

Additions and Corrections to the Alberta Lepidoptera List, 2015

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Since the Checklist of the Lepidoptera of Alberta (AB) was published by Pohl et al. (2010) we have been reporting additions and corrections annually here in the ALG News (Pohl et al. 2011, 2012, 2013; Pohl 2014). This year we report 16 new records, and one historical published record that we had overlooked. We also confirm four previously unverified records, and remove three species from the AB list. Vouchers are deposited in the Canadian Forest Service collection in Edmonton, AB (NFRC), The Canadian National collection of Arthropods (CNC), and the personal collection of GRP (GRP), as noted. For species confirmed by DNA barcoding, the collection data, cytochrome oxidase I (COI) barcode sequence information, and an image for each specimen are available in the Barcode of Life Data Systems (BOLD, www.boldsystems.org) (Ratnasingham and Hebert 2007) in the public dataset, "Alberta Lepidoptera List, 2015 Update" at DS-ALL2015 (dx.doi.org/10.5883/DS-ALL2015). The total number of AB species now stands at 2481 reported species.

Gracillariidae

73.5 *Caloptilia melanocarpae* (Braun, 1925). New record.

A specimen in the NFRC, collected in the Kananaskis area by Christi Jaeger on 28 August 2009, has been identified via COI barcode (Accession: NFRC-2014-00493; Barcode Index Number: BOLD:ACR7098). Photo below:



Argyresthiidae

103.5 *Argyresthia quadristrigella* Zeller, 1873. New record.

A specimen of this introduced species was collected in Strathcona County, in a vehicle, immediately after a visit to a tree nursery in the vicinity, by GRP on 24 May 2004. It was identified via COI barcode, and is deposited in the GRP collection (Accession: NFRC-2014-00525; Barcode Index Number: BOLD:AAI4414). Photo below:



Elachistidae

159.5 *Annettenia eremonoma* (Braun, 1948). New record.

A specimen collected near Sherwood Park on 14 June 2010 by GRP was identified by COI barcode (Accession: NFRC-2014-00529; Barcode Index Number: BOLD:ABA4182). It is in the GRP collection.

161.5 *Elachista patriodoxa* Meyrick, 1932. New record.

This species is known from a few specimens collected near Sherwood Park, identified via COI barcode (Accession: NFRC-2014-00527; Barcode Index Number: BOLD:ABA4763). Specimens are in the NFRC and GRP collections.

Photo right:



167.5 *Elachista lamina* Braun, 1948. New record.

Many specimens were collected by the Biodiversity Institute of Ontario (BIO) along the Red Rock Parkway in Waterton Lakes National Park, in June 2012 and 2013. An additional specimen was collected by BIO at Elk Island National Park, in a Malaise trap on the Wood Bison Trail, on 3 July 2012. They were identified via COI barcode. Specimens are deposited at BIO and NFRC.

169.5 *Elachista perniva* Kaila, 1997. New record.

A specimen in NFRC collected at the Onefour Bioblitz on 27 June 2001 by Jason Machney, Doug Macaulay, and GRP was identified by COI barcode (Accession: NFRC-2014-00120; Barcode Index Number: BOLD:ACG7125). It is deposited in the NFRC.

Blastobasidae

232.5 *Asaphocrita aphidiella* (Walsingham, 1907). New record.

This boreal species has remained unidentified in AB collections for many years; an AB specimen was identified recently via COI barcode (Accession: NFRC-P-2012-03401; Barcode Index Number: BOLD:AAC4277). Other specimens are known from Lac La Biche, Wagner Bog, and Sherwood Park, where it is common in midsummer. Specimens are in the NFRC and GRP collections. Photo below:



Gelechiidae

243.1 *Metzneria paucipunctella* Zeller, 1839. New record.

This species was listed as "probable" for AB, but we overlooked the fact that this species was intentionally introduced to the province for biocontrol of knapweed (*Centaurea* spp.) in 1985 (Bourchier et al. 2002). We list it as a stray, as there is no solid evidence that it has become established in the province.

327.5 *Gnorimoschema foliatum* Povolný, 2003. New record.

Several specimens from the AB Rockies have been identified by VN, as follows: 1 male, AB: Kootney plains, Whirlpool point, 26 July 2006, BC Schmidt & JJ Dombroskie; 4 gender unknown, *ibid*; 7 July.2007, M Schwartzfeld (one of the latter is in the Barcode of Life database as Accession: JD4079; Barcode Index Number:AAI5516). They are deposited in the CNC.

331.5 *Gnorimoschema semicyclionella* Busck, 1903. New record.

Three specimens from the southern AB grasslands have been identified by VN, as follows: 1 male, AB: Lethbridge, 20 July 1921, HL Seamans; 1 male, AB: Sandy Point Campground, 24 August 1985, J-F Landry; Tolman Briske, 10 August 2002, GGA (Accession: NFRC-2014-00491; Barcode Index Number:AAI5490); 1 female, AB: Pakowki dunes, 15 August 2006, BC Schmidt. Specimens are deposited in the CNC and NFRC.

334.5 *Tuta insularis* Povolný, 2001. Correction.

The AB record by Nazari & Landry (2012) is erroneous, based on misidentified specimens of *T. elaborata* Povolný, 2001 from Kleskun Hills near Grande Prairie; and from the Lost River Valley near Onefour (CNC). These are the only known records of the genus *Tuta* in Canada. Thus *T. insularis* is relegated to #E010.5 on the erroneous list, and *T. elaborata* is added to the AB list at #334.4.

338.5 *Scrobipalpus sacculicola* (Braun, 1925). New record.

A specimen from Sherwood Park, collected on 17 June 2010 by GRP, was identified via COI barcode (Accession: NFRC-2014-00539; Barcode Index Number: BOLD:ABY8834). It is deposited in the GRP collection. This represents a range extension from ON. Photo below:



Tortricidae

425 *Acleris flavivittana* (Clemens, 1864). Confirmation of uncertain record.

A specimen from Wagner Bog, collected by Chris Schmidt on 12 April 1999 was identified via dissection recently by GRP. It is the first confirmed record for AB. It is deposited in NFRC.

487 *Choristoneura freemani* Razowski, 2008. Name change.

This is a replacement name for *C. occidentalis* Freeman, 1967. The latter was rendered unavailable when an older African species bearing the *occidentalis* name [*Cacoecia* [= *Archips*] *occidentalis* Walsingham, 1891) was transferred into the genus *Choristoneura* (Razowski 2008, Gilligan and Brown 2014).

553 *Apotomis paludicolana* (Brower, 1953). Move to erroneous species list.

This species was reported from AB by Pohl et al. (2010). However, AB material has been redetermined as #554 *A. spinulana* (McDunnough, 1938) via COI barcode (Accession: NFRC-P-2004-006006; Barcode Index Number: BOLD:ABZ6958). *Apotomis paludicolana* is relegated to #E018.5 on the erroneous list.

635 *Eucosma vernalana* (McDunnough, 1942). Remove from the list.

This taxon was synonymized with #634 *E. rupestrana* (McDunnough), by Wright and Gilligan (2015). A specimen of *E. rupestrana* from Hailstone Butte can be found in the Barcode Of Life database as follows: Accession: NFRC-2014-00845; Barcode Index Number: BOLD:AAI4584.

730.5 *Epinotia myricana* McDunnough, 1933. New record.

A specimen collected near Sherwood Park by GRP, on 15 Sept 2008, has recently been identified as this species via dissection (a tissue sample did not yield usable DNA for barcoding). It is deposited in the GRP collection. This is a major range extension from ON and QC for this species. It is very similar to the Palearctic species *E. caprana* (Fabricius, 1798), as well as the holarctic species *E. solandriana* (Linnaeus, 1758) and *E. trigonella* (Linnaeus, 1758). There may well be additional western Canadian specimens of *E. myricana* in collections, misfiled under the latter two names.

755.5 *Epinotia septemberana* Kearfott, 1907. New record.

This species was collected by Doug Macaulay and Dave Lawrie, in the Richardson River area south of Lake Athabasca, on a biophysical inventory organised by Alberta Environment in 1999 (Schmidt and Pohl 2000). The

specimens (in the NFRC) had remained unidentified until now. Three specimens were collected on 22 August 2000, at an MV light set up at a lake between the Richardson River Dunes and Athabasca Dunes (58.0725°N, 110.9060°W). A fourth specimen was collected nearby on the same day, at the junction of the Ft. Chipewyan winter road and the Richardson River (58.0585°N, 110.9290°W). These specimens were identified recently by GRP, and represent a western range extension from ON (Brown 1980). A specimen from Rennie, MB has also been identified recently in the NFRC; this species is probably widespread in the northern boreal forest across western Canada.

Schreckensteiniidae

785.5 *Schreckensteinia felicella* (Walsingham, 1880). New record.

A specimen was swept from vegetation along Blakiston Creek in Waterton Lakes National Park, on 17 July 2013, by David Langor and GRP. It was confirmed via COI barcode (Accession: NFRC-2014-00012; Barcode Index Number: BOLD:AAG9109). It is deposited in the NFRC.

Pterophoridae

801.5 *Stenoptilia mengeli* Fernald, 1898. New record.

This is a northern species, collected in AB for the first time at Fidler-Greywillow Provincial Wildland Park, on Lake Athabasca. It was collected at a UV light sheet, on 23 July 2001, by Dave Lawrie. It was identified via COI barcode (Accession: NFRC-P-2004-005330; Barcode Index Number: BOLD:AAF3618). It is deposited in the NFRC.

Pyralidae

924.5 *Homoeosoma oslarellum* Dyar, 1905. New record.

A specimen collected along the Chief Mountain Highway in Waterton Lakes National Park, on 8 July 2005 by GGA, has been identified as this species via COI barcode (Accession: NFRC-2014-00441; Barcode Index Number: BOLD:AAC4058). It is deposited in the NFRC.

Nymphalidae

1176.5 *Speyeria idalia* (Drury, 1773). New record.

This totally unexpected new record came from near Etzikom, collected by GGA. He collected a worn specimen of this species, known as the Regal Fritillary, on a thistle flower in dry prairie habitat, at 49.470°N 111.133°W, on 28 August 2015. This is a species associated with the Tallgrass Prairie of the American Midwest. The nearest record in Canada is from southeastern SK. We are

treating this species as a stray in AB, as it is in MB and SK. The specimen is deposited at the University of Alberta Strickland Collection. Ventral view below, dorsal on front cover (p. 1).



Geometridae

E087.5 *Chlorochlamys chloroleucaria* (Guenée, [1858]). Correction.

This species was added to the Erroneous AB list by Pohl (2014), but was incorrectly placed in the genus *Nemoria* there. It was described in *Nemoria*, but later moved to *Chlorochlamys*.

Noctuidae

1801.5 *Acronicta fallax* (Herrich-Schäffer, 1854). New name.

The species *A. geminata* (Smith) was synonymized with *A. fallax* by Schmidt et al. (2014). Populations in the Prairie Provinces of Canada are larger and darker than more southeasterly populations, but COI barcodes fall within the range of *A. fallax*, so it is considered to be simply a geographic form of *A. fallax*.

1834 *Sympistis umbrifascia* (Smith, 1894). Confirmation of uncertain record.

The record by Crumb (1956) was treated by Pohl et al. (2010) as "unconfirmed." A specimen was located by JdW in the USNM, from "Calgary, NWT" (when AB was still part of the NWT). Photo on following page (p. 9).



1970 *Bellura gortynoides* Walker, 1865. Correction.

All western Canadian records, including AB records reported by Pohl et al. (2010), have been corrected to *B. vulnifica* (Grote, 1873). *Bellura gortynoides* occurs in Canada only in Carolinian Forest habitat in southwestern ON. Thus *B. vulnifica* is added to the AB list at #1970.5, and *B. gortynoides* is moved to the erroneous list at #E141.5.

1979 *Xylena brucei* (Smith, 1892). Confirmation of uncertain record.

The record by Crumb (1956) was treated by Pohl et al. (2010) as "unconfirmed". As in *S. umbrifascia*, an old specimen was located by JdW in the USNM, from Calgary.

2311 *Eueretagrotis sigmoides* (Guenée, 1852). Confirmation of uncertain record.

This was also listed as "unconfirmed" by Pohl et al. (2010) based on the distribution given by Crumb (1956). A voucher was found by JdW in the USNM from "Ft. Calgary, N.W. Brit. Columbia, VII.21.96". This is assumed to be from Calgary, AB. This species is known from SK to NB, but does not occur in BC.



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