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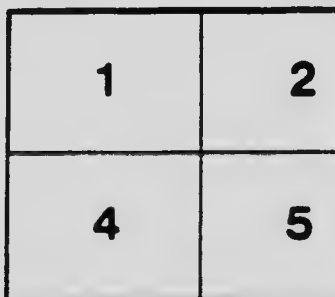
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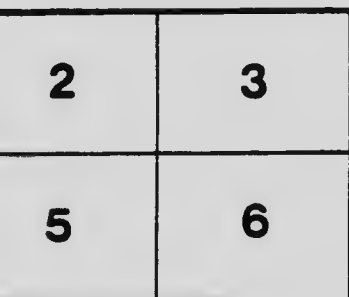
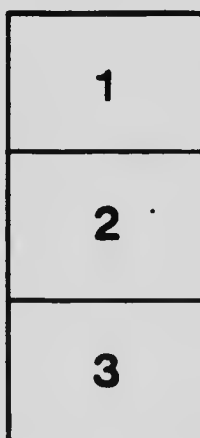
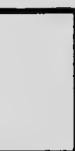
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REPORT
OF THE
CANADIAN ARCTIC EXPEDITION
1913-18

VOLUME III: INSECTS

PART J: ORTHOPTERA

By E. M. WALKER

SOUTHERN PARTY, 1913-16

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OTTAWA
THOMAS MULVEY
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1920

Issued Sept. 4th, 1920

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- Part B: NEUROPTEROID INSECTS. By Nathan Banks. (*Issued July 11, 1919*).
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By C. W. Long.
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ARCTIC. By Frits Johansen. (*In preparation*).

REPORT
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CANADIAN ARCTIC EXPEDITION
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PART J: ORTHOPTERA

By E. M. WALKER

SOUTHERN PARTY, 1913-16



OTTAWA
THOMAS MULVEY
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1920

Orthoptera Collected in the Canadian Arctic.

By E. M. WALKER.

University of Toronto.

No orthoptera were received among the insects collected by the Canadian Arctic Expedition 1913-18, but we have received a single grasshopper collected by Mr. V. Stefánsson in 1911. The following is a note on this insect.

FAMILY ACRIDIDAE

Melanoplus frigidus (Bohemius).

A single female of this species in poor condition, bears label giving the following data:

"No. 1670 [E. J.], Langton bay (Franklin bay), Northwest Territories, summer of 1911. V. Stefánsson."

In a note to the writer Dr. R. M. Anderson states that "This specimen, brought to us with other insect specimens in 1911 from our old house at Langton bay by a former Eskimo employée, while taken in the Langton bay region, was most probably picked up from twenty to forty miles inland on the Horton river, south side of the Melville mountains, a range of hills about 1,000 feet high, skirting the south side of Franklin bay."

The capture of this Palearctic species in the above locality was not unexpected as several specimens were taken by Mr. J. M. Jessup on the International boundary, Alaska, lat. 69° 20' N., long. 141° W., on Aug. 8, 1912 (Caudell, Can. J. Zool., vol. XLVII, 1915, p. 160).

On account of the difficulty of determining species of this group from the female sex alone, the writer submitted this specimen to Mr. Morgan Hebard, who is engaged in a revision of the Melanopli. I had determined it as *Podisma frigidum* (Bohemius) with some doubt, as it differs slightly in the form of the valves of the ovipositor from the single female European specimen I have of this species, but Mr. Hebard has confirmed the determination. In a letter to the writer he says "You will note the transfer of this species to the genus *Melanoplus*. I am bringing out the data on this change in a paper which will be published shortly."¹ I have been likewise of the opinion, for some time, that this species is a true *Melanoplus*, and it is of special interest as being the only species of this genus known from the Old World, where it is widely distributed in northern regions, having been taken in Norway, Lapland and Siberia, and as a glacial relict in the Swiss Alps and the Tyrol.²

Three other species of Orthoptera are definitely recorded from the Arctic regions of North America. These are *Gomphoceris clavatus* Thomas, *Melanoplus borealis* (Fieber) and *M. fasciatus* (Barstons-Walker).

Gomphoceris clavatus was recorded by Caudell (*loc. cit.*) from the same locality in Alaska where *M. frigidus* was taken. It is a widely distributed species, ranging from eastern Manitoba to the Rocky Mountains and southward to Nebraska, Kansas, Colorado and New Mexico. It is found at high elevations in the mountains of Colorado, Wyoming, Idaho and New Mexico. The genus *Gomphoceris* is of Palearctic origin, *G. clavatus* being the only American species.

Melanoplus borealis has been until very recently considered as a typically arctic form. It has been recorded from Greenland (Fieber, Lotos, III 1853).

¹Since the above was written a preliminary discussion of this subject has appeared in the following paper by Mr. Hebard: "New Genera and Species of Melanopli found within the United States." Trans. Am. Ent. Soc., XIV, pp. 257-298, 1919.

²Hebard (*op. cit.*) states that the recently described *Podisma prosseni* Puschig from the Eisenhut in Carinthia is also a *Melanoplus*.

Labrador, Hudson Bay and Alaska. The specimens described by Seudder in his "Revision of the Melanopli" came from the Esquimaux village of Ramah, on the coast of Labrador, lat. 57° N., while the Alaska specimens recorded by Caudell (Pap. Harriman Alaska Exp., Proc. Wash. Acad. Sc., vol. II, pp. 511-512, 1900) were taken at Kukak Bay, Alaska Peninsula.

I have a large series of this species from Nain (lat. $56^{\circ} 30''$) and Hopedale (lat. $55^{\circ} 24''$), Coast of Labrador, an examination of which convinced me that they are not specifically distinct from *M. extremus* Walk., a species also recorded from Labrador and Arctic America, which was placed by Seudder in a different section of the genus. On submitting this question to Mr. Hebard, I learned that he had already placed *M. extremus* as a race of *borealis* in his unpublished notes on this group, and Messrs. Morse and Blatchley are also of the opinion that the two forms are conspecific. This being the case, *M. borealis*, as a species, is by no means exclusively arctic, but ranges over nearly the whole of Canada and extends also into various parts of the northern United States. It is however, a typically boreal form and probably reaches its highest development in the Hudsonian zone.

Melanoplus fasciatus is a species of similar range and has also been recorded from Nain, Labrador, so that it may be fairly included in the arctic fauna.

Several other species of Acrididae have been reported from "Arctic America" chiefly by F. Walker (Cat. Derm. Salt. Brit. Mus., III-IV, 1869-71), but in the absence of definite localities it is uncertain whether they were taken in the Arctic zone proper or the Hudsonian. These are *Acrydium granulatum* Kirby, *Chorthippus curtispennis* (Harr.), *Hippiscus apiculatus* (Harr.) and *Melanoplus femur-rubrum* (DeGeer). The type locality of *A. granulatum* is in lat. 65° , and it was taken by Adam White (Richardson, Arctic Search. Exp., II, p. 360, 1851) at Fort Simpson (lat. $61^{\circ} 30'$) and at the junction of the Mackenzie and Slave rivers, so that it cannot be certainly regarded as arctic on the basis of these records. The other records are indefinite and that of *M. femur-rubrum* almost certainly erroneous, the species referred to being probably *M. borealis*.

A few other Orthoptera may be mentioned as very possibly ranging into the arctic regions. *Melanoplus kennicottii* Seudd. and *M. atlantis* (Riley) were taken by Kennicott on the Yukon river, Alaska. The former has also been recorded from Saskatchewan, Alberta and Montana, while the latter is widely distributed over the greater part of North America, extending into Mexico.

Melanoplus bruneri Seudd. (*M. alaskanus* Seudd.) is also recorded from Alaska and is widely distributed in Canada in the Boreal region.

Acrydium bruneri Boliver (which is perhaps the true *A. granulatum* (Kirby), and *Melanoplus bivittatus* Say are recorded from the Hudson bay region, while *Circotettix verruculatus* (Kirby) ranges far north, the type specimen having come from lat. 57° N.

All the species mentioned above are locusts or "short-horned grasshoppers" (Acrididae), but there is one species of "long-horned grasshopper" (Tettigoniidae), which has some claim to membership in the Arctic Fauna. This is *Idionotus sphagnorum* (Walk.) (syn. *I. brevipennis*¹ Caud., *Platyceles fletcheri* Caud.), which was originally described from St. Martin's Falls, Hudson Bay. It was redescribed by Caudell (Proc. U.S. Nat. Mus., XXXII, p. 396, 1907) as *Idionotus brevipennis* from a single male, taken by Kennicott in "Arctic America" (Caudell, l.c.). This same specimen had already been mentioned but not described by Seudder (Can. Ent., XXVI, p. 182, 1894) in his characterization of the genus *Idionotus*, and is stated to have been "collected by Kennicott somewhere on his explorations in or going to Alaska." This species is now known also from northwestern Ontario, Manitoba and Alberta.

¹I am indebted to Mr. W. S. Blatchley for the synonymy of *Idionotus brevipennis* Caud. with *Decticus sphagnorum* Walk. I had long suspected this to be the case, as we have only one northern Decticine, as far as known.

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