ADDITIONS TO THE LIST OF MANITOBAN LEPIDOPTERA.

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A good many fresh species and some few new to science have been taken in Manitoba since the publication of my list in 1904—additional to that by Mr. A. W. Hanham, then residing in Winnipeg, which appeared in this magazine a few years previously. Before giving my record I may make some remarks upon the appearance, disappearance and apparent migration of some species, which, I trust, will prove interesting.

When first I began to collect here, about 25 years ago, *Pieris protodice*, Bd. and Lec., was the only white butterfly and was abundant. Then a few stragglers of *P. rapæ*, Linn., appeared, and the number of *protodice* became gradually less and less; now it has entirely disappeared, and we have to wage war with *rapæ* in order to grow a few members of the cabbage family in our gardens. Last year this species made a clean sweep where pyrethrum powder was not used. In my own garden it fell back upon a bed of mignonette, greatly to its detriment. In England *rapæ*, with its relative *brassicae*, is kept in check by a small ichneumon fly; here it seems to be unmolested, and it seems desirable to import the parasite.

Colias cazonia, Stoll., appeared here some years ago and in some numbers. I caught two and saw many more flitting over growing grain, where they could not be followed; none have been seen since.

Vanessa Californica, Bdv., has appeared twice at dates several years apart. *Pyrameis Huntera*, Fabr., is also of very uncertain occurrence.

Some of the *Theclas* used to be plentiful—now they have all disappeared. Likewise many of the *Pamphilas* that I used to take are no longer to be found.

Argynnis Edwardsii, Reak., a green-winged species, appeared in numbers some years ago. I took a couple of dozen, and could have taken more. It disappeared as suddenly as it came, and not one was seen during the following season.

With both butterflies and moths—especially the latter—there seems to be a gradual and constant migration from the south west, northwards as far as Manitoba, but very little movement from due east to the westward, or *vice versa*. The cool, high land north of Lake Superior seems to form a barrier to migration from Ontario, and the bare, treeless plains to our west are an obstacle to Albertan species. Still, some forms new to science occasionally appear, and it is a puzzle to know whence they came. In the south-eastern part of this Province there is much roughly-wooded

land, mostly unfit for agriculture, and in it I do not think there is a single collector. The few we have are nearly all in the central portion of the Province, and I alone am near the southern boundary.

I have taken a few specimens during the last two years of *Rhizagrotis perolivalis*, Smith, a species which was, I believe, originally taken near Calgary in Alberta, and during the same years some six or seven examples of *Xylophasia Miniota*, Smith, came to my sugared trees during the early part of June. *Miniota*, where the first specimens were taken that reached Dr. J. B. Smith, and hence the name, is about the centre of the western boundary of Manitoba. The species is a large and conspicuous one, as large as *Hadena devastatrix*, Brace, and one that could not possibly be overlooked by a collector. It is strange that it should simultaneously appear in two places so far apart.

Euxoa focinus, Smith, was taken by me for the first time in 1906.

In, I think, 1884 *Deilephila lineata*, Fabr., was very plentiful, so much so that I only took the trouble to catch two or three. I have not seen it since. The other species, *D. Chamænerii*, Harris, is generally to be seen at bloom in the early summer.

In 1905 I took at sugar about two dozen of *Dargida procinctus*, Grote, prior to which date I have only taken a couple; in 1906 I did not see one. Whole genera have disappeared, but this may in great measure be attributed to the destruction of food-plants by cultivation and by cattle. I have not taken an *Hydrœcia* for some years, thanks to my sheep having cleared up all the weeds in the scrub and in the paddocks round about my house. The *Leucanias* and the *Plusias* have also been very scarce lately—probably from the same cause. I do not think I have taken an Arctian imago or seen a larva for the last two or three years; the same may be said of the genus *Schinia*.

The *Chorizagrotis* genus has, on the other hand, come out strongly. I have now taken six out of the eight species listed; during the earlier years of my collecting I rarely met with it. The first species to be captured was *C. introferens*, Grote, and the others followed. With regard to *Geometers* the case is somewhat different; they may be here, but the weather may be unfavourable for them to come to light or to be much on the wing. The same with the *Micros*; I have taken hardly any for the last two seasons. In 1906 our few species of *Sphingidæ* seemed to have disappeared; perhaps owing to the weather, light had no attraction; at all events, I did not get any, while in some previous seasons they were a perfect nuisance, as I had to kill them off my windows before I could take other things that I wanted.

I have been exchanging a little lately with brother collectors in Saskatchewan and Alberta, and have been much struck by the apparent differences between specimens of the same species taken here and those from localities 500 to 800 miles further west. So much is this the case that Manitoban species, in some instances, are hardly to be recognized at first from descriptions made from western examples.

Besides those mentioned in the following list, I have some six or seven Noctuids which have been seen by Dr. J. B. Smith, and regarding whose names—if they have any—he will give no opinion without further material; among these are two *Polias* and some *Euxoas*. Some of the names in my list are taken from Dr. Fletcher's Record in the Reports of the Entomological Society of Ontario.

I wish again to thank Dr. J. B. Smith for his unvarying patience and kindness in identifying species for us poor collectors out in the wild western country. Where no locality is given in the following list, the species was taken upon my own farm:

Acronycta cretata, Sm.—At sugar in the early part of July. I have taken several specimens during the last three or four years, but never in any large numbers.

Acronycta speratina, Sm.—I understand that Dr. Smith now says that what we had formerly named *sperata*, Grote, is a new species.

Hadena cerivana, Sm.—Several during the last few years, both at bloom and at sugar, but never abundant.

Hadena exhausta, Sm.—Several at sugar in the beginning of July.

Hadena Barnesii, Sm.—Aweme (Criddle), Aug. 22.

Xylophasia Miniota, Sm.—Several at sugar in June; also at Miniota.

Homohadena fifia, Dyar.—More abundant here than the paler *badistriga* with the white secondaries. At light during the summer.

Ancocnemis iricolor, Sm.—At light, Aweme, Sept. 9.

Rhyncagrotis scopeops, Dyar.—Or something very much like it. Several taken with *alternata* at sugar during August.

Rhyncagrotis minimalis, Grote.—At sugar in August; rare.

Rhyncagrotis anchocelioides, Guen.—Formerly listed as *cupida*.

Agrotis aurulenta, Sm.—Aweme, June 16, 1904.

Noctua substrigata, Sm.—Rounthwaite (Marmont).

Chorizagrotis inconcinna, Harv.—Several of this variable species flying about currant bloom, etc., in June.

Rhizagrotis perolivalis, Sm.—Two taken for the first time in 1906 at bloom.

- Euxoa focinus, Sm.—Two taken at sugar, July 20; first appearance.
- Euxoa acutifrons, Sm.—Two taken at sugar, Aug. 26, 1904, and Sept. 10, 1905.
- Anytus profundus, Sm.—With *privatus* at sugar, occasionally.
- Fishia Yosemite, Grote.
- Mamestra juncimacula, Sm.—At sugar in July; scarce.
- Mamestra Columbia, Sm.—Listed as *M. meditata*, Grote.
- Mamestra Tacoma, Streck.—Sometimes rather plentiful at bloom.
- Mamestra cuneata, Grote.—One only, at sugar, July 4, 1904.
- Mamestra acuterrima, Sm.—At sugar in July; sometimes plentiful.
- Mamestra pensilis, Grote.—Listed as *vicina*, Grote.
- Mamestra larissa, Grote.—Listed as *anguina*, Grote.
- Leucania multilinea, Walk.—Two or three taken at light.
- Xylina innominata, Sm.—Listed as *signosa*, Grote.
- Xylina merceda, Sm.— } Plentiful at sugar of late years in Sept.
- Xylina ancilla, Sm.— } and Oct.
- Papaipema Harrisii, Grote.—One only, at sugar.
- Orthosia Americana, Morr.—One at sugar, Aug. 8, 1904.
- Orthosia helva, Grote.—One at sugar, Sept. 7, 1904.
- Orthosia verberata, Sm.—At sugar occasionally with *bicolorago*, Guen.
- Nycterophaeta luna, Morr.—Aweme, June 23.
- Pseudotamila Avemensis, Dyar.—Aweme.
- Melicleptria sexata, Sm.—Aweme.
- Pæctes oculatrix, Guen.—Aweme, June 20.
- Aletia argillacea, Hubn.—One at sugar, Sept. 30, 1905.
- Drasteria distincta, Neum.—One or two occasionally.
- Syneda Hudsonica, G. & R.—Listed as *Melipotis limbolaris*, Geyer.
- Catocala crataegi, Saund.—Fairly abundant at sugar.
- Catocala abbreviatella, var. Whitneyi, Dodge.—Rare; only two taken.
- Catocala cerogama, Guen.—Two taken for the first time, Aug. 18, 1906.
- Catocala verecunda, Hulst.—Rare.
- Catocala relictæ, Walk.—The white form *bianca*, Hy. Edw., and a very dark form, almost, if not quite, as dark as the Pacific Coast form *elda*, Behr., have been fairly plentiful during the last few years.
- Bomolocha lualba, Sm.—About the middle of July, 1905, on the wing about cherry, saskatoon, etc., bushes, with *Chytolita petrealis*, etc.
- Prionapteryx nebulifera, Stephen.—Aweme.