

LEPIDOPTERA OF THE J.J. COLLETT PROVINCIAL NATURAL AREA, 2002-2008

Charles Durham Bird, 8 May 2009
Box 22, Erskine, AB, T0C 1G0
cdbird@telus.net

The present paper incorporates the information in previous reports along with that gathered in 2008. 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.



Trail through mixed woods, 30 May 2004

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 2003-2007). The present paper incorporates the information in the previous reports along with that gathered in 2008. 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.

HEPIALIDAE – Ghost Moths and Swifts

29. *Gazoryctra noviganna* (B. & Benj.) (*Novigannus* Ghost Moth) – 27-VIII-2002 2.

TINEIDAE – Clothes Moths and others

399. *Tinea irrepta* Braun – 6-VII-2004 1.
nn. *Monopis laevigella* (D. & S.) – 6-VII-2004 1.

GRACILLARIIDAE – Gracilariid Moths

587. *Caloptilia alnivorella* (Cham.) – 28-V-2002 1.
639. *Caloptilia stigmatella* (F.) – 28-V-2002 1.
669. *Parornix conspicuella* (Dietz) – 6-VII-2004 1

OECOPHORIDAE – Oecophorid Moths

876. *Agonopterix rosaciliella* (Bsk.) – 26-V-2002 1 and 19B-IV-2005 1.
889. *Agonopterix argillacea* (Wlsm.) – 28-V-2002 6.
908. *Depressariodes ciniflonella* (Lienig & Zell.) – 28-V-2002 1, 27-VIII-2002 1 and 19A-IV-2005 1.
910. *Martyrhilda fulva* (Wlsm.) – 27-VIII-2002 1. Can be confused with 2127 *Filatima abactella*, however the latter flies in the spring and early summer.
913. *Semioscopis merricella* Dyar – 19B-IV-2005 1.
914. *Semioscopis inornata* Wlsm. – 19A-IV-2005 1.
915. *Semioscopis megamicrella* Dyar – 19A-IV-2005 1.
916. *Semioscopis aurorella* Dyar – 19A-IV-2005 1, 19B-IV-2005 7 and 3-V-2008 1.
922. *Depressaria pastinacella* (Dup.) (Parsnip Webworm Moth) – 28-V-2002 1.

BLASTOBASIDAE – Blastobasid Moths

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

COLEOPHORIDAE – Coleophorid Moths

- 1254-1389. *Coleophora* sp. – 6-VII-2004 6. These specimens are on loan to Dr. Jean-François Landry who is doing a North American monograph of the group. Some of the specimens may be of species that remain to be described.
1271. *Coleophora pruniella* Clem. (Cherry Case-bearer) – 6-VII-2004 3.
1388. *Coleophora trifolii* (Curt.) – 6-VII-2004 1.

GELECHIIDAE – Gelechiid Moths

- Species unknown – 26-V-2002 1, 28-V-2002 3, 21-VI-2002 1, 27-VIII-2002 1, 9A-VIII-2003 3, 9B-VIII-2003 4, 6-VII-2004 10, 19A-IV-2005 2, 7C-V-2007 1 and 7D-V-2007 2. Little is known about many of the species in this family and it may be many years before some of these specimens are determined or described.
1792. Coleotechnites atrupictella (Dietz) – 9B-VIII-2003 2.
1796. Coleotechnites blastovora (McLeod) – 28-V-2002 2, 7C-V-2007 1 and 7D-V-2007 1.
1880. Xenolechia velatella (Bsk.) – 6-VII-2004 1.
1898. Lita sexpunctella (F.) – 30-V-2004 1. The specimen was found during the day flying over bearberry, which is the larval food plant.
1946. Gelechia lynceella Zell. – 6-VII-2004 3.
2093. Chionodes mediofuscella (Clem.) – 21-VI-2002 1.
2111. Chionodes psilopterus (B. & Bsk.) – 6-VII-2004 3.
2117. Chionodes terminimaculella (Kft.) – 21-VI-2002 1.
2127. Filatima abactella (Clarke) – 28-V-2002 1, 21-VI-2002 1, 27-VIII-2002 1, 30-V-2004 1.
2235. Anacampsis fragariella Bsk. – 10-VIII-2003 1.
2243. Anacampsis niveopulvella (Cham.) – 9A-VIII-2003 3, 9B-VIII-2003 1.
2267. Helcystogramma fernaldella (Bsk.) – 21-VI-2002 1.
2302. Dichomeris setosella Clem. – 27-VIII-2002 1.

PLUTELLIDAE – Plutellid Moths

2366. Plutella xylostella (L.) (Diamondback Moth) – 28-V-2002 1, 9A-VIII-2003 1, 9B-VIII-2003 1.
2371. Ypsolopha canariella (Wlsm.) – 27-VIII-2002 1.
2376. Ypsolopha dentiferella (Wlsm.) – 9A-VIII-2003 1.
2380. Ypsolopha falciferella (Wlsm.) – 28-V-2002 1.

YPONOMEUTIDAE – Yponomeutid Moths

2426. Euhyponomeutoides graciliariella (Bsk.) – 28-V-2002 1?

CHOREUTIDAE – Choreutid Moths

2651. Choreutis diana (Hbn.) – 10-VIII-2003 3.

TORTRICIDAE – Tortricid Moths

- Olethreutinae indet. – 12-VIII-2002 2 and 6-VII-2004 3.
2755. Apotomis funerea (Meyr) – 27-VIII-2002 1.
2765. Apotomis deceptana (Kft.) – 9B-VIII-2003 1.
2766. Apotomis dextrana (McD.) (Green Aspen Leafroller) – 28-V-2002 1.
2769. Pseudosciaphila duplex (Wlsm.) (Spotted Leaf Roller) – 6-VII-2004 2.

2770. *Orthotaenia undulana* (D. & S.) (Dusky Leafroller) – 6-VII-2004 2.
- 2774/2859. *Olethreutes* sp. – 6-VII-2004 10.
2794. *Olethreutes quadrifidus* (Zell.) – 6-VII-2004 2.
2839. *Olethreutes puncticostana* (Wlk.) – 6-VII-2004 12 and 10-VI-2006 7.
2861. *Hedya ochroleucana* (Frölich) – 6-VII-2004 3.
2969. *Phaneta indagatricana* (Heinr.) – 9B-VIII-2003 1.
2972. *Phaneta dorsiatomana* (Kft.) – 26-V-2002 1.
2985. *Phaneta infimbriana* (Dyar) – 9A-VIII-2003 1.
3211. *Notocelia culminana* (Wlsm.) – 27-VIII-2002 2, 9B-VIII-2003 1.
3223. *Gypsonoma fasciolana* (Clem.) – 21-VI-2002 2.
3227. *Gypsonoma substitutionis* Heinr. – 6-VII-2004 1.
3228. *Gypsonoma salicolana* (Clem.) - 7A-V-2007 1.
3248. *Pseudexentera oregonana* (Wlsm.) (Early Aspen Leafroller) – 28-V-2002 7 SR, 21-VI-2002 2 SR, 19A-IV-2005 1, 7A-V-2007 1, 7C-V-2007 4, 7D-V-2007 1 and 3-V-2008 5.
3306. *Epinotia nisella* (Cl.) – 27-VIII-2002 5, 9A-VIII-2003 3, 6-VII-2004 1.
3307. *Epinotia criddleana* (Kft.) – 27-VIII-2002 3.
3382. *Ancylis unguicella* (L.) – 28-V-2002 7, 21-VI-2002 2. 30-V-2004 4 and 30-V-2005 1.
3384. *Ancylis mediofasciana* (Clem.) – 28-V-2002 2, 21-VI-2002 3.
3437. *Grapholita lunatana* Wlsm. – 26-V-2002 1.
3460. *Cydia ingrata* (Heinr.) – 28-V-2002 1.
- Acleris* spp. - 7D-V-2007 2 and 7C-V-2007 1.
3514. *Acleris cervinana* (Fern.) – 19A-IV-2005 1.
3531. *Acleris hastiana* (L.) – 28-V-2002 1.
3536. *Acleris robinsoniana* (Forbes) – 26-V-2002 1, 28-V-2002 2.
3548. *Acleris variana* (Fern.) – 9A-VIII-2003 1, 9B-VIII-2003 4.
3549. *Acleris maccana* (Tr.) – 19B-IV-2005 1.
3556. *Acleris nigrolinea* (Rob.) – 28-V-2002 2.
3557. *Acleris maximana* (B. & Bsk.) – 28-V-2002 1 and 25-IX-2005 1.
3561. *Acleris hudsoniana* (Wlk.) – 28-V-2002 1.
3568. *Eana argentana* (Cl.) – 6-VII-2004 2.
3589. *Anopina wellingtoniana* (Kft.) - 7A-V-2007 1.
3635. *Choristoneura rosaceana* (Harr.) (Oblique-banded Leafroller) – 6-VII-2004 1.
3637. *Choristoneura conflictana* (Wlk.) (Large Aspen Tortrix) – 6-VII-2004 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.
3682. *Clepsis persicana* (Fitch) (White-triangle Tortrix) – 6-VII-2004 3.
3684. *Clepsis clemensiana* (Fern.) – 9A-VIII-2003 1.
3686. *Clepsis melaleucana* (Wlk.) – 6-VII-2004 1.
3689. *Ptocholoma virescana* (Clem.) – 27-VIII-2002 1 and 9B-VIII-2003 2.
3740. *Platynota idaealis* (Wlk.) – 9B-VIII-2003 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.

3796. Phtheochroa waracana (Kft.) – 6-VII-2004 2.

HESPERIIDAE – Skippers

3910. Thorybes pylades (Scudder) (Northern Cloudywing) – 30-VI-2004 Adam Blake photo.
 3945. Erynnis icelus Scudder & Burgess (Dreamy Duskywing) – 28-V-2005 1.
 3961. Erynnis persius (Scudder) (Persius Duskywing) – 28-V-2005 1.
 4020. Hesperia comma assiniboia (Lyman) (Assiniboine Skipper) – 10-VIII-2003 adult photographed nectaring on *Hieracium* by Sylvia Glass.

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

4194. Pontia occidentalis (Reak.) (Western Checkered White) – 26-V-2002 1 SR, 10-VIII-2003 1.
 4195d. Pieris napi oleracea (Harr.) (Mustard White) – 12-VIII-2002 1, 28-V-2005 1 SR and 10-VI-2006 1.
 4209. Colias philodice Godt. (Clouded Sulphur) – 12-VIII-2002 SR, 10-VIII-2003 1 SR and 28-V-2005 4 SR.

LYCAENIDAE – Blues and Coppers

4262. Lycaena helleoides (Bd.) (Purplish Copper) – 4-IX-2004 Adam Blake photo.
 4275. Harkenclenus titus (F.) (Coral Hairstreak) – 30-VII-2004 Adam Blake photo.
 4285. Satyrium liparops (Leconte) (Striped Hairstreak) – 26-VII-2004 Adam Blake photo.
 4324. Incisalia polia Cook & Watson (Hoary Elfin) – 26-V-2002 1.
 4362b. Everes amyntula (Bdv.) (Western Tailed Blue) - 10-VI-2006 1.
 4363. Celastrina ladon (Cram.) (Spring Azure) – 26-V-2002 1 and 28-V-2005 2.
 4372a. Glaucopsyche lygdamus couperi Grt. (Silvery Blue) - 28-V-2005 2 SR.

NYMPHALIDAE - Fritillaries

4423. Polygonia faunus (Edw.) (Green Comma) – 26-V-2002 2 and 27-IX-2008 1.
 4432. Nymphalis antiopa (L.) (Mourning Cloak) – 26-V-2002 4 SR, 10-VIII-2003 1 SR.
 4433. Aglais milberti (Godt.) (Milbert's Tortoiseshell) – 26-IX-2004 1 SR.

- 4450c. *Speyeria cybele pseudocarpenteri* (F. & R. Chermock) (Great Spangled Fritillary) – 12-VIII-2002 1.
- 4459b. *Speyeria atlantis hollandi* (F. & R. Chermock) – 10-VIII-2003 1.
- 4459s. *Speyeria atlantis lais* (Edw.) (Northwestern Fritillary) – 12-VIII-2002 1.
4463. *Clossiana eunomia* (Esper) (Bog Fritillary) – 10-VI-2006 1.
- 4465b. *Boloria bellona* (Fabr.) (Meadow Fritillary) – 28-V-2005 1.
4475. *Boloria chariclea* (Schneider) (Purple Fritillary) – 12-VIII-2002 1 and 10-VIII-2003 1 and a photograph by Sylvia Glass.
- 4481.1. *Phyciodes cocyta* (Cram.) (Northern Pearl Crescent) – 22-VIII-2002 2.

SATYRIDAE – Browns and Alpines

4587. *Cercyonis pegala* (F.) (Common Wood Nymph) – 12-VIII-2002 1, 10-VIII-2003 1 SR.
4599. *Erebia epipsodea* Butler (Common Alpine) – 26-V-2002 200+ SR, 28-V-2005 1 and 10-VI-2006 30 SR.
4605. *Oeneis macounii* (Edw.) (Macoun's Arctic) – 30-VI-2004 Adam Blake photo and 28-V-2005 2.



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

4716. *Scoparia biplagialis* (Wlk.) – 6-VII-2004 1.
4773. *Petrophila kearfottalis* (B. & McD.) – 9A-VIII-2003 1.

4951. *Perispasta caeculalis* Zell. – 6-VII-2004 1.
4953. *Phlyctaenia coronata* (Hufn.) – 21-VI-2001 2, 6-VII-2004 2.
5004. *Loxostege sticticalis* (L.) (Beet Webworm) – 9A-VIII-2003 1, 6-VII-2004 1.
5017. *Loxostege cereralis* (Zell.) – 28-VI-2002 1.
5074. *Pyrausta fodinalis* (Led.) – 9A-VIII-2003 1, 9B-VIII-2003 1.
5099. *Udea itysalis* (Wlk.) – 9B-VIII-2003 1.
5299. *Acentria ephemerella* (Denis & Schiffermüller) – 9A-VIII-2003 1, 9B-VIII-2003 1.
A new species for Alberta (Pohl et al. submitted), though it has now been found in numerous places in the province.
5135. *Mecyna submedialis* (Grt.) – 12-VIII-2002 2.
- 5343a. *Crambus perlellus innotatellus* Wlk. – 27-VIII-2002 1.
5379. *Neodactria luteolella* Clem. (Mottled Grass-veneer Moth) – 6-VII-2004 1.
5391. *Chyroseuchia topiaria* (Zell.) (Cranberry Girdler) – 21-VI-2002 1, 9B-VIII-2003 1, 6-VII-2004 4 and 10-VI-2006 1.
5399. *Agriphila ruricolella* (Zell.) (Lesser Vagabond Sod Webworm Moth) – 12-VIII-2002 2, 9A-VIII-2003 1, 9B-VIII-2003 1.
- 5410-5417. *Pediasia* sp. – 27-VIII-2002 1, 6-VII-2004 2.
5416. *Pediasia abnaki* Klots – 27-VIII-2002 1.
5417. *Pediasia dorsipunctella* (Kft.) – 12-VIII-2002 2, 6-VII-2004 2.
5606. *Tetralopha asperatella* (Clem.) – 6-VII-2004 2.
5718. *Myelopsis subtetricella* (Rag.) – 21-VI-2002 5.
5721. *Apomyelois bistriatella* (Hulst) – 6-VII-2004 2.
5787. *Meroptera pravella* (Grt.) (Lesser Aspen Webworm) – 6-VII-2004 9.
5799. *Nephopterix basilaris* Zell. – 6-VII-2004 1.
5827. *Pyla aenigmatica* Heinr. – 6-VII-2004 1.
5829. *Pyla fusca* (Haw.) – 6-VII-2004 1.
5968. *Zophodia convolutella* (Hbn.) (Gooseberry Fruitworm) – 28-V-2002 4, 21-VI-2002 1 and 7D-V-2007 1.
6038. *Anerastia lotella* (Hbn.) – 27-VIII-2002 1.

PTEROPHORIDAE – Plume Moths

6118. *Amblyptilia pica* (Wlsm.) – 28-V-2002 1.

THYATIRIDAE – Thyatirid Moths

6235. *Habrosyne scripta* (Gosse) (The Scribe or Lettered Habrosyne) – 21-VI-2002 1, 6-VII-2004 1.
6240. *Euthyatira pudens* (Gn.) (Dogwood Thyatira) – 7B-V-2007 1.
6248. *Ceranemota albertae* Clarke (Alberta Lutestring) – 27-VIII-2002 2.

DREPANIDAE – Drepanid Moths

6251. *Drepana arcuata* Wlk. (Arched Hooktip) – 6-VII-2004 1.
6252. *Drepana bilineata* (Pack.) (Scalloped Hook-tip) – 28-V-2002 1.

GEOMETRIDAE – Inchworm or Geometrid Moths

6270. *Protitame virginalis* (Hulst) (Virgin Moth) – 21-VI-2002 1, 30-V-2004 1.
6290. *Macaria loricaria* (Evers.) (False Bruce Spanworm) – 6-VII-2004 4.
6344. *Macaria (Semiothisa) signaria* (Hbn.) (Pale Marked Angle) – 6-VII-2004 2, 26-V-2005 1, 28-V-2006 1 and 10-VI-2006 2.
6373. *Digrammia (Semiothisa) denticulata* Grt. (Striped Granite) - 27-V-2007 1.
6597. *Ectropis crepuscularia* (D. & S.) (Saddleback Looper) – 26-V-2002 1, 28-V-2002 4 and 7C-V-2007 1.
6598. *Protoboarmia porcelaria* (Gn.) (Speckled Carpet) – 6-VII-2004 1.
6651. *Lycia ursaria* (Wlk.) (The Bear or Stout Spanworm Moth) - 19A-IV-2000 1 and 7C-V-2007 1.
6666. *Lomographa semiclarata* (Wlk.) (Bluish Spring Moth) – 26-V-2002 1, 30-V-2004 1 and 27-V-2007 1.
6677. *Cabera erythemaria* Gn. (Yellow-dusted Cream Moth) – 9A-VIII-2003 1, 9B-VIII-2003 1.
6729. *Euchlaena johnsonaria* (Fitch) (Johnson's Euchlaena) – 6-VII-2004 2.
6737. *Euchlaena tigrinaria* (Gn.) (Mottled Euchlaena) – 6-VII-2004 3.
6743. *Xanthotype sospeta* (Drury) (Crocus Geometer) – 6-VII-2004 3.
6755. *Pero morrisonaria* (Hy. Edw.) (Lesser Umber) – 21-VI-2002 1, 6-VII-2004 2.
6796. *Campaea perlata* (Gn.) (Pale Beauty or Fringed Looper Moth) – 9B-VIII-2003 1.
6799. *Spodolepis substriaria* (Hulst) - 7B-V-2007 1 and 7C-V-2007 1.
6817. *Selenia alciphearia* Wlk. (Brown-tipped Thorn or Northern Selenia) – 28-V-2002 1.
6818. *Selenia kentaria* (G. & R.) (Kent's Geometer) – 28-V-2002 1.
6819. *Metanema inatomaria* Gn. (Pale Metanema) – 6-VII-2004 1.
6820. *Metanema determinata* Wlk. (Dark Metanema) – 6-VII-2004 1.
6822. *Metarranthis duaria* (Gn.) (Ruddy Metarranthis) – 21-VI-2002 1.
6838. *Probola amicaria* (H.-S.) (Friendly Probola) – 21-VI-2002 1.
6842. *Plagodis phlogosaria* (Gn.) (Straight-lined Plagodis)– 28-V-2002 1.
6844. *Plagodis alcoolaria* (Gn.) (Hollow-spotted Plagodis) – 6-VII-2004 1.
6863. *Caripeta divisata* Wlk. (Gray Spruce Looper) – 6-VII-2004 4.
6912. *Sicya macularia* (Harr.) (Pink-bordered Yellow) – 9B-VIII-2003 1.
6982. *Prochoerodes transversata* (Drury) (Large Maple Spanworm Moth) – 27-VIII-2002 2, 9A-VIII-2003 1, 9B-VIII-2003 1.
7009. *Nematocampa limbata* (Haw.) (Horned Spanworm Moth) – 27-VIII-2002 1.
7125. *Idaea rotundopennata* (Pack.) (Round-winged Wave) – 21-VI-2002 3.
7159. *Scopula limboundata* (Haw.) (Large Lace-border) – 6-VII-2004 1.
7166. *Scopula frigidaria* Mösch. (Frigid Wave) – 6-VII-2004 3.
7182. *Dysstroma citrata* (L.) (Dark Marbled Carpet) – 9B-VIII-2003 1.
7199. *Eulithis propulsata* (Wlk.) (Currant Eulithis) – 27-VIII-2002 1, 9B-VIII-2003 1.
7201. *Eulithis testata* (L.) (Chevron Moth) – 27-VIII-2002 1, 9A-VIII-2003 1.
7205. *Eulithis flavibrunneata* (McD.) – 27-VIII-2002 1, 9B-VIII-2003 1.
7257. *Hydriomena furcata* (Thunb.) (Common Highflyer) – 27-VIII-2002 2, 9A-VIII-2003 1, 9B-VIII-2003 2.
7313. *Spargania luctuata* (D. & S.) (White-bordered Black) – 6-VII-2004 1.
7316. *Perizoma basaliata* (Wlk.) (Square-patched Carpet) – 12-VIII-2002 1.

7329. *Anticlea vasiliata* Gn. (Variable Carpet) – 26-V-2002 4, 28-V-2002 4, 21-VI-2002 1, 7A-V-2007 2, 7C-V-2007 1, 7D-V-2007 1 and 3-V-2008 1.
7349. *Stamnodes topazata* (Stkr.) (Topaz Carpet) – 26-V-2002 1.
7370. *Xanthorhoe abrasaria* (H.-S.) – 1-VII-2004 2.
7390. *Xanthorhoe lacustrata* (Gn.) (Toothed Brown Carpet) – 26-V-2002 1.
7395. *Epirrhoe plebeculata* (Orange-winged Carpet) – 3-V-3008 2.
7396. *Epirrhoe sperryi* Herbule (Small Argent and Sable) – 28-V-2005 1.
7399. *Euphyia unangulata* (Haw.) (Sharp-angled Carpet) – 21-VI-2002 1, 6-VII-2004 1.
7408. *Zenophleps alpinata* Cass. – 27-VIII-2002 3, 9A-VIII-2003 1, 9B-VIII-2003 1.
7429. *Venusia pearsalli* (Dyar) (Pearsall's Wave) – 26-V-2002 1 and 7D-V-2007 2.
7445. *Horisme intestinata* (Gn.) (Brown Bark Carpet) – 6-VII-2004 1.
7459. *Eupithecia columbiata* (Dyar) – 28-V-2002 1.
7488. *Eupithecia tripunctaria* H.-S. – 6-VII-2004 1.
7489. *Eupithecia lariciata* – 21-VI-2002 1.
- 7520c. *Eupithecia satyrata dodata* Tayl. – 21-VI-2002 1 and 6-VII-2004 1.
7524. *Eupithecia cimicifugata* Pears. – 6-VII-2004 1.
7605. *Eupithecia ravocostaliata* Pack. (Great Variegated Pug) – 28-V-2002 2.
7637. *Cladara limitaria* (Wlk.) (Mottled Gray Carpet) – 28-V-2002 3, 19B-IV-2005 1, 7A-V-2007 1 and 7C-V-2007 2.
7639. *Cladara atroliturata* (Wlk.) (The Scribbler) - 7D-V-2007 2.
7640. *Lobophora nivigerata* Wlk. (Two-lines Aspen Looper) – 6-VII-2004 1.

LASIOCAMPIDAE – Tent Caterpillar and Lappet Moths

7687. *Phyllodesma americana* (Harr.) (Lappet Moth) – 28-V-2002 2, 7C-V-2007 1 and 7D-V-2007 1.

SATURNIDAE Large Silkworm Moths

7757. *Antheraea polyphemus* (Cram.) (Polyphemus Moth) – 21-VI-2002 1.

SPHINGIDAE – Sphinx Moths

7821. *Smerinthus jamaicensis* (Drury) (Twin-spotted Sphinx) – 21-VI-2002 1.
7822. *Smerinthis cerisyi* Kby. (One-eyed Sphinx) – 28-V-2002 1 SR, 21-VI-2002 1, 6-VII-2004 17 SR.
7824. *Paonias excaecatus* (J.E. Smith) (Blinded Sphinx) – 6-VII-2004 1.
7855. *Hemaris diffinis* (Bdv.) (Snowberry Clearwing) – 28-V-2005 1.

NOTODONTIDAE – Prominent Moths

7895. *Closteria albosigma* Fitch (Sigmoid Prominent) – 28-V-2002 1, 21-VI-2002 1.
7915. *Nadata gibbosa* (J.E. Smith) (White-dotted Prominent) – 6-VII-2004 3.
7922. *Pheosia rimosa* Pack. (Black-rimmed Prominent) – 6-VII-2004 2.
7924. *Odontosia elegans* (Stkr.) (Elegant Prominent) – 6-VII-2004 1.

7931. *Gluphisia septentrionis* Wlk. (Small Pebble or Common Gluphisia) – 21-VI-2002 1
 (19 SR), 6-VII-2004 1.
 7940. *Furcula scolopendrina* (Bdv.) (Poplar Kitten) – 21-VI-2002 2, 6-VII-2004 2.
 8007. *Schizura unicornis* (J.E. Smith) (Variegated Prominent) – 6-VII-2004 2.

ARCTIIDAE – Tiger Moths and others

8037. *Gnophaelia vermiculata* (Grt.) (Green Lattice or Police Car Moth) – 12-VIII-2002 1.
 8089. *Hypoprepia miniata* (Kby.) (Scarlet-winged Lichen Moth) – 9A-VIII-2003 1.
 8098. *Clemensia albata* Pack. (Little White Lichen Moth) – 6-VII-2004 1.
 8123. *Holomelina ferruginosa* (Wlk.) (Rusty Holomelina) – 27-VIII-2002 1, 6-VII-2004 1.
 8134. *Spilosoma congrua* (Wlk.) – 21-VI-2002 1, 6-VII-2004 1.
 8136. *Spilosoma dubia* (Wlk.) (Dubious Tiger Moth) – 21-VI-2002 1.
 8137. *Spilosoma virginica* (F.) (Virginian Tiger Moth or Yellow Woolly Bear) – 21-VI-2002 1, 26-IX-2004 last instar caterpillar.



Yellow Woolly Bear Caterpillar, September 26, 2004

8158. *Phragmatobia assimilans* Wlk. (Large Ruby Tiger Moth) – 28-V-2002 1.
 8162. *Platarctia parthenos* (Harr.) (St. Lawrence Tiger Moth) – 21-VI-2002 2, 6-VII-2004 8.
 8196. *Grammia parthenice* (W. Kirby) (Parthenice Tiger Moth) – 9A-VIII-2003 1.
 8197. *Grammia virgo* (L.) (Virgin Tiger Moth) – 6-VII-2004 2.
 8214. *Lophocampa maculata* Harr. (Spotted Tiger Moth) – 6-VII-2004 1.

NOCTUIDAE – Owlets or Noctuid Moths

8322. *Idia americalis* (Gn.) (American Snout) – 21-VI-2002 1, 9A-VIII-2003 1, 6-VII-2004 2.
 8362. *Phalaenostola metonalis* (Wlk.) (Pale Phalaenostola or Tufted Snout) – 12-VIII-2002 1.
 8356. *Chytolita petrealis* Grt. (Lesser Luteous Snout) – 21-VI-2002 4, 6-VII-2004 3.

8397. *Palthis angulalis* (Hbn.) (Angulated Snout Moth) – 6-VII-2004 1.
 8731. *Euclidea cuspidea* (Hbn.) (Pointed Grass Moth) – 28-V-2005 1.
 8738. *Caenurgina crassiuscula* (Haw.) (Clover Looper Moth) – 28-V-2002 1, 21-VI-2002 1. 30-V-2004 3, 28-V-2005 1 and 28-V-2006 6 SR.



A mating pair of *Caenurgina crassiuscula*, May 30, 2004

8803. *Catocala relicta* Wlk. (White Underwing) – 9A-VIII-2003 1.
 8805. *Catocala unijuga* Wlk. (Once-married Underwing) – 9A-VIII-2003 1.
 8817. *Catocala briseis* Edw. (Briseis Underwing) – 27-VIII-2002 1.
 8975. *Nycteola frigidana* (Wlk.) (Frigid Owlet or Willow Leaftier) - 7D-V-2007 1.
 9048. *Lithacodia albidula* (Gn.) (Common Midget) – 21-VI-2002 3, 6-VII-2004 1 and 10-VI-2006 1.
 9193. *Raphia frater* Grt. (The Brother) – 6 VII-2004 1.
 9207. *Acronicta innotata* Gn. (Unmarked Dagger Moth) – 6-VII-2004 1.
 9212. *Acronicta grisea* (Wlk.) (Gray Dagger Moth) – 6-VII-2004 1.
 9241. *Acronicta fragilis* (Gn.) (Fragile Dagger Moth) – 6 VII-2004 1.
 9359. *Apamea commoda* (Wlk.) (Southern Quaker) – 6-VII-2004 3.
 9261. *Acronicta impressa* Wlk. (Willow Dagger Moth) – 28-V-2002 1.
 9365. *Apamea scoparia* (Hufn.) (Red-winged Quaker) – 6-VII-2004 2.
 9369. *Apamea inficita* (Wlk.) (Inficita Quaker) – 12-VIII-2002 1, 27-VIII-2002 1, 9A-VIII-2003 1.
 9412.1. *Oligia subjuncta* (Sm.) (Short-cloaked Quaker) – 6-VII-2004 1.
 9419. *Oligia mactata* (Gn.) (Prairie Quaker) – 27-VIII-2002 1.
 9420. *Oligia illocata* (Wlk.) (Wandering Quaker) – 27-VIII-2002 1.
 9457. *Amphipoea prob. americana* (Speyer) (American Ear-moth) – 27-VIII-2002 2, 9A-VIII-2003 1.
 9549. *Enargia decolor* (Wlk.) (Angle-striped Sallow) – 27-VIII-2002 2, 9A-VIII-2003 1.
 9550. *Enargia infumata* (Grt.) (Lesser Angle-striped Sallow) – 9B-VIII-2003 1.
 9555. *Ipmorpha pleonectusa* Grt. (Even-lined Sallow) – 9A-VIII-2003 2.
 9578. *Hyppa contrasta* McD. (was *Hyppa* nr. *xylinoides*) (Common Hyppa or Cranberry Cutworm) – 6-VII-2004 1.
 9647. *Proxenus miranda* (Grt.) (Glistening Rustic) – 6-VII-2004 1.

9649. Proxenus mendosa McD. – 27-VIII-2002 1.
9656. Platyperigea montana (Bremer) (Civil Rustic) – 27-VIII-2002 1.
9874. Xylena curvimacula (Morr.) (Dot and Dash Swordgrass Moth) – 28-V-2002 2, 19A-IV-2005 1, 19B-IV-2005 2, 7C-V-2007 1 and 7D-V-2007 1.
9876. Xylena cineritia (Grt.) (Western Swordgrass Moth) – 19A-IV-2005 2, 19B-IV-2005 1 and 7D-V-2007 1.
9881. Homoglaea hircina Morr. (Goat Sallow) – 19A-IV-2005 2 and 19B-IV-2005 1.
9884. Litholomia napaea (Morr.) (Dark Gray Peasant) - 7C-V-2007 1 and 7D-V-2007 1.
9909. Lithophane tepida Grt. (Dowdy Pinion) - 7D-V-2007 1.
9917. Lithophane fagina Morr. (Beech Pinion) – 19A-IV-2005 1.
9952. Eucirroedia pampina (Gn.) (Scalloped Sallow) – 27-VIII-2002 1.
9962. Anathix puta (Grt. & Rob.) (Puta Sallow) – 27-VIII-2002 1, 9A-VIII-2003 1 and 9B-VIII-2003 1.
9993. Brachylomia populi (Stkr.) (Claoked Peasant) – 9A-VIII-2003 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 nimbosa (Gn.) (Stormy Arches) – 6-VII-2004 3
10276. Polia imbrifera (Gn.) (Cloudy Arches) – 21-VI-2002 1 and 6-VII-2004 2.
10280. Polia purpurissata (Grt.) (Purple Arches) – 27-VIII-2002 1.
10288. Polia detracta (Wlk.) (Disparaged Arches) – 6-VII-2004 1.
10297. Lacanobia atlantica (Grt.) (Atlanta Arches) – 21-VI-2002 1.
10298. Lacanobia radix (Wlk.) (Garden Arches) – 21-VI-2002 1.
10310. Papestra quadrata (Sm.) (Quadrata Arches) – 28-V-2002 3.
10370. Lacinipolia lustralis (Grt.) (Lustrous Arches) – 6-VII-2004 3.
10372. Lacinipolia anguina (Grt.) (Snaky Arches) – 21-VI-2002 1.
10397. Lacinipolia renigera (Steph.) (Bristly Cutworm Moth) – 27-VIII-2002 1, 9B-VIII-2003 1.
10405. Lacinipolia lorea (Gn.) (Bridled Arches) – 6-VII-2004 1.
10406. Lacinipolia olivacea (Morr.) (Olive Arches) – 27-VIII-2002 1.
10436. Aletia oxygala (Grt.) (Lesser Wainscot) – 27-VIII-2002 1.
10490. Orthosia revicta (Morr.) (Subdued Quaker) – 28-V-2002 1, 19A-IV-2005 3, 19B-IV-2005 1, 7C-V-2007 1 and 7D-V-2007 1.
10493. Orthosia segregata (Sm.) (Segregate Penman) – 28-V-2002 1, 19A-IV-2005 1, 7B-V-2007 1 and 7D-V-2007 1.
10495. Orthosia hibisci (Gn.) (Variable Penman or Speckled Green Fruitworm Moth) – 19A-IV-2005 1, 7C-V-2007 1 and 7D-V-2007 2.
10513. Egira dolosa (Grt.) (Greater Black-letter Dart) – 28-V-2002 4, 7C-V-2007 1 and 7D-V-2007 2.
10524. Nephelodes minians Gn. (Bronzed Cutworm Moth) – 27-VIII-2002 3, 9A-VIII-2003 1.
10563. Protorthodes oviduca (Gn.) (Ruddy Quaker or Island Stylus) – 21-VI-2002 7 SR.
10651. Agrotis venerabilis Wlk. (Venerable Dart) – 27-VIII-2002 2.
10676. Feltia herilis (Grt.) (Master's Dart) – 27-VIII-2002 1, 9B-VIII-2003 1.
10702. Euxoa divergens (Wlk.) (Divergent Dart) – 6-VII-2004 3.

10723. *Euxoa tristicula* (Morr.) (Three-marked Dart) – 6-VII-2004 1.
10755. *Euxoa declarata* (Wlk.) (Clear Dart) – 27-VIII-2002 1.
10801. *Euxoa ochrogaster* (Gn.) (Red-backed Cutworm Moth) – 12-VIII-2002 1, 27-VIII-2002 2, 9A-VIII-2003 1, 9B-VIII-2003 1.
10804. *Euxoa plagigera* (Morr.) (Plaited Dart) – 9A-VIII-2003 1.
10861. *Euxoa ridingsiana* (Grt.) (Riding's Dart) – 27-VIII-2002 1, 9A-VIII-2003 2..
10917. *Diarsia rubifera* (Grt.) (Rubifera Dart) – 27-VIII-2002 1.
10926. *Spaelotis clandestina* (Harr.) (Clandestine Dart) – 9A-VIII-2003 1, 6-VII-2004 4.
10929. *Eurois occulta* (L.) (Soothsayer Dart) – 27-VIII-2002 2.
10930. *Eurois astricta* Morr. (Great Brown Dart) – 9A-VIII-2003 1.
10944. *Xestia smithii* (Snellen) (Smith's Dart or Spotted Clay Dart) – 9B-VIII-2003 1.
10954. *Agnorisma bugrai* (Koçak) (Collared Dart) – 27-VIII-2002 3, 9A-VIII-2003 1.
10992. *Paradiarsia littoralis* (Pack.) (Labrador Dart) – 21-VI-2002 2, 6-VII-2004 2.
10996. *Cerastis salicarum* (Wlk.) (Willow Dart) – 28-V-2002 2, 19A-IV-2005 2, 19B-IV-2005 2, 7B-V-2007 1, 7C-V-2007 1 and 7D-V-2007 1.
11004. *Protolampra rufipectus* (Morr.) (Red-breasted Dart) – 9A-VIII-2003 1, 9B-VIII-2003 1.
11041. *Abagrotis placida* (Grt.) group – 9A-VIII-2003 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) is most similar to BL (50.00%) and least similar to AH (20.31%) and LS (20.40%). The habitats in JC and LS are quite different and each has different food plants. The aspen parkland and spruce woods habitats of JC are very different from those of the chokecherry/saskatoon/aspen communities at RS and thus each has a large range of different food plants. The habitats in the J.J. Collett Natural Area are very different from those in LS.

SUMMARY

Not counting undetermined species, varieties, and forms, the list for 2002 contained 151 species. The 2003 report brought the total up to 181 species and that for 2004 to 255. The 2008 report, which included all research up to 2007, brought the total up to 283 species. While this may seem an impressive number, it is felt that, with further study, the total can be easily doubled. To put things into perspective, it is thought that there are over 1000 macromoths plus 1000 micromoths in the province.

Of the 12 major areas involved in the present study, three species of moths were found only in the J.J. Collett Natural Area - *Lita sexpunctella*, *Spodolepis substriaria* and *Hemaris diffinis*.

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

Sincere thanks are extended to members of the J.J. Collett Foundation, especially Sylvia Glass, Gail Hughes and Jack Surbey for encouraging me to document the Lepidoptera of the J.J. Collett Natural Area, making me an Honorary Member of their group, and providing a key for vehicle access to the parking lot. Sincere thanks are extended to Gary Anweiler and Chris Schmidt for verifying the macromoths and Greg Pohl identified, or verified, some of the micromoths. The following individuals are thanked for identifications of certain group: Dr. George Balogh (Eupithecia), Dr. Jean-François Landry (Coleophora), and Doug Macaulay (Pterophoridae). Jason Dombroskie provided help with some of the Tortricidae. Even though others helped, I personally take responsibility for the identification of the species mentioned in this report. Felix Sperling and Danny Shpeley facilitated the study of specimens in the Bowman Collection of the Strickland Museum, and Greg Pohl did the same for the Northern Forest Research Centre Entomology Collection. Ernest Mengersen is thanked for allowing access to the Entomology Collection at Olds College. Adam Blake is thanked for providing a number of 2004 photo records.

LITERATURE CITED

- Bienek, G. K. 1974. A manual for an elementary study on natural resources and ecology at the Environmental Center near Lacombe, Alberta with an index of the flora and fauna. Alberta Department of the Environment and Alberta Wildlife Foundation. 153 pp.
- Bird, C. D. 2003. Lepidoptera of the J.J. Collett Natural Area, a preliminary report. Report prepared for Alberta Parks and Protected Areas. 10 pp.
- Bird, C. D. 2004. Lepidoptera of the J.J. Collett Natural Area, a second report. Report prepared for Alberta Parks and Protected Areas. 11 pp.
- Bird, C. D. 2005. Lepidoptera of the J.J. Collett Natural Area, 2002-2004. Report prepared for Alberta Parks and Protected Areas. 15 pp.
- Bird, C. D. 2006. Lepidoptera of the J.J. Collett Natural Area, 2002-2005. Report prepared for Alberta Parks and Protected Areas. 17 pp.
- Bird, C. D. 2007. Lepidoptera of the J.J. Collett Natural Area, 2002-2006. Report prepared for Alberta Parks and Protected Areas. 18 pp.
- Bird, C. D. 2008. Lepidoptera of the J.J. Collett Natural Area, 2002-2007. Report prepared for Alberta Parks and Protected Areas. 18 pp.
- Bowman, Kenneth 1951. An annotated list of the Lepidoptera of Alberta. Can. J. Zoology 29: 121-165.
- Hodges, R. W. (ed.). 1983. Check List of the Lepidoptera of America North of Mexico. E.W. Classey Ltd. & The Wedge Entomological Research Foundation.
- Leszczynski, J. 1987. J.J. Collett Natural Area management plan. Natural Areas Program, Alberta Forestry, Lands and Wildlife. 19 pp.

- Munsell, D. 1980. Collett Natural Area. Alberta Natural Areas Program, Resource Inventory for proposed Educational Natural Areas. 33 pp.
- Pohl, G., C. D. Bird, J-F. Landry & G. Anweiler. 2005. New records of Microlepidoptera for Alberta. J. Lep. Soc. 59(2): 61-82.

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/>.

Illustrations of Alberta macromoths can be found at a site put together by D. Lafontaine and J. Troubridge called "The Moths of Canada":
http://www.cbif.gc.ca/spp_pages/misc_moths/phps/mothindex_e.php.

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>.

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>). As many of the species also occur in Alberta, these images can be quite helpful

USEFUL BOOKS ON MOTHS

- Covell, Charles V., Jr. 1984. A Field guide to Moths; Eastern North America. Houghton, Mifflin Co., Boston, New York.
- Handfield, Louis. 1999. Le Guide des Papillons du Quebec. Vol. 1. Broquet, Boucherville, QC.
- Ives, W.G.H. & H.R. Wong. 1988. Tree and Shrub Insects of the Prairie Provinces. Can. Forestry Serv., Northern For. Centre, Inf. Rept. NOR-X-292.

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.
3 May 2008 – Diurnal, annual spring hike, 52.55, 113.64, 890 m.
27 September 2007 – Diurnal, annual fall hike, 52.55, 113.64, 890 m.

PLATE 1. Some J.J. Collett Natural Area Lepidoptera.

