

riors filled with more concentrated, villainous bitterness than so many rattlesnakes, always prepared to give battle to any moving thing in the vicinity of the nest, the unwary entomologist included.

A habit of this same wasp which I at one time noted may be of interest. The season opened early and warm, and the common wasp made many flourishing colonies. Later on, the weather turned very wet, and in a field of barley, where were many wasps nests, the careful householders of the underground communities built chimnies of clay, to the height of three or four inches, above the mouths of their underground passages, without doubt to guard against flooding from sudden downpours of rain. I have never since been fortunate enough to see these structures at the mouths of the nests.

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### NOTES ON COLLECTING AT FLOWERS AND BLOSSOMS

BY A. W. HANHAM

Looking back over the notes and records started soon after I came to Canada in December, 1881, I have jotted down in this paper some items that may be of interest.

I had my introduction to Canadian Entomology at Ottawa in 1882, with such enthusiasts as the late Dr. James Fletcher, and the late W. Hayne Harrington, to speed me on my way; the former with the butterflies and moths, and the latter with the beetles. Later on, at Quebec, I had the pleasure of working in these with the late Rev. T. W. Fyles, and when I came out to this coast, with the late Rev. G. W. Taylor, and late Capt. R. V. Harvey, with insects and shells.

All these old friends and kindred spirits have passed on; yet one remains, your President, Mr. L. E. Marmont, with whom many happy days and outings were spent at Brandon and Rounshwaite, Man., during a number of years when I was stationed at Winnipeg.

From Ottawa, I was moved to Paris, Ont., and then to Hamilton and Brantford, Ont., thence to Quebec City, in 1891, to Winnipeg in 1893, and to Victoria, B. C. in 1901. From these remarks you will see that I have had exceptional opportunities of collecting in many parts of Canada.

In 1888 I recorded the capture of a number of noctuids—as many as 100 specimens in one evening—off sunflowers in my garden at Hamilton, Ont., in August, towards dusk. In May and June a number of species of **Coleoptera**, mostly **Cerambycidae**, off hawthorn blossom in open bush, along under the mountain there. In June, 1889, six species of **Sphindidae** from flower beds, one evening at Port Dover, Lake Erie, on June 12th, 1892, on Isle d'Orleans, lying in the St. Lawrence River,

a few miles below Quebec City, a rare Blister beetle, **Pomphopoea sayi**, at elderberry flowers; and on the same Island on Aug. 10th, 1893, flying about the spreading dogbane (**Apocynum androsaemifolium**) in a small clearing, 30 specimens of **Autographa**, 7 or 8 species being captured. 1894 found me settled in Winnipeg, and I record little seen or taken on flowers or blossom, except butterflies and beetles, until well on in the summer or fall, when the Canada thistle (**Cnicus arvensis**), asters and golden rod were out. At Bird's Hill, near Winnipeg, on Labor Day, 1890, some good noctuids (day flying) were swept off golden rod, and some rare beetles (**Lebia**) off asters. On July 29th, Aug. 2nd and 5th, 1900, a number of **Melicleptria villosa**, form **sexata**, were taken at rest in the centre of a purplish daisy (**Chrysanthemum leucanthemum**), and in the same meadow I swept off flowers, my first specimen of **Pamphila ottoe**. During my sojourn on the Prairies my best collecting off flowers was made at Brandon and Rounshwaite, Man., where in 1896 and 1897, particularly, as recorded in Vol. 30 of The Canadian Entomologist, many good species of noctuids were swept at dusk in July and August off the following; the spreading dogbane, wild bergamot or horsemint (**Monarda fistulosa**, var. **mollis**), Scotch thistle (**Cnicus undulatus**), wild sunflowers (**Helianthus scabra** and **rigidus**), and species of golden rod, of which *Solidago rigidus* proved the most attractive. The moths included **Autographa biloba**, **brassicae**, **flagellum**, and **californica** (the last named was looked on as a rarity on the Prairies.) Perhaps at Rounshwaite, where I was the guest of Mr. Marmont, on several occasions, **Oncocnemis atrifasciata** was our most beautiful, if not also our best catch.

In August, 1896, five specimens of **Eosphoropteryx thyatyroides** were taken at dusk in Elm Park, Winnipeg, off one of the above-mentioned sunflowers (**scabra**).

During flying visits to Carberry, Man., I bagged my first specimen of **Argynnis nevadensis** (green washed frit), a number of **Eurymus** (albinos), **Euptoieta claudia** and some rare "Skippers," off milk weed; and at dusk off golden rod, many rare noctuids, including **Oncocnemis viriditincta**; the only time I ever took it. When I lived in Victoria, Goldstream was a favorite hunting ground with me, and in May and June especially, many good captures were made on the mountain slopes, and along the railway line; needless to say, the majority off flowers. I remember my first view of the Dogwoods in flower, and my disappointment when I found that virtually nothing seemed to be attracted. One year in May, in Victoria, I took some nice noctuids about the holly trees in blossom. Since my residence near Quamichan Lake, 21½ miles from Duncan, V. I., where I came in 1906, I have devoted much time to collecting at flowers chiefly in my own garden. In August and September, 1913, at dusk, off sunflowers, I made my first big catch here of **autographas**; they included nine species; the sunflowers were mostly of the double variety. I first grew **Mathiola** (night blooming stock) a year or two

later, and took my first **Autographa speciosa** off it in July, 1915. I have planted special beds of this highly scented flower since I discovered its attractive properties, and have taken **speciosa** every season; it is on the wing from the beginning of July until about the 20th. In September, 1922, I took a pair of **Autographa brassicae** at the flowers, a new record for Vancouver Island, and an addition to my B. C. collection.

Last year (1923) my record for the season, from the beginning of July to the beginning of October, was 11 species of *Autographa*, some 150 specimens. Every species that I have taken on the Island has been attracted, except *Mappa*, which flies in June before the flower are out. Strange to say comparatively few other species of noctuids appear to be attracted to this flower, although I have twice taken single specimens of **Cucullia**. I have taken the Peach-blossom moth (**L. pudens**) at blossom of the wild cherry.

Last year a neighbour, Mr. Demus Ashby, called my attention to the attractiveness of the Tansy ragwort; Stinking Willie is another name for it, and a fitting one, for it has a very strong sour, disagreeable smell—and he gave me some plants. I can truthfully state that I have never before seen such swarms of insects on any flowers or plants. All orders were well represented, but, as the flowers were not open until the beginning of August, not many species of **Diurnals** were out to be attracted. **Hymenoptera** simply swarmed; the **Coleoptera** were mostly "Lady-birds," and "Longhorns," but here again not a great number of species of the latter were still about; I, however, took two species new to this district. **Hemiptera** were abundant, and **Diptera** also. **Micro-Lepidoptera** were attracted in numbers, and species new to me turned up, including our tiniest "Plume" (**Trichoptilus pygmaeus**), and **Allononyma vicarialis**; of the latter I caught about twenty specimens during August, all during the daytime, never towards dark or later. Strange that, during a residence at Quamichan of 18 years, I had never run across it before. This handsome little moth skipped about on the flower heads, usually with its wings out at right angles or up-tilted; once it took flight, it disappeared from my vision. This moth was met with one season at Goldstream in August. In the evening a lot of "Micros" were on the flowers, also noctuids and geometers. Among the latter the pick was a specimen of **Cleora albescens**. If this plant (it is really a weed) could be persuaded to flower earlier than August, the possibilities of its attraction would be almost unlimited. To all collectors of "Bugs" possessing a garden, my advice is, grow a patch of **Tansy ragwort**, and one of **Mathiola**; the flowers of the latter, except on rainy or very dull days, close up entirely, and it is therefore no use for day collecting. Honey suckle (not the wild kind) draws the **Sphingidae**, and Lilac (I only grow the white variety) attracts well; in the day time **Papilios** and clear wing moths, among them **Proserpinus clarkiae** and **ulalume**—both rather rare species usually—and towards evening many of the early appearing **Polias**, etc.

I should not omit to refer to collecting at "Sallows." I do not remember doing any "sallowing" worth mentioning in Ontario, Quebec, or on the Prairies, nor during my stay in Victoria, chiefly for lack of any convenient localities, easy of access, but since I came to Duncan, this mode of collecting has been almost a yearly event. Accompanied often by my friend and next door neighbour on Quamichan Lake, Mr. G. O. Day, I have enjoyed many profitable evenings, and without going any distance away from home. Sheets spread under the trees—some of them quite large and tall—some vigorous shaking, lamps, cyanide bottles, or pill boxes, and then often a rich and varied harvest. The noctuids usually sit dormant on the sheets long enough to allow one to pick and choose. The **Geometers**, which come in surprising numbers, have to be collected off the flowers, or flushed before it is too dark to see, and then taken in the net. All the native species of **Stretchia**, **Xylomyges**, **Perigrapha**, **Orthosia**, **Graptolitha**, **Xylena**, and other early flying species, may be taken in one good season. The season varies a good deal, according as it may be an early or late one, mild or chilly. This year (1924) some of the allow noctuids appeared before the last days of February.

In British Columbia I miss the collecting off "Milk weed;" in Ontario, Quebec, and to a lesser degree on the Prairies, the flowers proved highly attractive to butterflies, especially perhaps the larger **Argynnids**. I regret that I never tried the "Milk weed" of an evening. I wonder if any Lepidopterists present have ever taken that beautiful noctuid, **Rhodophora florida**, at the flowers of the wild evening primrose (**Oenothera biennis**). Perhaps the moth does not occur anywhere in B. C., but I noticed the plant in flower, and fairly abundant around Agassiz in August, 1922. I have taken the moth back East, and on the Prairies, and found it at rest in the daytime, partly in the closed flowers; with its pinkish primaries, it was a feast to the eyes.

In 1919 and 1921, with Mr. Day, and in 1920, with Mr. Glendenning, Mount McLean, in the Lillooet District, was visited. In the two last years we camped at 5,000 feet, and a number of trips were made to the higher elevations, and to the summit nearly 8,000 feet. I think most of our best collecting was done off flowers above the tree level, at about 7,500 feet. There are meadows of fairly level ground, quite extensive, and, on the whole, well carpeted with flowers. Some kinds were over when we were up in August, the **Anemone occidentalis** were all seeding; they were abundant from 5,500 feet up, and the heather was mostly past also. Where the flower patches were thickest, **Diurnals**, especially the "Blues," simply swarmed in 1920 (August 22nd and 23rd). It was here that I took two species of **Syngrapha**; in 1921 none were seen, I think because we were a couple of weeks ahead of the 1920 dates. The patches of flowers consisted chiefly of a large flowered Aster (**apricus**), yellow or orange daisies (**Arnica**), and another tall yellow flower (**Aplopappus**). One day in 1920 at 2 o'clock, and the second as late as 4 o'clock, **Hepialus**

**marglashani** was taken over and about one of these patches, dashing around rather wildly. I am not sure that they were attracted by the flowers to any extent; perhaps one of them was its food plant, and I forget whether I took any except on the wing. Noctuids were plentiful also in individuals—if not species—on the flowers, and one kind could be swept off a dwarf **Solidago**, only a few inches high. Yarrow or Milfoil (**Achillea**) Lupins, and Fire-weed, rather dwarfed, all three growing fairly high up, say about 6,500 feet. We did not find worth while visiting **Angelica**, and **Heracleum** flowers were quite attractive to all orders, but did not, I think, grow higher up than 5,500 feet.

In the rocky ravines, and on the slopes towards the summit, a silene occurred; this is the moss-campion, with tiny pink flowers on a greenish cushion lying close to the ground. **Lasiestras**, **Lasionyctas**, and **Orosagrotis incognita** favored this silene, sometimes half a dozen of them on one plant, and it was on this that I took all my specimens of *Autographa alta*. The beautiful "Copper," **Heodes cupreus**, could occasionally be swept off the scattered plants of *Arnica* on the slopes, but they usually preferred to sit down among the rocks in the ravines, like the *Anarta* and *Symphistis*, though in 1921 I swept some of them (the latter) off a tiny white flower, a few inches high, growing by one of the lakes at 7,500 feet.

Around our camp in 1921, especially at dusk, a number of things were taken at the Asters, these included some **Autographas**, and **Oncocnemis hayesi**, **Paroa-nigra**, and **chandleri**, also **Euxoa brocha**. Alpine collecting for **Coleoptera** did not come up to expectations, but some good species of *Cerambycidae*, were taken on Mount McLean in 1920 and 1921, and on Mount Cheam in 1922, all picked, or swept off flowers, chiefly umbelliferous plants. Two specimens of a small clear-wing moth were taken off these in 1921. In the spring of 1905, I was fortunate in being able to visit Southern California; I was down there from the end of January into May. At the beginning of February, **Autographa californica** was out in large numbers, flying about some flowering shrubs during the day in the gardens; the only other species met with were **brassicæ**, and on Catalina Island, one **biloba**; other noctuids were very scarce, with the exception of species of **Melicleptria** and allied genera. Some of these were quite common, some of considerable beauty; the flowers off which I swept them were mostly strangers to me. That exquisite "Blue," **Philotes sonorensis**, was flying with the moths in March and April. The very tiny "Blue," **Brephidium exilis**, appeared to hug the coast line. The Cacti flowers only seemed to attract small beetles. Species of **Brenthis**, **Euphydryas** and **Melitæa** were fairly abundant, and at Santa Barbara in May **Dione vanillæ** and **Junonia coenia** were not uncommon; both are handsome butterflies. Most of my collecting was done at La Jolla, near San Diego; all that country is treeless, except for the fruit orchards, and the catch made during my stay was hardly a rich one. My intention had been to deal with the results and possibilities of collecting "At Light" also, but the present paper is already unduly long.