ADDITIONS TO THE LIST OF MANITOBA BUTTERFLIES, WITH NOTES ON OTHER SPECIES.

BY A. W. HANHAM, WINNIPEG, MAN.

Euptoieta claudia, Cram.—This species had never even been observed in previous years, but this season appeared plentifully at Bird's Hill in June, and again in August (16th) and September (4th); it was also met with at St. James, just outside the city limits. The species is usually common in prairie districts farther west.

Melitea Harrisii, Scud.—Taken at Bird's Hill on July 1st, 1899. This season I came across a larva in the act of pupating, but missed the butterflies.

Chionobas alberta.—I captured one specimen at Bird's Hill on May 24th, 1899. This was my first experience with a *Chionobas* "on the wing" up here, and I nearly missed it (being a case of mistaken identity).

Thecla irus, Gdt., and *Thecla augustus*, Kirby.—Bird's Hill, May 24th (and later), 1899, not uncommon. None seen on same date this season.

Thecla titus, Fabr. — One specimen at Bird's Hill this season (August 16); not uncommon at Brandon.

Chrysophanus dione, Scud.—One specimen at Silver Height on July 22nd, 1898. Mr. Boger took a nice lot this season at Brandon.

Lycæna rustica, Edw.—Bird's Hill, June 8th and 10th, 1899, and May 24th this year, fairly plentiful locally. Also taken at Aweme in 1899.

Pieris protodice, Bd.-Lec.—Bird's Hill, this year, in June and September. Though generally common in the West, I have not yet taken this species nearer the city than Bird's Hill.

Pamphila Manitoba, Scud.—Earlier captures were all the var. *Assiniboia*, Lyman; this season on August 16th, at Bird's Hill, I took the typical form in some abundance.

Pamphila hianna, Scud.—Bird's Hill, taken June 8th and 10th, 1899, and one specimen this year on May 24th. It was a plentiful species last June (1899) in the Rounthwaite district.

The season of 1900 opened earlier than usual in Manitoba; on May 24th the early "skippers" and "hair-streaks" appeared to be over; on that date *Lycæna rustica* was out, some being quite worn, and on my next visit in June none were visible. I also took *Lycæna sæpiolus*. Ordinary seasons neither of these "blues" would be on the wing much

before the middle of June, the latter flying into July. *Vanessa Milbertii* and *Pyrameis atalanta* and *cardui* were unusually abundant during the spring and early summer.

Argynnis nevadensis, Edw.—I captured my first specimen of this handsome "fritillary" on June 25th at Carberry. Mr. Boger reports it to have been plentiful in June at the Experimental Farm, Brandon. It has not turned up yet at Winnipeg.

Neonympha canthus, Bd.-Lec.—Some I took at Carberry on June 26th appeared to be unusually pale for fresh specimens.

Erebia discoidalis, Kirby, and *Erebia epipsodea*, Butl.—Specimens of both these species have been received from Mr. Dennis, of Beulah, taken there in 1899.

Hipparchia Ridingsii, Edw.—Mr. Norman Criddle, of Aweme, takes this species in his district.

Chionobas varuna, Edw.—In June, 1899, Mr. Marmont, of Rounthwaite, and I took a good series on the slopes and summit of the Brandon Hills, and in the sandy district near Treesbank and that of Aweme it occurred quite plentifully. Some examples of *Alberta* were captured during my visit to his place.

Chionobas jutta, Hbn.—Through the kindness of the Messrs. Criddle and their guidance from Aweme into the Douglas swamp (some 10 or 12 miles), we were able to see this fine butterfly on the wing. The date, June 18th (1899), however, was a little too late, and few of those netted were worth keeping. I think the specimens were somewhat larger and more brightly coloured than those from the Gomin swamp, Quebec.

Pieris napi, Esp.—Early in May "whites" were plentiful in the vicinity of my house, and I supposed that they were *rapæ*, which is our common *Pieris* now. Examining my small boy's captures later on, I was surprised to find that he had been taking the above species, usually a rarity here, and that there was not a single *rapæ* in the lot.

Anthocharis olympia, Edw.—Examples of this species have been taken by Mr. N. Criddle, and by Mr. Robinson, of the Experimental Farm, Brandon.

Colias eurytheme, Bdv.—This season has been noted for the abundance of "oranges"; they have been common from May into October. In 1899, I did not see one the whole season. "Albinos" were plentiful in June; on the 27th at Carberry this form predominated; unfortunately, few were any good.

Pamphila ottoe, Edw.—I have not met with this species at Winnipeg since my captures in 1895, but it turned up at Brandon this year, having been taken by Mr. Robinson.

Pamphila uncas, Edw.—On June 27th I got three beautifully fresh specimens at Carberry. They were all taken off milkweed. Also captured this year at Brandon by Messrs. Boger and Robinson.

Pyrgus tessellata, Scud.—The previous record was not my capture, and I had never seen the species in the district until this year, when I bagged several at Bird's Hill on June 13th, and at Carberry on the 27th I got two more.

CORRECTIONS.

BY A. RADCLIFFE GROTE, A. M.

To prevent misconception of my paper in the October number of the CANADIAN ENTOMOLOGIST, on the Neuration of Lepidoptera, there should be added to the statement on p. 291, line 2 from bottom of the page, the words: "On the hind wings." The Hesperiadæ have two anal veins on the secondaries, the Papilionidæ only one remaining.

Also, at the close of the article, p. 292, the words "of the fore wings" should be intercalated, in the concluding sentence, after "internal vein." I am writing of the last short downwardly curved veins of the Papilionidæ' primary wing, and which Dr. Chapman regards as homologous with the fourth anal, not the "third," as I have given in the paper. Upon this difference in the appearance and retention of the anal veins of the primaries, I have founded the theory of the diphyletism of the diurnals. The Papilionidæ will thus have lost the third anal of primaries and retained the fourth, which is free and joins the internal margin. The Hesperiadæ have generally retained a remnant of the third anal pupal vein, in the shape of a fork to second anal, which is absorbed in many brush-footed butterflies, but is determinate in the Limnadiidæ, Libytheidæ and Nemeobiidæ, while the fourth anal of the fore wings has become lost.

I finally would mention that the authorities give Borkhausen as author to *Hydroecia nictitans*, not Linné, as I had written without having consulted the earlier references to the species. The work of Duponchel should be cited: "Lep. Eur.," not "Lep. Ent.," as printed in my last paper on "Types of Noctuid Genera."