

Mr. Blackmore: The endings, I think, are absolutely authentic. At one time, as you know, the various species of genera ended in a certain way. You could tell by the end of the word what class they belonged to.

Mr. Day: I shall now call on Mr. Anderson, of the Museum, Victoria, to give his paper on "Insect Records from Atlin and Northern British Columbia."

INSECTS RECORDED IN THE ATLIN DISTRICT (NORTHERN BRITISH COLUMBIA) DURING THE SUMMER OF 1914.

BY E. M. ANDERSON.

(Reprinted from *Provincial Museum Report, 1914*, by permission of the Director.)

Since my report is of no economic value, I sincerely trust that it will be of interest to some members present; therefore, on a systematic order, I shall endeavour to furnish you with extracts from my field-notes, including a brief synopsis and annotated list of the insects collected in northern British Columbia.

In connection with the Provincial Museum of Victoria, I had the honour of making an extended zoological expedition into the Atlin District during the summer of 1914. Accompanied by an assistant, Mr. C. B. Garrett, we sailed from Victoria on May 29th, via Skagway, Alaska; thence by train and boat, arriving at Atlin on June 6th after a most enjoyable and pleasant trip. On our arrival we found the town of Atlin ("Atlin," a "Tahltan" Indian word meaning "Big Water") nothing but a mass of ruins, save the Government buildings and a few dwellings at the southern end of the town, these only being saved from devastation after a fierce fire. The following day, after provisioning the best we could under the circumstances, we departed from Atlin by wagon to Wilson Creek, and after a slow and rough ride we camped at the foot of a steep mountain, close to a small lake, at an altitude of 3,000 feet. On our arrival the weather was still cool, fresh snow lying on the foothills close to camp; the snow did not melt until about June 20th. This spot favoured the collecting of insects, Diurnals, Geometers in particular. Most of the material gathered at this camp is most desirable, and nearly all proved good species. Six out of seven species of *Brenthis* taken on this trip were found at Wilson Creek, including *Brenthis improba* Butler, which is still very rare in collections. This beautiful form was found on a grassy mountain-top, none being captured below 5,000 feet.

The three listed forms of *Cœnis* and both *Erebias* appeared on the western slope of the mountains, while on the opposite side, only a short distance of about two miles, we found a marked difference in the fauna. *Lycæna sæpiolus*, *aquilo*, and *scudderi*, commonly called "blues"; *Colias scudderi* and *eryphile*, the sulphur butterflies; *Pontia occidentalis* var.

calyce and *Synchlœ, creusa* the "whites," and a number of day-flying moths were found hovering about the flora, which I vouch to say has no equal in any part of the Province I have visited. In addition, most of the day-flying moths were taken at Wilson Creek, where we collected for a short period of a little over three weeks. Having collected birds and mammals during the fall of the previous year, I acquired a fair knowledge of the district; consequently, with this in my favour, I was enabled to traverse with ease and avoid many hardships, etc., which a naturalist faces in the wilds of strange territory.

It is needless to mention the pleasure derived from a trip of this nature, and I sincerely hope that within the near future some of the members present, or otherwise, will have the same good fortune bestowed on them, and also the opportunity to go afield as I have in the past, thereby furthering what little entomological work I have accomplished, not only in the north, but in other sections of the Province. The north undoubtedly is still virgin territory, offering the student the richest field I know in British Columbia for general research-work. A casual glance at my list of captures, a number of which are new records, should convince our members that we are still at sea relative to what species occur in British Columbia, and also as to the respective range of some of the common forms of insects in the various orders. Insect-life in this country flourished almost everywhere in abundance. Perhaps the most noticeable phenomena was the scarcity of Heterocera (moths), attributed to the little or no darkness throughout the summer months; however, notwithstanding these conditions, it is indeed gratifying to learn that of what moths were taken nearly all were good species. It was not until early in August, when the nights began to show signs of darkness, that we availed ourselves of the use of the lamp. With this device we were greatly disappointed; our catch in four consecutive nights only yielded about a dozen Noctuidæ and several Geometridæ. Failing to attract the moths to light, a few nights were spent in visiting a few sugared tree-trunks, etc. Sugaring also proved futile, taking only four *Euxoa divergens* during the whole week. Incidentally, many interesting species of Diurnals (butterflies) fell to the net, several of which are entirely new records for the Province. Unfortunately, a number of the species known to occur in the district missed our observation, particularly those insects which are purely local to a limited area in the sections we were unable to search. Owing to our brief stay it was impossible to cover more than a small part of the vast unknown region, only scratching, as it were, at half a dozen points throughout the country where conditions were most favourable for general collecting purposes.

The Geometridæ collected are being reported upon by my esteemed friend and fellow-member, Mr. E. H. Blackmore. To this gentleman I am indebted in many ways, and also for his kind assistance in classifying and determining the insects belonging to this group. I may say that credit is due him for the energetic and painstaking manner in which he

has devoted all his spare time, both in collecting and studying this group, for the past two seasons. Not only has he discovered new species on Vancouver Island, but he has been instrumental in bringing to light many species and varieties which for a number of years have assumed erroneous names, many of which were taken for granted as authentic.

Odonata (dragon-flies) made their appearance early in June, and were abundant in suitable places during July and August. Six species were taken, all of which were submitted to Mr. Raymond C. Osburn for identification.

A very remarkable "Syrphidæ," *Erastalis rupium*, was taken. This is an entirely new record for America, being found common in Europe.

Attached will be found an annotated list of insects captured in the Atlin District, together with a supplementary list to the Okanagan insects collected in 1913.

LEPIDOPTERA.

DIURNALS (BUTTERFLIES).

1C. *Parnassius smintheus* var. *nanus* Neumoegen (Northern Parnassian). Common at Pike River on July 27th, 28th, and 29th. A large series of over a hundred were taken, including a number of well-marked females. (Barnes & McDunnough.)

36A. *Pontia occidentalis* var. *calyce* Edwards (Western White). Fairly common at Wilson Creek in June. This form is the commonest white in the north. (Barnes & McDunnough.)

38A. *Pontia napi* var. *bryoniæ* Ochseneheimer (Alpine White). Not common. Two specimens taken at Wilson Creek on June 12th. Also a single worn female at Hot Springs on July 7th. We noted several on the wing at Skagway, Alaska, on June 4th. It is possible they may have been the form *alascensis*. (Barnes & McDunnough.)

Synchlœ creusa Doubleday & Hewitson. Common at Wilson Creek, where a number were taken on June 8th to 30th. Mr. McDunnough says specimens examined are typical.

63A. *Eurymus hecla* var. *glacialis* McLachlan. A single specimen collected at Anderson Bay on August 8th near the top of a mountain at 5,000 feet altitude. No others were observed. (Barnes & McDunnough.)

65B. *Eurymus eriphyle* Edwards. Abundant. Several taken at Wilson Creek on June 9th to 29th. Also occurred commonly at Hot Springs in July. Albinic females were also taken. (Mr. McDunnough states that this is the true form without a doubt.)

72. *Eurymus scudderi* Reak (Scudder's Sulphur). Appeared at Wilson Creek on June 20th to 30th. Fifteen taken at Hot Springs and Pike River during July. (Barnes & McDunnough.)

102. *Argynnis atlantis* Edwards. Fairly common at Hot Springs on July 12th to 25th. Specimens taken were a trifle smaller than type forms from the Catskills, New York. (Barnes & McDunnough.)

128B. *Argynnis eurynome* var. *bischoffi* Edwards. Two specimens collected at Pike River on August 8th. Mr. McDunnough states this is the silvered form of *bischoffi* Edwards, practically the same as var. *washingtonia*. (Barnes & McDunnough.)

128D. *Argynnis bischoffi* var. *opis* Edwards. A single specimen obtained at Pike River on August 8th. The type locality for *opis* is Cariboo District, but specimen is fairly typical. (Barnes & McDunnough.)

131. *Brenthis myrina* Cramer (Silver-bordered Fritillary). About fifty were taken at Hot Springs on July 5th to 9th, where it was common. Not observed in any other section.

134. *Brenthis triclaris* Hubner. Fairly common at Wilson Creek. A number were collected at Gopher Dam Mountain at about 4,500 feet altitude. Did not occur on the lower levels. All were taken from July 15th to 20th. Mr. McDunnough until further examination refers them at present to *Aphirape v. ossianus* Boisduval.

137C. *Brenthis chariclea* var. *boisduvalii* Dup. (Boisduval's Fritillary). Appeared commonly at Wilson Creek from June 15th to 30th. At Hot Springs a number were captured as late as July 20th. (Barnes & McDunnough.)

138. *Brenthis freija* Thunberg; syn. *freya* H. & S. We found this the commonest *Brenthis* in the district. It appeared in numbers at Wilson Creek from June 7th to 30th, where a number were taken. This species is the first fritillary to emerge, being the only form flying when we arrived at the Creek. (Barnes & McDunnough.)

139. *Brenthis polaris* Bdv. Not common. Three specimens collected at Wilson Creek on June 15th and 26th. (Barnes & McDunnough.)

140A. *Brenthis frigga* var. *saga* Kaden. A number were taken at Wilson Creek from June 11th to 28th. Fairly common.

140B. *Brenthis frigga* var. *improba* Butler. Eight specimens collected on the summit of Gopher Dam Mountain, 500 feet altitude. Mr. McDunnough states that it is paler above than the typical specimen, and is still rare in collections.

191. *Phycoides pratensis* Behr. Eight specimens taken at Hot Springs from July 10th to 26th. Not a common insect. (Barnes & McDunnough.)

218. *Aglais milberti* Goddard (Milbert's Tortoise-shell). Two seen at Pike River on August 8th. Probably common later in the fall.

270A. *Erebia disa* var. *mancinus* Dby. We found this beautiful form flying with *Erebia epipsodea* at Wilson Creek from June 11th to 30th. About thirty specimens were taken. By no means common. (Barnes & McDunnough.)

273. *Erebia epipsodea* Butler (Common Alpine). Common at Wilson Creek throughout the month of June. A good series of fresh specimens were taken. Mr. McDunnough reports the specimens submitted to him as a true typical form.

282. **Cœnomympha kodiak** Edwards. Only two specimens taken at Wilson Creek on June 26th. These are the only two records we have from British Columbia. Apparently not common, as no others were seen.

292. **Enis jutta** Hubner; **syn. Balder** Bdv. Not common. Eleven specimens taken at Wilson Creek during the last week of June. Fairly common. (Barnes & McDunnough.)

293. **Enis uhleri** Reakirt. Rather common. Eleven specimens collected at Wilson Creek from June 15th to 30th. (Barnes & McDunnough.)

295F. **Enis norna var. taygete** Hubner. Very common at Wilson Creek throughout the month of June. A large series of over a hundred were taken. This species is the common Arctic butterfly, and can be seen in numbers along the mountain trails and roadsides from 3,000 to 5,000 feet altitude. (Barnes & McDunnough.)

396. **Epidemia helloides** Boisduval. Two specimens collected at Hot Springs on July 26th and five at Pike River on August 3rd. (Barnes & McDunnough.)

Some of the **Epidemia** taken represent a form between **dorcax** and **xanthoides**. (McDunnough.)

409. **Cupido sæpiolus** Bdv. Common at Wilson Creek from June 8th to 30th. Also common at Hot Springs early in July. Specimens are rather off type. (Barnes & McDunnough.)

425. **Agriades aquilo** Boisduval. Thirty specimens collected at Wilson Creek from June 15th to 30th. Barnes & McDunnough identified it as an intermediate Western form between **aquilo** Bdv. and **rustica** Edwards.

432. **Rusticus scudderi** Edwards. Common at Wilson Creek in June and at Hot Springs in July. Over fifty specimens taken. The specimens are probably closer to true **scudderi** described from Lake Winnipeg than the Eastern form going under the same name. (McDunnough.)

644. **Hesperia centaureæ** Rambur. Only two specimens taken at Wilson Creek, one on June 22nd and another on June 29th. (Barnes & McDunnough.)

HETEROCERA (MOTHS).

ARCTIIDÆ.

869. **Neoarctia yarrowi** Stretch. A perfect specimen taken at Wilson Creek on June 28th. Several others were seen on the wing in June. (Barnes & McDunnough.)

AGARISTIDÆ.

943. **Androloma mac-cullochii** Kirby. Fairly common in the mountainous sections in June. Specimens obtained at Wilson Creek from June 12th to 28th. (Barnes & McDunnough.)

NOCTUIDÆ.

1105. *Caradrina extimia* Walker. Three taken on August 20th at Atlin. (Barnes & McDunnough.)
1223. *Agroperina (Hadena) morna* Strecker. Single specimen taken at Pike River on July 29th, possibly a form of *morna*. (Barnes & McDunnough.)
1232. *Sidemia (Hadena) devastatrix* Brace. Atlin, August 15th; Cariboo Crossing, August 20th. (Barnes & McDunnough.)
1281. *Hyppa brunneicrista* Smith. One specimen taken at Hot Springs on July 6th, probably this species. (Barnes & McDunnough.)
1390. *Rhynchagrotis rufipectus* Morrison. Two specimens taken at Pike River on August 8th. (Barnes & McDunnough.)
1431. *Pachnobia littoralis* Packard. Single specimen on July 5th at Hot Springs is a form of *littoralis*. (Barnes & McDunnough.)
1489. *Agrotis (Noctua) fennica* Tauscher. Five specimens taken at Atlin from August 8th to 12th. (Barnes & McDunnough.)
1736. *Euxoa (Paragrotis) divergens* Walker. Three specimens taken at Atlin on August 8th, 11th, and 12th. Mr. McDunnough is not quite certain as to the identity of this species.
1737. *Euxoa redimicula* Morrison. Common at Atlin from August 9th to 19th. Eight specimens collected. (Barnes & McDunnough.)
1798. *Mamestra olivacea* var. *lucina* Smith. Single specimen collected at Atlin on August 8th. (Barnes & McDunnough.)
1840. *Mamestra sutrina* Grote. Single specimen collected at Wilson Creek on June 6th. (Barnes & McDunnough.)
1930. *Anarta cordigera* Thunberg. Common at Wilson Creek in June. Eleven specimens taken. (Barnes & McDunnough.)
1932. *Anarta melanopa* Thunberg. Not common. Three specimens collected at Wilson Creek from June 14th to 18th. (Barnes & McDunnough.)
1935. *Anarta richardsoni* Curtis. One specimen taken at Hot Springs on July 7th. (Barnes & McDunnough.)
1936. *Anarta?* sp. A single specimen, possibly a dark form of *impinigens* Walker was taken at Atlin on August 15th. (Barnes & McDunnough.)
1974. *Cirphis (Heliophila) heterodoxa* Smith. One specimen taken at Hot Springs on July 17th. (Barnes & McDunnough.)
2533. *Autographa (Syngrapha) ignea* Grote. Four taken at Pike River from July 27th to 29th. (Barnes & McDunnough.)
- Autographa orophila* Hampson. Two taken at Pike River on July 29th. (Barnes & McDunnough.)
3223. *Epicnaptera americana* Harris. A female collected at Wilson Creek on June 21st. (Barnes & McDunnough.)
- 4197A. *Albuna pyramidalis* var. *montana* Hy. Edwards. Three collected at Wilson Creek on June 28th. (Barnes & McDunnough.)

GEOMETRIDÆ.

3255. *Philopsia* (*Talledega*) *montanata* Packard. Common at Wilson Creek in June; specimens taken on June 12th, 16th, 21st, and 27th. (L. W. S.)

Eupithecia adornata Taylor. Three taken at Wilson Creek on June 20th and 21st. (L. W. S.)

3350. *Eustroma propulsata* Walker. Taken at Atlin on August 11th. (L. W. S.)

3351A. *Eustroma destinata* var. *lugubrata* Moschler. A single specimen taken at rest on a fence at Atlin on August 13th. (L. W. S.)

3353. *Eustroma nubilata* Packard. Wilson Creek, on June 26th. (L. W. S.)

3359B. *Rheumaptera hastata* var. *hastulata* Hubner. Common at Wilson Creek from June 9th to 30th. (L. W. S.)

3360. *Rheumaptera tristata* Linnæus. Fairly common at Wilson Creek from June 16th to 28th. (L. W. S.)

3362. *Rheumaptera luctuata* Dennis & Schiffermuller. Wilson Creek, June 15th to 20th. (L. W. S.)

3362A. *Rheumaptera luctuata* var. *obducata* Moschler. Wilson Creek, June 26th to 28th. (L. W. S.)

3379B. *Mesoleuca citrata* var. *suspectata* Moschler. Wilson Creek, June 14th. (L. W. S.)

3381. *Mesoleuca silacea* Hubner. Common in the mountainous sections in June. A good series taken at Wilson Creek. (L. W. S.)

3387C. *Hydriomena furcata* var. *quinquefasciata* Packard. Very abundant throughout the month of June at Wilson Creek. (L. W. S.)

3419. *Hydriomena magnoliata* Guenee. Found it common at Wilson Creek from June 18th to 30th. (L. W. S.)

3434. *Stannoædes* (*Cœnocalpe*) *topazata* Strecker. Fairly common at Wilson Creek in June. Previous record Mount Cheam. (L. W. S.)

3449. *Petrophora salvata* Pearsall; *incursata* Hubner. Taken at Wilson Creek on June 30th. (L. W. S.)

3450. *Petrophora abrasaria* Herrich-Schaeffer. Common at Wilson Creek in June. (L. W. S.)

3603. *Epelis truncataria* Walker. Fairly common at Wilson Creek from June 12th to 30th.

3777. *Enypia perangulata* Hulst. Single specimen taken at Carcross on August 20th. (L. W. S.)

3878. *Jubarella danbyi* Hulst. Two specimens taken at Wilson Creek on June 26th and 28th. (L. W. S.)

PYRALIDÆ.

4404. *Phlyctœnia itysalis* Walker. Common at Hot Springs on July 17th. (Barnes & McDunnough.)

Phlyctœnia sp.? Pike River, August 8th; possibly *tellealis* Dyar. (Barnes & McDunnough.)

4504. *Scoparia lugubralis* Walker. Hot Springs, July 4th. (Specimens rubbed; the identification is not certain.) (Barnes & McDunnough.)

Scoparia sp.? Hot Springs, July 7th. (Barnes & McDunnough.)

4510. *Scoparia centuriella* Dennis & Schiffermuller. Very common at Wilson Creek in June. A large series of this species were collected. Very variable. (Barnes & McDunnough.)

4563. *Crambus pascellus* Linnæus. Common at Hot Springs. Several taken from July 5th to 10th. (Barnes & McDunnough.)

4583. *Crambus myellus* Hubner. Fairly common at Hot Springs. Specimens were taken on July 4th, 5th, and 6th. (Barnes & McDunnough.)

4776. *Laodamia fusca* Harworth. Nine specimens taken at Wilson Creek from June 15th to 30th. (Barnes & McDunnough.)

5071. *Olethreutes bipartitana* Clemens. Common. Six specimens taken at Hot Springs on July 8th and 12th. (Barnes & McDunnough.)

Hysterosia homonana Kearfoot. Single specimen taken at Hot Springs on July 8th. (Barnes & McDonnough.)

TINEIDÆ.

Nemotois belleta Walker. One specimen taken at Hot Springs on July 4th. (Barnes & McDunnough.)

DIPTERA. (ATLIN, 1914.)

(Idt. by Raymond C. Osburn.)

TABANIDÆ.

T. affinis Kirby.

Tabanus sp.

T. osburni Hine.

BOMBYLIDÆ.

Anthrax fulviana Say.

SYRPHIDÆ.

Syrphus contumax O. Sacken.

Syrphus intrudens O. Sacken.

Syrphus (Catabomba) pyrastris Linnæus.

Syrphus torvus O. Sacken.

Hammerschmiatia ferruginia Fallen.

Ersitalis rupium Fabricus. New to America; common in Europe.

Melanostoma sp. (Prob. new sp.)

ODONATA (DRAGON-FLIES). (ATLIN, 1914.)

(Idt. by Raymond C. Osburn and E. B. Williamson.)

Æshna sitchensis Hagen. (Osburn.)

Æshna eremista Scudder. (Osburn.)

Enallagma calverti Morse. (Osburn.)

- Enallagma cyathigerum* Charpentier. (Osburn.)
Leucorhinia hudsonica Selys. (Williamson.)
Leucorhinia proxima Calvert. (Williamson.)
Somatochlora hudsonica Hagen. (Osburn.)

SUPPLEMENTARY LIST OF INSECTS COLLECTED IN THE
 OKANAGAN, 1913.

ARCTIIDÆ.

833. *Eubaphe immaculata* Reakirt. Penticton, June 27th, 1913.
 (Wolley-Dod.)

NOCTUIDÆ.

1226. *Hadena cogitata* Smith. Penticton, July 7th. (W.-D.)
 1496. *Noctua unicolor* Walker; *syn. clandestina* Harris. Five specimens taken at Penticton on June 28th. (W.-D.)
 1708. *Hadenella subjuncta* Smith. Three specimens taken at light, Penticton, July 3rd. (W.-D.)
 1894. *Xylomiges dolosa* Grote. Fairly common on peach-blossoms at Okanagan Falls, May 5th. (W.-D.)
 1895. *Xylomiges rubrica* Harvey. Okanagan Falls, May 5th. Very common on peach-blossoms. A large series of 220 taken. Very variable. (W.-D.)
Stretchia angula Smith? Five taken at Okanagan Falls on May 6th, 8th, and 12th. (Mr. Wolley-Dod states specimens examined agree with the description of types from Arrow Head Lake, B.C., but he never saw the species before.)
 2102. *Xylina georgii* Grote; *syn. holicineria* Smith. Seven taken at Okanagan Falls from May 5th to 30th. (W.-D.)
 2120. *Colocampa cineritia* Grote; *syn. mertena* Smith. Five collected at Okanagan Falls on May 6th and 10th. (W.-D.)
 2142. *Rancora strigata* Smith. Five fresh specimens taken at light at Okanagan Falls on May 5th, 7th, and 8th. (W.-D.)
 2240. *Scopelosoma tristigmata* Grote. Okanagan Falls, May 7th. (W.-D.)
 2405. *Melicleptria honesta* Grote. Vaseaux Lake, Okanagan Falls, May 26th. (W.-D.)
 2601. *Eustrotia albidula* Guenee. Penticton, June 30th, three taken at light. (W.-D.)
 2761. *Syneda (Euclidia) annexa* Hy. Edwards. Common at Okanagan Falls from April 26th to May 7th. (W.-D.)

HYPENINÆ.

3008. *Epizeuxis americalis* Guenee. Penticton, June 30th. Mr. Wolley-Dod states that it appears to be very rare in British Columbia, the only previous record being one from the late G. W. Taylor's collection.

- 3039A. *Chytolita petrealis* Grote. Penticton, June 21st. (W.-D.)
 3168. *Gluphisa severa* Hy. Edwards. Two taken at Okanagan Falls on April 24th. (W.-D.)

GEOMETRIDÆ.

3237. *Cladora atroliturata* Walker. Okanagan Falls, April 20th and 22nd. (L. W. Swett.)
Nausina (Gymnocelis) melissa Grosbeck. Okanagan Falls, May 19th. (L. W. S.)
 3316. *Eupithecia cestata* Hulst. Okanagan Falls, April 18th and 20th. (L. W. S.)
 3318. *Eupithecia implorata* Hulst. Okanagan Falls, April 18th to 22nd, fairly common at light. (L. W. S.)
 3321. *Eucymatoge tenuata* Hulst. Okanagan Falls, June 10th. (L. W. S.)
 3436. *Marmopteryx marmorata* Packard. Two taken at Shuttleworth Creek, Okanagan Falls, on May 7th and 10th. (L. W. S.)
Leptomeris subfuscata Taylor. Fairly common at Shuttleworth Creek, Okanagan Falls, from May 23rd to 30th. (L. W. S.)
 3550. *Leptomeris (Eois) sideraria* Guenee. Okanagan Falls, June 10th and 12th, common. (L. W. S.)
 3623. *Deilinia variolaria* Guenee. Penticton, July 3rd. (L. W. S.)
 3648. *Sciagraphia denticulata* Grote. Okanagan Falls, May 6th to 8th. (L. W. S.)
 3662. *Sciagraphia excurvata* Packard. Okanagan Falls, May 9th. (L. W. S.)
 3850. *Cleora pampinaria* Guenee. Penticton, July 6th. (L. W. S.)
 3867. *Lycia cognataria* Guenee. Penticton, June 30th and July 2nd. (L. W. S.)
 3960. *Euchlæna johnsonaria* Fitch. Okanagan Falls, June 25th.

THYRIDÆ.

4131. *Thyris maculata* Harris. Okanagan Falls, June 8th. (Wolley-Dod.)

GEOMETRIDÆ (ATLIN, 1913).

3343. *Eutcpfhria (Philereme) multivagata* Hulst. Atlin, September 9th. (L. W. S.)
 3380A. *Mesoleuca citrata* Linnæus. September 12th and 13th. (L. W. S.)

LIST OF HYMENOPTERA COLLECTED AT OKANAGAN FALLS, 1913.

(Idt. by J. C. Crawford.)

- Bombus occidentalis*. Okanagan Falls, May 13th to 27th.
Bombus edwardsii. Okanagan Falls, April 19th to 22nd, May 3rd.
Bombus separatus. Okanagan Falls, May 27th.

- Bombus oppositus*. Okanagan Falls, June 13th to 27th.
Psithyrus insularis. Okanagan Falls, June 6th.
Halictus lerouxii. Okanagan Falls, April 19th.
Halictus trizonatus. Okanagan Falls, June 12th.
Agapostemon femoratus? Okanagan Falls, June 13th.
Bombomelerta fulvida. Okanagan Falls, April 19th to 26th.
Anthophora solitaria Ritz. Okanagan Falls, June 2nd.
Sphecodes hesperellus. Okanagan Falls, June 2nd.
Andrena kincaidii Ckll. Okanagan Falls, May 13th.
Andrena vicina Smith. Okanagan Falls, May 7th.
Ceratina submaritima. Okanagan Falls, June 12th.
Megachile sp. Okanagan Falls, June 5th.
Osmia sp. (two distinct var.). Okanagan Falls, June 2nd.
Anthophora sp. Okanagan Falls, May 28th.

Mr. Day: That is a very interesting account of insects. I have had a little experience with the northern insects. My son was in Dawson several years ago, and he collected some insects and sent them down to me. I was much struck with the darkness of the insects, which demonstrated that the effect of the cold on moths was to generally produce dark specimens, and it is admitted that the cold has the effect of darkening moths. I think it is quite interesting to note that some go dark and some go light.

Mr. Blackmore: The specimens are similar in some of the various forms.

Mr. Day: Very similar. The next paper is on "Interesting Habits of Some Lepidoptera," by J. W. Cockle, Kaslo, B.C.

Mr. Treherne: Mr. Cockle's paper has been printed in Bulletin No. 5; however, as it is a paper which would be immensely interesting to all present, I beg leave to read it. (See Bulletin No. 5 for Mr. Cockle's paper.)

Mr. Wilson: I was reading the other night Darwin's Diary on the Butterfly, and I took a little note of the insects that he found in Brazil, if I might read it to you.

DARWIN, BUTTERFLIES IN BRAZIL.

NOTICED BY DARWIN IN THE VOYAGE OF THE "BEAGLE."

I was much surprised at the habits of the *Papilio feronia*. This butterfly is uncommon and generally frequents the orange groves. Although generally a high flyer, it frequently lights on the trunks of trees. On these occasions the head is invariably placed downwards, and its wings are expanded in an horizontal plane instead of being folded vertically, as is commonly the case.