

NOTES ON SOME ORTHOPTERA FROM THE PEACE RIVER DISTRICT OF BRITISH COLUMBIA

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It is not generally recognized that the Province of British Columbia contains a large area of prairie land lying to the east of the Rocky Mountains in the Peace River District. This northeastern corner of the province is approximately as large as the territory lying south of the main line of the Canadian Pacific Railway from the Alberta boundary near Banff to Vancouver, and Vancouver Island combined.

In this area adjoining Alberta, on latitude 56, lies the British Columbia Peace River Block containing 3,500,000 acres, where considerable settlement is taking place and some of the finest wheat and oats in North America can be grown.

The land within the British Columbia Peace River Block is gently rolling, with scattered patches of aspen, poplar and occasional areas of spruce and tamarack swamp, and is typical of the vast Peace River District, of Northwestern Alberta, of which geographically, it is a part. The mountains lie approximately one hundred miles to the west of the British Columbia Peace River Block.

The collection of orthoptera secured in 1927 from this region, as might be expected, does not contain many species, but is, nevertheless, of considerable interest, as it extends the northern known range of some of the species considerably and includes at least one new record for British Columbia.

The only other part of the Province, where collecting has been done, in which we frequently find prairie species and races, is the East Kootenay and Upper Columbia valleys, lying between the Rocky Mountains on the east and the Selkirks on the west. Here it is even more surprising to find prairie forms than it is in the Peace River District which is, geographically, the northwestern limit of the Great Plains with no intervening mountain chain. Certain similarities in the orthopterous forms of these two regions will be discussed further, when dealing with the species recorded from the Peace River Block, which are here enumerated. Most of the specimens were collected by P. N. Vroom.

Acrydium granulatum Kirby:—This grouse-locust was found commonly and specimens were collected at Pouce Coupe, Rolla, and Fort St. John. It occurs in Canada from the Atlantic to the Pacific.

Acrydium acadicum acadicum (Scudder):—There is a record of this species from Kaslo on the Kootenay Lake by A. N. Caudell, 1913, recorded

as **A. ornatum** (Say). This is the only previous record of this species from British Columbia. Three specimens were taken at Pouce Coupe and Rolla. It occurs fairly commonly from Alberta to Quebec.

Chloealtis conspersa (Harris):—The Peace River Block is an ideal location for this species which is particularly fond of inhabiting the coarse vegetation beneath aspen poplars, and in some warm, dry ravines was very numerous. The specimens secured were slightly smaller and darker than those collected in the Chilcotin District. It occurs locally throughout the province from the eastern slopes of the coast mountains to Alberta. Specimens were taken at Pouce Coupe and Rolla.

Chloealtis abdominalis (Thomas):—This species was taken at Rolla. It did not appear to be as common as **conspersa**, but is by far the commoner of the two species to the west of the mountains particularly in the southern interior.

Gomphocerus clavatus Thomas:—This was one of the most plentiful species in the Peace River Block and numerous specimens were taken at Pouce Coupe, Rolla, and Fort St. John.

This is a common species in Alberta and the Canadian prairies, and has been previously recorded from British Columbia only from the East Kootenay Valley in 1926, where it has evidently become established after making its way through some of the passes of the Rocky Mountain range. There are no records of it from west of the Selkirks.

Chorthippus curtipennis (Harris):—This is a common species in British Columbia, but to pick out typical specimens of either of its geographic races presents considerable difficulty. The majority of the material examined is either intermediate between **curtipennis curtipennis** (Harris) and **curtipennis oregonensis** (Scudder), or atypical, in more or less degree, of one or the other race.

Three males were collected at Pouce Coupe. These are decidedly small for the species and have the wings projecting slightly beyond the end of the abdomen. I would place them as a typical **curtipennis curtipennis** (Harris), the wings being too short for typical material. Typical specimens of **curtipennis curtipennis** (Harris), with the wings of the males projecting well beyond the end of their abdomens, have been collected in the Chilcotin district and at Penticton, Creston, and Cranbrook, but are not common.

Typical **curtipennis oregonensis** (Scudder) from Corvallis and Forest Grove, Oregon, has the wings in the male less than the combined length of the head and pronotum, reaching to about the middle of the abdomen. No specimens with such short wings have been recorded from British Columbia, but a fair number with wings falling just short of the tip of

the abdomen in the male, and with comparatively short antennae, have been collected in the Chilcotin District and at Barkerville, Anahim Lake, Rockcreek, and Cranbrook, and may be considered very nearly typical **curtipennis oregonensis** (Scudder).

Arphia frigida Scudder:—This species is found from Manitoba to Alberta and from the Northwest Territories to the Yukon and Alaska. In British Columbia it has been recorded from Telegraph Creek on latitude 58, from Pouce Coupe and Fort St. John in the Peace River Block, and from the East Kootenay and Upper Columbia valleys. There is also a questionable record from Victoria on Vancouver Island.

The specimens collected are all yellow-winged, rather dark in colouration, and lack the light yellow stripe down the centre of the closed tegmina, so conspicuous in some specimens. This is an early spring species hibernating in the nymph stage.

Camnula pellucida (Scudder):—This is the species of main economic importance in the Peace River Block and has, during the past few years, caused very serious damage to the grain crops. From 1923 to 1926 it was in outbreak form throughout the Peace River district of Alberta and British Columbia, and did enormous damage to the grain crops of the region. The cold, heavy rains in the spring of 1927 completely wiped out the young grasshoppers soon after hatching. Although enormous numbers hatched and great loss to the crops was anticipated, the mortality, from the weather conditions, was so complete that no damage was done and the species was quite scarce.

As is usual with the species, the dry, overgrazed road sides and worn out pastures were chosen for oviposition. This is one of the main injurious species in North America and occurs in Canada from the Atlantic to the Pacific. In British Columbia it has been found wherever collecting has been done.

Pardalophora apiculata (Harris):—This is another species occurring early in the spring. It is one of the largest of the British Columbia orthoptera, and decidedly rare west of the mountains, only a few specimens from the Chilcotin district having been found. In the Peace River Block it is apparently quite numerous and a good series was collected. It has been recorded in Canada from the Atlantic to the Pacific and north to the Northwest Territory. Specimens were taken at Pouce Coupe, Rolla, and Fort St. John.

Trimerotropis campestris McNeill:—A single specimen was secured on the banks of the Peace River near Rolla Landing and was the only specimen of this genus secured in the Peace River Block. This specimen had bright red hind tibiae similar to those from the prairies of Southern Alberta and from the East Kootenay and Upper Columbia Valleys. To the

west of the Selkirks, in the southern interior of British Columbia, the tibiae of this species are always yellow or yellowish-green. It is an extremely common species on the cattle ranges of the southern interior from the Nicola valley to the Chilcotin district.

Circotettix verruculatus (Kirby):—The specimens secured were typical **verruculatus**, which is an eastern species extending westward to the Rocky Mountains, and occurring very doubtfully to the west of the mountains where its place is taken by **Circotettix suffusus** (Scudder). It was found commonly on the banks of the Peace River near Rolla.

Aerochoreutes carlinianus carlinianus (Thomas):—Two specimens were secured in 1927, one at Rolla and one at Fort St. John. Both were captured on the dry open banks of the Peace River.

These specimens are typical **carlinianus carlinianus** (Thomas). This species is most plentiful in the Chilcotin district where we find the majority to be intermediate between **carlinianus carlinianus** (Thomas), and **carlinianus strepitus** Rehn. No typical **carlinianus strepitus** Rehn has as yet been taken in the province.

Melanoplus brunneri Scudder:—This was the chief species of **Melanoplus** found in this area, where it appears to replace **Melanoplus mexicanus atlanis** (Riley) which was not present. **Melanoplus mexicanus atlanis** (Riley) does not occur in any numbers north of the Chilcotin District and we find in the Bulkley Valley and northward it is replaced by **Melanoplus brunneri** Scudder. Considerable damage was done by this species in the Peace River Block during the recent grasshopper outbreak. Specimens were taken at Pouce Coupe, Rolla and Fort St. John.

Melanoplus dodgei huroni (Blatchley):—A good series of this species was secured, and it was quite plentiful in dry locations in the poplar woods. This is a northern species in British Columbia and becomes increasingly numerous from the Chilcotin District northward to the Nechako and Bulkley Valleys and throughout the Peace River country.

Melanoplus borealis monticola Scudder. This race of **borealis** was taken at Fort St. John in swampy bush land. The specimens taken were large and brightly coloured and similar in every way to those found in the interior of the province. **Melanoplus borealis borealis** (Fieber) has been taken in the coastal bogs at Prince Rupert and **Melanoplus borealis junius** (Dodge) at Anahim Lake in the northern Chilcotin district.

Melanoplus bivittatus (Say):—This is a very common species throughout Canada and is found in British Columbia in all localities.

Specimens were seen at Fort St. John. All noted had bright blue hind tibiae, which is common to the prairie specimens. In the interior of British Columbia every shade of red and blue tibiae can be found, some being almost black.

Metrioptera sphagnum (F. Walker):—This small, brightly coloured Dectid was very abundant in the Peace River country and the males could be heard stridulating amongst the low bushes and weeds on any warm day in August. No females were found. This is the first record of this species for British Columbia. It is plentiful in the Alberta foothills between Banff and Calgary. Specimens were collected at Pouce Coupe, Rolla, and Fort St. John.

Ceuthophilus sp:—A single species of the genus was taken in the Peace River Block. It was found commonly at Pouce Coupe and Rolla under logs and stones, and a large series was secure. Definite determination has not as yet been made.

ON THE EARLY STAGES OF **PLATYPTILIA PUNCTIDACTYLA**

(Pterophoridae-Lepid)

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I am taking the opportunity of this meeting of the British Columbia Entomological Society to answer a kind of challenge of Doctors Barnes and Lindsey in their "Monograph of the Pterophoridae of America, North of Mexico," where it is stated in regard to **Platyptilia pica** and **Platyptilia punctidactyla** that nothing is known of the early stages and that "an interesting and valuable piece of biological work for the entomologists of British Columbia lies in the breeding of these species."

I may mention that it was only in October, 1927 I found these remarks in Barnes' and Lindsey's work.

To hark back a bit, I may explain that for several years past, I had noticed that many of the seed capsules of one of our common spring flowers namely **Dodecatheon pauciflorum**, commonly called the Shooting Star, had small holes eaten into them, one hole in each capsule so attacked, and I always failed to find a caterpillar inside. However, in the spring of 1926 I was fortunate enough to find a larva outside the pod feeding with its head inside. With this guidance as to the habits of the