there were several long climbs. As I progressed, each climb became more and more of a challenge pushing the bike up with legs that were less and less willing to respond to the demands of the trail. I was sweating profusely, losing water almost as fast as I was drinking it. The last drop of water went down the gullet and I still had a good distance to go so now I knew things could go seriously wrong. Each climb took longer and longer as I had to make more frequent stops to recharge the leg muscles and to reduce overheating and water loss. When I reached the last hill I had to climb it was almost 7 pm. Leaving the bike behind here crossed my mind with the intent of coming back in the morning to retrieve it. Doing this, however, meant that I would have to walk the last kilometer which would take much more time. Knowing my wife, I knew she was already worried that I was not back yet and

would begin to panic if my return was later than 8 pm. Getting back post haste was critical so up the hill I went bike and all, the mind pushing me forward though the legs screamed for reprieve. Once at the top I mounted the bike for the last time and cautiously descended the back side of the steep hill, desperately working the breaks to maintain control until I got onto a gentler decline and finally flat ground. Thankfully, the last 300 meters or so were relatively smooth though a portion traversed a rough meadow and running water. I coaxed my rubbery legs to push on the pedals. A short time later, dehydrated and exhausted, I stood next to the truck, never so happy to see it. At 7:30 pm I parked the truck next to our trailer in the campground. I knew I had pushed myself to the limit of endurance and that I was lucky in some ways to have come back unscathed.

You might be wondering if I would I do this trip again! The answer of course is yes, but I would take a quad to the Wilmore Wilderness boundary and bike from there. This would certainly make the trip much easier on the mojo the following morning.



"Vic in Action" at the Cardinal Divide, by Dave Lawrie

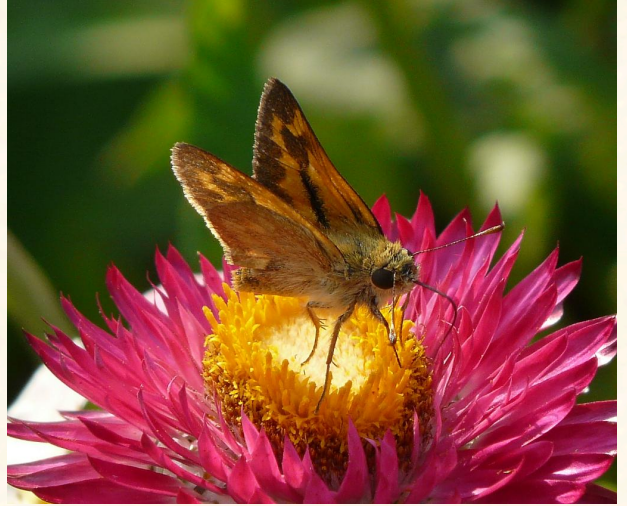
This little life before me

The Autumn sun was gliding low
as, in my heart, was I -
when b'yond the Summer's end there came
a little butterfly.

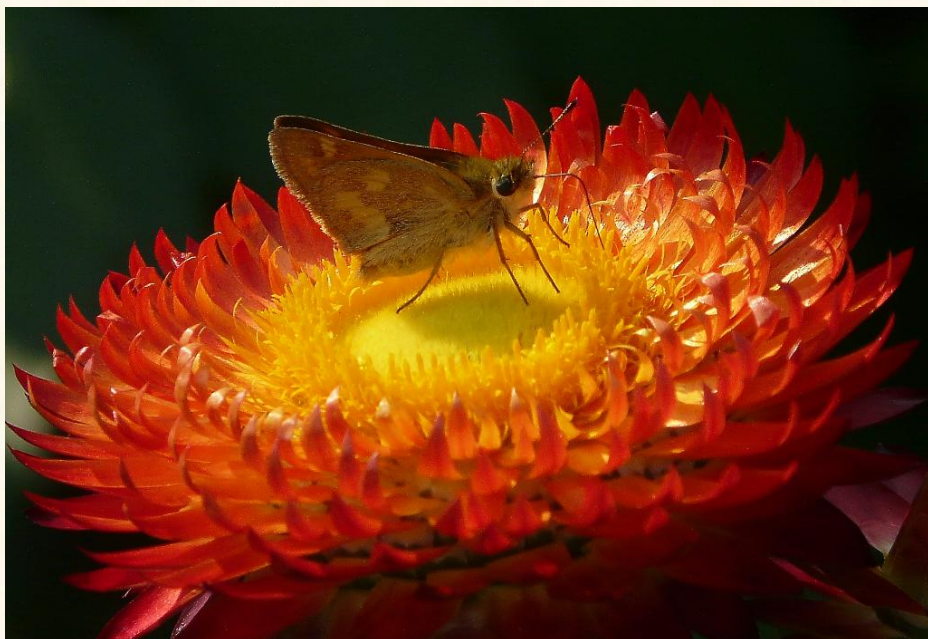
Upon a golden marigold
he landed flawlessly
with curled up straw that he would use
to sip and sing to me.

He was so youthful, oh so young,
and thus he could not know
how fickle was the shining orb,
how warmth could turn to snow.

I saw this little life before me,
changing with the sky,
while wishing on a wondrous thing
that only miracles could bring
on the wings of a butterfly...



© Annie Pang, with photos by Andrea Jackson, November 2017



A Minor Invasion: Painted Ladies in Alberta, 2017

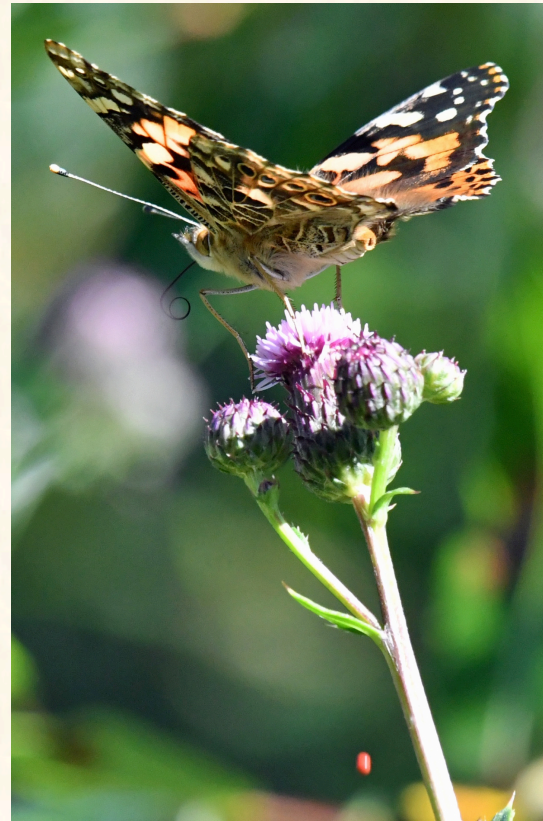
John Acorn

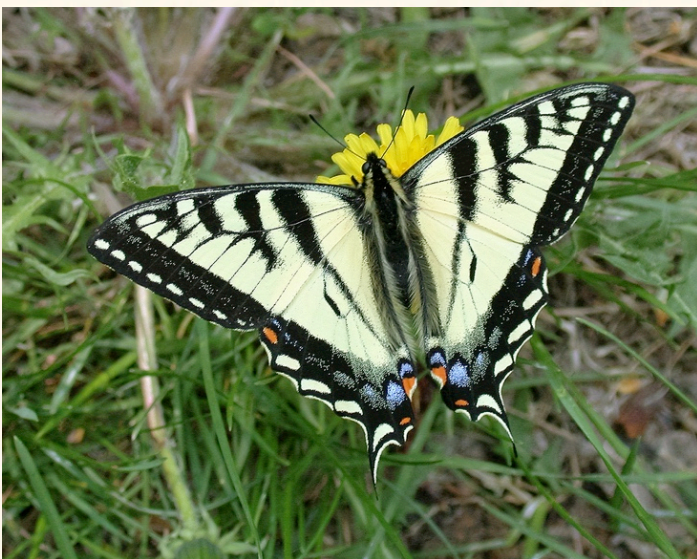
The excitement began in early June, with reports of “clouds” and “hundreds, maybe thousands” of *Vanessa cardui*, here and there in Alberta. Surely, this would be a “big year” for this irruptive species. Looking back over my notes from 2005, I confidently predicted that the next generation of painted ladies would emerge in July, and dazzle us all. But July came and went, with only a few widely scattered reports of large numbers. August, and presumably a third generation, produced the same result. So, what happened?

One possibility is that the migrating ladies encountered good numbers of parasites (and perhaps diseases) when they got here, since the closely related red admirals (*V. atalanta*) have been relatively common for the past few years. Another possibility is that the dramatic mass movements of painted ladies were thwarted this year by wildfire smoke. Entomologist Dan Johnson suggested this explanation, and referred me to some observations of his own (D. L. Johnson, D. Naylor, and G. Scudder, “Red sky in day, bugs go astray,” *Annual Meeting of the Canadian Association of Geographers, Western Division, Lethbridge, Alberta, Canada, 12 March 2005*, Abstracts (2005), p. 45.).

One thing is clear, however. To see the full spectacle, we need to wait for the next wave. On occasion, two big years occur in succession, but more likely it will be ten years or so before the painted ladies irrupt into Alberta again.

(Right: painted lady in Whitemud Ravine, Edmonton, Aug. 3, 2017, expressing its displeasure with Alberta. Photo: Wayne Oakes).





And to wrap things up, a selection of Alberta butterfly photographs from Gary Anweiler. On this page: *Pontia occidentalis*, *Colias eurytheme*, and *Papilio canadensis*.



Above, top to bottom: *Atrytonopsis hianna* (Crooked L., Saskatchewan), *Poanes hobomok*.



Above: *Plebejus melissa*.



Above, top to bottom: *Plebejus saepiolus*, *Celastrina ladon*, *Glaucopsyche lygdamus*, *Cupido amyntula*.



Above, top to bottom: *Polygonia progne*, *Chlosyne acastus*, *Liminitis archippus*, *L. arthemis*.



Above, top to bottom: *Boloria eunomia*, *Speyeria callippe* (ventral, dorsal), *S. atlantis*.



Above, top to bottom: *Erebia epipsodea*, *Oeneis uhleri*, *Enodia anthedon*.