ten be seen attached to particles of wood or even to the breathing tubes of one another, by the grasping mechanism of the anal pro-legs.

Acknowledgement

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Also to Dr. G. E. Shewell of the Division of Entomology at Ottawa for verifying our tentative identification of this fly.

A PRELIMINARY LIST OF THE BIBIONIDAE OF BRITISH COLUMBIA AND SOME LOCALITY RECORDS

by J. K. Jacob
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The **Bibionidae** or March flies are slender flies of small to medium size. The adults are frequently very common, sometimes being attracted to blossoming fruit trees, particularly the Pomes. The name "March flies" has been given the family in this country because of the frequent occurrence of some species in large numbers during the month of March, at which time they attract considerable attention.

The very primitive larvae are dark colored, tough, and with well developed heads. They are often gregarious and feed on decaying vegetable matter, manure, or on the roots of grasses, grains, vegetables, and other plants.

Until very recently little systematic work in North America has been done on the Bibionidae. The first notable effort was made by W. L. McAtee in 1921. Later, in 1936, M. T. James published a paper entitled "Some New Western Bibionidae." A large number of short papers have also been published in recent years. During the last two years a complete revision of the known North American Bibionidae has been made by D. E. Hardy of the Utah Agricultural College from which much of the material for this paper was taken.

The family is separated from all other Dipterous families by the following characters: antennae composed of eight to twelve segments and placed below the compound eyes, usually close to the oral margin; eyes separated; ocelli present; mesonotal suture transverse; costa vein ends at or near the wing tip; discal cell absent; tibial apical spurs present.

Characters of wing venation and of the tibiae are used in separating the genera. Of the seven genera listed in Curran's "North American Diptera" six are recorded for British Columbia.

In this list there are recorded 30 species and 5 varieties together with their distribution. The records are those of numerous collectors and were obtained principally from the Canadian National Museum, D. E. Hardy, C. Garrett, the University of British Columbia and my own collections. Therefore few of the specimens whose records are listed below are in my own or in the University collection.

I wish to thank especially Mr. G. E. Shewell of the Division of

Systematic Entomology at Ottawa and Mr. D. E. Hardy of Utah State Agricultural College for determinations and records.

Order **Diptera.**

Family **Bibionidae.**

Bibiodes aestiva Mel.—Summerland.
Bibio albipennis Say—Agassiz, Creston, Kaslo, Lillooet, Minnie Lake, Oliver, Royal Oak, Saanich, Salmon Arm, Vernon, Victoria.
Bibio albipennis hirtus Lw.—Penticton, Niskonlith Lake, Pt. Roberts, Vancouver.
Bibio albipennis Say verging toward **afer** McAtee—Niskonlith Lake.
Bibio afer McAtee—Agassiz, Vancouver.
Bibio basalis Lw—Seton Lake, Cranbrook.
Bibio columbiaensis Hardy—Jesmond.
Bibio currani Hardy (**Bibio lacteipennis** Curran)—Ground Hog Basin, Revelstoke Mtn.
Bibio currani nigrita Curran—Revelstoke Mtn.
Bibio femoratus Wied.—Copper Mtn.
Bibio fluginata Hardy—Salmon Arm.
Bibio fumipennis Wlk.—Barkerville.
Bibio hirtus Lw. (See Note 1.)—Agassiz, Aspen Grove, Boswell, Gordon Head, Kamloops, Kootenay Flats, Lillooet, Minnie Lake, Oliver, Royal Oak, Saanich, Vancouver, Victoria.
Bibio holti McAtee—Yahk.
Bibio inaequalis (See Note 4.)
Bibio jacobi Hardy—Dunn Pk.
Bibio rufitibialis Hardy—Dunn Pk.
Bibio labradorensis Johns.—Hedley.
Bibio nervosus Lw.—Cranbrook, Kaslo, Laggan, Lac du Bois (Kamloops), Penticton, Revelstoke, Royal Oak, Vancouver, Vernon.
Bibio nigrifemoratus Hardy—Monte Lake.
Bibio sericata Hardy—Cranbrook, Hedley, Oliver, Yahk.
Bibio signatus Hardy—Revelstoke, Vancouver.
Bibio slossonae Cock—Cranbrook, Haney, Hazelton, Summerland.
Bibio variabilis Lw.—Agassiz, Alta Lake, Copper Mtn., Kaslo, Pender Harbour, Penticton, Prince Rupert, Revelstoke, Ucluelet, Vancouver, Victoria.
Bibio xanthopus Wied.—Courtney, Jesmond, Kamloops, Vancouver.
Bibio xanthopus palliatus McAtee—Vancouver.
Bibio—a species near **kansensis** James—Vernon.
Philia Meigen 1800 (**Dilophus** Meigen 1803).
Philia caurinus McAtee—Agassiz, Jesmond, Kaslo, Keremeos, Minnie Lake, Nanaimo, Revelstoke, Saanich, Salmon Arm, Sicamous, Vancouver, Victoria, Cranbrook.
Philia obesulus Lw.—Glacier.
Philia serotinus Loew. (See Note 4.)
Philia stigmaterus Say—Mt. Cheam, Vancouver, Fernie.
Philia tibialis Lw.—Cranbrook, Crows Nest, Banff, Keremeos, Michel, Oliver.
Hesperium brevifrons Wlk. (See Note 2.)
Plecia heteroptera Say (See Note 2.)
Cramptonomyia spenceri Alex. (See Note 3.)—Langley Prairie, Vancouver.

Note 1: In McAtee's "Notes on Nearctic Bibionidae" (1921) this species appears as **Bibio hirtus** Lw. Specimens in the Canadian National Museum are so labelled. The specimens in my collection were labelled **Bibio albipennis hirtus** Lw. Whether this is a change in nomenclature and whether they are two distinct species I have not been able to find out. Hardy does not refer to **B. hirtus** at all.

Note 2: The two species **Hesperium brevifrons** Wlk. and **Plecia heteroptera** Say are believed to be present in this province but owing to the difficulty of obtaining certain obscure records they still remain as doubtful records.

Note 3: In a previous paper of mine (1937) this species was placed in the Bibionidae on information received from Dr. C. P. Alexander. Since then Alexander has placed it in the family Pachyneuridae in which **Cramptonomyia** resembles certain genera more closely than genera in the Bibionidae. Another species of this genus has recently been described from Japan.

Note 4: **Bibio inaequalis** and **B. serotinus.** As specimens of these two species were not returned to me after being identified I am unable to give their distributional data.

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ECTOPARASITES OF DEER IN BRITISH COLUMBIA

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There are three species of deer in British Columbia whose identity and range is briefly as follows:-

1. The Coast deer or Columbia Black-Tailed deer **Odocoileus**