LEPIDOPTERA OF THE J.J. COLLETT PROVINCIAL NATURAL AREA, 2002-2009

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The present paper incorporates the information in previous reports along with that gathered in 2009. It also includes a number of redeterminations and additions to the information in the earlier reports.

Some of the participants on the May 30, 2004, J.J. Collett Natural Area Spring Walk. Left to right: Jack Surbey, Bob Delong, Gail Hughes, Sylvia Glass, Ann Bird, Claudia Cameron, Ron Kruger.

THE AREA

The J.J. Collett Natural Area is made up of a section of land located near Morningside, 11 km NNE of Lacombe and 11 km south of Ponoka. The coordinates at the parking area are 52.53N, 113.65W and the elevation is around 870 m. The land was originally purchased by the Alberta Government from J.J. Collett in 1974. An elementary study of the natural resources and ecology of the area was carried out in that year by staff of the Alberta Department of the Environment and the Alberta Wildlife Foundation.
(Bienek 1974). Further studies carried out in 1980 resulted in a map of the trails and vegetation units of the area as well as data sheets of the major communities (Munsell 1980); this was followed by a management plan for the Natural Areas Program, Alberta Forestry, Lands and Wildlife (Leszczynski 1987). The area is currently managed by volunteer members of the J.J. Collett Foundation, the Parks and Protected Areas Division of Alberta Community Development and the Public Lands Division of Alberta Sustainable Resource Development.

Ecologically, the area is made up of sandy, rolling, morainal aspen parkland. The vegetation of the area is quite diverse with aspen, balsam poplar, white spruce and paper birch all being common. There are open meadows, heavy woods, low wetlands, dry south-facing slopes and steep north-facing slopes. Though appearing at first glance to be undisturbed, the area was used many years ago for grazing cattle and, at one time, a small sawmill processed timber from the area. At present, the only agricultural use is that of limited late fall and early winter horse grazing to help lower the risk of fire by reducing the grass cover.

**BACKGROUND**

Provincial Parks and other areas where natural vegetation is protected are of great value as their flora and fauna is typical of what was in Alberta before widespread agricultural activities which resulted in a replacement of many native species by weedy species associated with cultivated grains and hay crops. As a result, many of Alberta’s “rare and endangered” species are now found only, or mainly, in such protected areas.
The author, now retired and living in Erskine, Alberta, has had a long-time interest in the natural flora and fauna of the province. In the spring of 2000, he commenced an examination of the moths of south-central Alberta, the purpose of which was to document the species present in various natural areas. He has been in the area every year or so for over ten years. Dates and details of times when studies have been made are in the Appendix. No attempts have been made to sample moths by sugaring. Obviously, many additions can be made to the following checklist, and further studies are needed.

Reports have been prepared on research carried out each year from 2002 onwards (Bird 2003-2009). The present paper incorporates the information in the previous reports along with that gathered in 2009. It also includes a number of redeterminations and additions to the information in the earlier reports.

There is still much to be learned about the distribution and status of lepidopteran (moth and butterfly) species in south-central Alberta. Baseline studies of this sort provide information that helps characterize the species associated with various ecoregions, in the present case Aspen Parkland; determine the status designations (abundant, common, rare, endangered) of various species; show the effects of grazing on species composition and abundance; and allow the examination of many other parameters, including phenology, dry vs. wet years, and outbreaks of various species such as by forest tent caterpillars.

The author is a member of the Alberta Lepidopterist’s Guild, the purpose of which is to encourage the study of Alberta’s moths and butterflies.

**SPECIMEN DISPOSITION**

All specimens collected by the writer presently reside in his collection but they will eventually be donated to one or more of the University of Alberta Strickland Museum, the Northern Forest Research Centre in Edmonton, and the Canadian National Collection in Ottawa.

**THE FOLLOWING CHECKLIST**

The order and terminology, is that of R.W. Hodges (1983) except where recent changes in taxonomy have occurred. While most of the larger (macromoths) are relatively well known, the same cannot be said for many of the smaller ones (micromoths). Identifications, especially of the latter, can be difficult or are at present impossible, until such time as revisionary studies are made. Also, genitalic dissection and examination is necessary for positive identification in some groups. For these reasons, some of the determinations found herein should be regarded as tentative. The scientific names of the species are followed by the day-month-year of the collection and the number of individuals mounted; an “SR” indicates a sight record. Common names are mentioned in those cases where such names exist.

Kenneth Bowman’s (1951) list of the Lepidoptera of Alberta presents all species known at that time and gives the distribution of each according to 21 Areas. His areas 5, 8 and 10 essentially cover all of south-central Alberta, with the J.J. Collett Natural Area...
being in Area 8. Most of Bowman’s records are from Area 10, which includes Edmonton, so most of the species found in the following list would be additions to his Area 8.

Pohl et al (2010) have put together an up-to-date annotated list of the Lepidoptera of Alberta. They include 2367 species, many more than those mentioned by Bowman (1951). The list incorporates recent changes in taxonomy of all groups according to various literature sources, including those listed for the Noctuoidea by Lafontaine & Schmidt (2010).

**HEPIALIDAE – Ghost Moths and Swifts**


![Korscheltellus gracilis image from Moth Photographers Group web site.](image)

31. *Korscheltellus gracilis* (Grt.) (Conifer Swift Moth) – 29A-VII-2009 1. The larvae of this moth are root borers in coniferous trees.

**TINEIDAE – Clothes Moths and others**


**GRACILLARIIDAE – Gracilariid Moths**


**OECOPHORIDAE – Oecophorid Moths**


**ELACHISTIDAE – Elachistid Moths**


**BLASTOBASIDAE – Blastobasid Moths**

Species unknown – 27-VIII-2002 1. It has been sent to David Adamski for identification.

**COLEOPHORIDAE – Coleophorid Moths**

1388. Coleophora trifolii (Curt.) (Large Clover Case-bearer Moth) – 6-VII-2004 1.

**GELECHIIDAE – Gelechiid Moths**


1898. Lita sexpunctella (F.) – 30-V-2004 1. The specimen was found during the day flying over bearberry, which is the larval food plant.

**PLUTELLIDAE – Plutellid Moths**


**YPONOMEUTIDAE – Yponomeutid Moths**

2426. Euhypomonemutoides gracilariella (Bsk.) – 28-V-2002 1?

**CHOREUTIDAE – Choreutid Moths**


**ARGYRESTHIIDAE – Argyresthiid Moths**


**TORTRICIDAE – Tortricid Moths**

2765. Apotomis deceptana (Kft.) (Deceptive Apotomis Moth) – 9B-VIII-2003 1.
2769. Pseudosciaphila duplex (Wlsm.) (Spotted Leaf Roller or Poplar Leafroller Moth) – 6-VII-2004 2.
Acleris spp. - 7D-V-2007 2 and 7C-V-2007 1.
3667. Archips packardiana (Fern.) (Spring Spruce-needle Moth) – 6-VII-2004 1.
3672. Syndemis afflictana (Wlk.) (Gray Leafroller Moth or Black-and-Gray Banded Leafroller Moth) - 28-V-2006 1.

**COCHYLIDAE – Cochylid Moths**

The members of this family are currently being revised by Dr. Eric Metzler and Dr. John Brown. The following specimen is presently being examined by them.


**HESPERIIDAE – Skippers**

3910. Thorybes pylades (Scudder) (Northern Cloudywing) – 30-VI-2004 Adam Blake photo.

**PAPILIONIDAE – Swallowtail Butterflies**

4176a. Papilio glaucus canadensis R. & J. (Canadian Tiger Swallowtail) - 28-V-2005 3 SR and 10-VI-2006 2 SR

**PIERIDAE – White and Sulphur Butterflies**


**LYCAENIDAE – Blues and Coppers**

4262. Lycaena helloides (Bd.) (Purplish Copper) – 4-IX-2004 Adam Blake photo.
4362b. Everes amyntula (Bdv.) (Western Tailed Blue) - 10-VI-2006 1.
4372a. Glaucopsyche lygdamus couperi Grt. (Silvery Blue) - 28-V-2005 2 SR.

**NYMPHALIDAE - Fritillaries**

4432. Nymphalis antiopa (L.) (Mourning Cloak) – 26-V-2002 4 SR and 10-VIII-2003 1 SR.
4433. Aglais milberti (Godt.) (Milbert’s Tortoiseshell) – 26-IX-2004 1 SR.
4463. Clossiana eunomia (Esper) (Bog Fritillary) – 10-VI-2006 1.
4475. Boloria chariclea (Schneider) (Purple Fritillary) – 12-VIII-2002 1 and 10-VIII-2003 1; also a photograph by Sylvia Glass.

**SATYRIDAE – Browns and Alpines**


Purple Fritillary and Assiniboine Skipper (10 Aug 2003) and Monarch (30 Jun 2007) photographs by Sylvia Glass.

**DANAIDAE - Monarchs**

4614. Danaus plexippus (L.) (Monarch) – on 25 Jul 1998, the author photographed a Monarch caterpillar on Low Milkweed (Asclepias ovalifolia) in the J.J. Collett Natural Area. On 30 Jun 2007, an adult was photographed on Low Milkweed by
Sylvia Glass. This species is uncommon in Alberta, especially as its preferred foodplant, Showy Milkweed, primarily occurs in eastern North America. The species has not been seen in the area since that time.

**PYRALIDAE – Snout or Pyralid Moths**

5299. Acentria ephemerella (Denis & Schiffermüller) (Water Veneer Moth) – 9A-VIII-2003 1, 9B-VIII-2003 1 and 29C-VII-2009 1. A new species for Alberta (Pohl et al. 2005), though it has now been found in numerous places in the province.
5606. Tetralopha asperatella (Clem.) (Maple Webworm Moth) – 6-VII-2004 2.
PTEROPHORIDAE – Plume Moths


THYATIRIDAE – Thyatirid Moths

6235. Habrosyne scripta (Gosse) (The Scribe or Lettered Habrosyne) – 21-VI-2002 1 and 6-VII-2004 1.
6240. Euthyatira pudens (Gn.) (Dogwood Thyatira) – 7B-V-2007 1.

DREPANIDAE – Drepanid Moths


GEOMETRIDAE – Inchworm or Geometrid Moths

6598. Protoboarmia porcelaria (Gn.) (Speckled Carpet) – 6-VII-2004 1 and 29C-VII-2009 1.
6651. Lycia ursaria (Wlk.) (The Bear or Stout Spanworm Moth) – 19A-IV-2000 1 and 7C-V-2007 1.
6737. Euchlaena tigrinaria (Gn.) (Mottled Euchlaena) – 6-VII-2004 3.
6743. Xanthotype sospeta (Drury) (Crocus Geometer) – 6-VII-2004 3.
6799. Spodolepis substriaria (Hulst) – 7B-V-2007 1 and 7C-V-2007 1.
6822. Metarranthis duaria (Gn.) (Ruddy Metarranthis) – 21-VI-2002 1.
7159. Scopula limboundata (Haw.) (Large Lace-border) – 6-VII-2004 1.
7395. Epirrhoe plebeculata (Orange-winged Carpet) – 3-V-3008 2.
7396. Epirrhoe sperryi Herbulot (Small Argent and Sable) – 28-V-2005 1.
7639. Cladara atroliturata (Wlk.) (The Scribbler) - 7D-V-2007 2.

**URANIIDAE – Uraniid Moths**


**LASIOCAMPIDAE – Lappet Moths**


**SATURNIDAE Large Silkworm Moths**


**SPHINGIDAE – Sphinx Moths**


**NOTODONTIDAE – Prominent Moths**


**ARCTIIDAE – Tiger Moths and others**

8037. Gnophaela vermiculata (Grt.) (Green Lattice or Police Car Moth) – 12-VIII-2002 1.
8137. Spilosoma virginica (F.) (Virginian Tiger Moth or Yellow Woolly Bear) – 21-VI-2002 1 and 26-IX-2004 last instar caterpillar.

Yellow Woolly Bear Caterpillar, September 26, 2004


**LYMANTRIIDAE – Tussock Moths**


**NOCTUIDAE – Owlets or Noctuid Moths**

A mating pair of Caenurgina crassiuscula, May 30, 2004

8923. Autographa ampla (Wlk.) (Broken-banded Y or Large Looper Moth) – 29B-VII-2009 1.
8975. Nycteola frigidana (Wlk.) (Frigid Owlet or Willow Leaftier) - 7D-V-2007 1.
9212. Acronicta grisea (Wlk.) (Gray Dagger Moth) – 6-VII-2004 1.
9241. Acronicta fragilis (Gn.) (Fragile Dagger Moth) – 6 VII-2004 1.
9412.1. Oligia subjuncta (Sm.) (Short-cloaked Quaker) – 6-VII-2004 1 and 29A-VII-2009 1.


9578. Hyppa contrasta McD. (was Hyppa nr. xylinoides) (Common Hyppa or Cranberry Cutworm) – 6-VII-2004 1 and 29A-VII-2009 1.

9647. Proxenus miranda (Grt.) (Glistening Rustic) – 6-VII-2004 1.


10008. Feralia comstocki (Grt.) Comstock’s Sallow) – 7C-V-2007 1 and 7D-V-2007 2.

10027. Pleromelloida obliquata (Sm.) (Oblique Rover) – 28-V-2002 1, 7C-V-2007 2 and 7D-V-2007 1.


10067. Adita chionanthi (J. E. Sm.) (Fringed Tree Sallow) – 9A-VIII-2003 1.

10275. Polia nimbo (Gn.) (Stormy Arches) – 6-VII-2004 3.

10276. Polia imbrifera (Gn.) (Cloudy Arches) – 21-VI-2002 1 and 6-VII-2004 2.


10297. Lacanobia atlantica (Grt.) (Atlanta Arches) – 21-VI-2002 1.

10298. Lacanobia radix (Wlk.) (Garden Arches) – 21-VI-2002 1.

10305. Trichordestra dodii (Sm.) (Dod’s Arches) – 29A-VII-2009 1.

10310. Papestra quadrata (Sm.) (Quadrate Arches) – 28-V-2002 3.

10368. Lacinipolia meditata (Grt.) (The Thinker or Pale-backed Cutworm Moth) – 29B-VII-2009 1.

10370. Lacinipolia lustralis (Grt.) (Lustrous Arches) – 6-VII-2004 3.
10372. Lacinipolia anguina (Grt.) (Snaky Arches) – 21-VI-2002 1.
10405. Lacinipolia lorea (Gn.) (Bridled Arches) – 6-VII-2004 1.
10495. Orthosia hibisci (Gn.) (Variable Penman or Speckled Green Fruitworm Moth) – 19A-IV-2005 1, 7C-V-2007 1 and 7D-V-2007 1.
10563. Protorthodes oviduca (Gn.) (Ruddy Quaker or Island Stylus) – 21-VI-2002 7 SR.
10944. Xestia smithii (Snellen) (Smith’s Dart or Spotted Clay Dart) – 9B-VIII-2003 1, 29A-VII-2009 1 and 29C-VII-2009 1.

DISCUSSION

An analysis of the data from the present study of the moths encountered in twelve major study areas in south-central Alberta, reveals that the present area (JC) has less than 43% similarity to the other areas. This is probably due in large part to inadequate sampling. Clearly more research is needed.

SUMMARY

Not counting undetermined species, varieties, and forms, the list for 2002 contained 151 species of moths. The 2003 report brought the total up to 181, that for 2004 had 255, the 2008 report had 283 species, while the present report has 310. Twenty nine species of skippers and butterflies are listed for the area. While these may seem like impressive numbers, it is felt that, with further study, the total can be easily doubled. To put things into perspective, Pohl et al (2010) document 2367 species of Lepidoptera for Alberta.

Of the 14 major areas involved in the present study, four species of moths were found only in the J.J. Collett Natural Area - Korscheltellus gracilis (Grt.), Lita sexpunctella (F.), Spodolepis substraria (Hulst) and Hemaris diffinis (Bdv.).

Moths were found on all visits but peak numbers occurred during the summer months. As most species fly for only a few days, sampling should be carried out every week or so. As time commitments have not allowed this, attempts have been made to bracket time periods so that various species will not be missed. It is important that further work be conducted.

ACKNOWLEDGEMENTS
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**LITERATURE CITED**


**USEFUL ONLINE INFORMATION SOURCES ON MOTHS**

Information on many of our Alberta moths can be found at the Entomology Collection Search site of the E.H. Strickland Entomological Museum of the Department of Biological Sciences at the University of Alberta: [http://www.entomology.ualberta.ca/](http://www.entomology.ualberta.ca/).


Illustrations on many of the western American macromoths can also be found on a site put together by The Moth Photographers Group: [http://www.origins.tv/MothPhotographersGroup/WestPlates.htm](http://www.origins.tv/MothPhotographersGroup/WestPlates.htm).

D. Lynn Scott has a web site with natural photos of over 400 species of moths that she has found in Ottawa, Ontario ([http://www.hei.ca/dls/mothindex.html](http://www.hei.ca/dls/mothindex.html)). As many of the species also occur in Alberta, these images can be quite helpful.

**USEFUL BOOKS ON MOTHS**


**APPENDIX**

Collection dates, sites and other details

25 July 1998 – hike on which a *Danaus plexippus* caterpillar was seen on Asclepias ovalifolia.

26 May 2002 – Diurnal, annual spring hike, 52.53, 113.65, 850 m.

28 May 2002 – 2 UV traps and a MV light and sheet, 52.53, 113.65, 850 m.

21 June 2002 – 2 UV traps, 52.53, 113.65, 850 m.

12 August 2002 – Diurnal, annual fall walk, 52.53, 113.65, 850 m.

27 August 2002 – 2 UV traps plus MV light and sheet, 52.53, 113.65, 850 m; UV traps stolen and parts found near gate.
9A August 2003 – 1 UV trap, aspen woods, 52.552, 113.640, 895 m.
9B August 2003 – 1 UV trap, Picea glauca woods, 52.551, 113.640, 866 m.
30 May 2004 – Diurnal, annual spring hike, mixed woods, 52.53, 113.65, 875 m.
6 July 2004 – Diurnal, 52.55, 113.64, 850-880 m.
6 July 2004 – UV, S-facing Stipa meadow in mixed woods, 52.552, 113.640, 888 m.
6 July 2004 – UV, small clearing in mixed woods, 52.552, 113.640, 852 m.
26 September 2004 – Diurnal, annual fall hike.
19 April 2005 – UV, S-facing Stipa meadow in mixed woods, 52.552, 113.640, 888 m.
28 May 2005 – Diurnal, annual spring hike, 52.55, 113.64, 890 m.
25 September 2005 – annual fall hike, 52.55, 113.64, 890 m.
28 May 2006 – Diurnal, annual spring hike, 52.55, 113.64, 890 m.
10 June 2006 – diurnal, hiking, mixed woods, 52.55, 113.64, 890 m.
7A May 2007 – Crepuscular, annual spring hike, mixed woods, 52.55, 113.64, 860-900 m.
7B May 2007 – UV, Picea glauca woods, 52.551, 113.640, 866 m.
7C May 2007 – UV, aspen woods, 52.552, 113.640, 895 m.
7D May 2007 – UV, Picea glauca woods, 52.553, 113.639, 900 m.
27 May 2007 – Diurnal, annual spring hike, 52.55, 113.64, 890 m.
27 September 2007 – Diurnal, annual fall hike, 52.55, 113.64, 890 m.
3 May 2008 – Diurnal, annual spring hike, 52.55, 113.64, 890 m.
27 September 2008 – Diurnal, annual fall hike, 52.55, 122.64, 890 m.
31 May 2009 – Diurnal, annual spring hike, 52.55, 113.64, 860-900 m.
29A July 2009 – UV, N-facing slope with Picea glauca, 835 m.
29B July 2009 – UV, small S-facing meadow, 52.553, 113.641, 835 m.
29C July 2009 – UV, wet Picea glauca woods, 52.552, 113.641, 820 m.
27 September 2009 – Diurnal, annual fall hike, 52.553, 113.641, 835 m.
PLATE 1. Some J.J. Collett Natural Area Lepidoptera.

Monarch caterpillar on low milkweed, 25-VII-1998