NOTES ON THE LEPIDOPTERA OF THE NORTHERN OKANAGAN

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During a residence of several years' duration in the vicinity of Armstrong, in the Northern Okanagan, a small collection of Lepidoptera was made by the writer, and the following brief notes may be of interest to those who have not had the opportunity of visiting this favoured district and obtaining first-hand knowledge of its rich insect fauna.

Travelling northwards from Vernon, a point is reached about 12 miles from that city, where the open range country ends rather abruptly and the hills are principally forest-clad, with here and there patches of open grass land, while on the lower levels there are extensive areas of heavy bush, indicating a moister climate, the precipitation in fact in this district being about double that of the range country to the south. This region may be roughly described as being triangular in shape, the base of the triangle extending from Sicamous, on the main C.P.R. line, to rather beyond Salmon Arm, and the apex at Armstrong. The visitor will find that this district presents faunal characteristics very different from the drier range country to the south and west, the varied flora is at once apparent, and from the point of view of an entomologist the region is one of surpassing interest. For the most part the country consists of broad valleys interspersed with low hills, but it is flanked at the east by high mountains rising to a height of about 4000 feet, on which many high-altitude species may be obtained, not to be found on the lower levels. The collection brought by me to the Coast this year is not a large one and contains only about 300 species, but it is fairly representative and includes some rare forms and several new records for the Province.

With the first warm days of spring **Papilio zelicaon.** Luc. makes its appearance, followed at no great interval by **P. glaucus** race **canadensis,** which is one of the common butterflies of the Interior. The magnificent **P. daunus.** Bdv. does not usually appear until June, but I have taken it once as early as May 12th. **P. bairdi** race **oregonia.** Edw. is not so frequently met with in the bush districts as on the range land to the south, where it is fairly plentiful in July. **Parnassius smintheus** race **magnus** is somewhat local, but where found is usually abundant. **Neophasia menapia.** Feld. is taken but rarely, being more abundant in the Southern Okanagan.

Among the sulphurs, **Eurymus eurytheme** form **kootenai** Cockle is common in spring. The form **eryphyle** Edw. appears in the first week in July, followed a little later by **eurytheme** Bdv., which is not by any means common, and of which I have so far only taken males. It is scarcely necessary to mention such a cosmopolitan insect as **Danaus archippus** but for the fact that I have seen hibernated individuals early

in May, and venture to suggest that it may breed with us; it is abundant along the poplar-fringed bottom lands in certain years in July.

Of the **Satyridae** my collection shows few examples, but one butterfly among them well worthy of mention is **Oeneis macouni** Edw. Of this species I have a single example, which was taken near my house, but evidently a straggler, as it is a high altitude insect and is found more abundantly as we ascend to higher levels, together with **chryxus,** which is the commoner one of the two.

Among the **Nymphalidae, electa, leto** and **atlantis** are the commonest forms. **Brenthis bellona** is double-brooded with us, occurring in May and July. **Euphydryas perdiceas** Edw. occurs in great numbers in the spring.

Of the **Lycaenidae,** interesting and rather uncommon species are **Incisalia eryphon** Bdv., **C. dumetorum** Bdv., **H. heteronea** Bdv., and **P. piasus** Bdv.

Among the **Sphingidae,** a new record for British Columbia is **Smerinthus jamaicensis** form **geminatus** Say., which comes occasionally to light. **Paonias myops** A. & S. I have bred from the larva, the food plant of which is the choke cherry. **Pachysphinx modesta** Harris is taken sparingly. The beautiful **Proserpinus clarkiae** Bdv. is quite a common insect in certain years, flying in bright sunshine over the blossoms of the "wild sunflower." **Eubaphe immaculata** race **trimaculosa** Reak. is common some times on partly cleared bush lands. **Hyphoraia parthenos** Harr. is occasionally taken.

Among the noctuids, a new record for this Province is **Dysocnemis oregonica** Hy. Edw., which I have taken on the open range among the sunflowers in May. Sugaring I have always found the most successful method of getting noctuids and generally far more productive of specimens than light. One of the good things taken at sugar is **Euxoa andera** Sm., a new record for the Province; it is not uncommon. **Cirphis farcta** Grt., **Agrotis rubifera** Grt. and **Aplectoides condita** Gn. are also recorded for the first time; none of them are common in the district, and I obtained only single examples of each.

In August, 1915, several specimens of **Catocala relicta** Wlk. were obtained at sugar. This fine moth is usually rare with us, and it was the first time I had seen it for some years. It has the unusual habit of being attracted by ordure, and I have seen it fly up from cattle and horse manure on the roads. Other species of this genus that were taken are **nevadensis** form **montana** Beut. and **californica** Edw., the latter being the most common. Two specimens of **Eosphoropteryx thyatyroides** Gn. were taken in July, 1913, but I have failed to take it since. Others worthy of note are **Aplectoides pressus** Grt., **Euretagrotis perattenta** Grt., **Xylena mertena** Sm., **Trachea illocata** Wlk., **T. mactata**

race **allecto** Sm., **Luperina veterata** Sm., **Acronycta minella** Dyar., **A. tartarea** Sm. and **A. dolorosa** Dyar.

The Geometridae of the district are very numerous and although the species obtained by me were comparatively few, nevertheless two new records for the Province were obtained. These are **Macaria bicolorata** Fabr. and **Hesperumia sulphuraria** form **baltearia** Pack. Two specimens were secured of the latter, which is not at all uncommon. No collection was made of any Micro-lepidoptera.

With the exception of my own trivial and spasmodic efforts, the Northern Okanagan is quite unworked territory, and it is hoped that in the near future its insect fauna will be better known, there being no doubt that more sustained and systematic collecting will result in the discovery of many species hitherto unknown in the district.

For the determination of material, I am indebted to Mr. E. H. Blackmore, who has looked over my collection and given me most generous assistance.