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INSECTS COLLECTED FROM AN ALPINE-SUBALPINE REGION IN SE BRITISH COLUMBIA

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ABSTRACT

Insects were caught in a subalpine area of southeastern British Columbia. The list consists of 23 spp. and 37 genera, in families of five orders. The insects were collected during July and August, 1975 as part of a larger study of the ecology of mountain caribou in the Poplar Creek area, north of Nelson, B.C.

INTRODUCTION

There are few identified collections of insects in the alpine-subalpine environment of British Columbia. This is a report on insects collected in the central Selkirk Mountains of British Columbia during July and August 1975. The paper by Allan (1969) is most similar to the present report, although his collections were mainly from lower elevations and limited to the family Syrphidae. Other related studies, but not from British Columbia, include those of Chapman (1954), Dodge and Seago (1954) and Mani (1955).

The insects reported here were obtained during a survey for potential pests of mountain caribou (*Rangifer tarandus montanus*) inhabiting the alpine-subalpine environment at the same time of the year. The caribou is the subject of a study by Harling and Snyder (unpublished).

METHODS AND STUDY AREA

The insects were sampled between 10 July and 27 August, 1975 with pieces of wire screen (40x50 cm), smeared with grease and placed on supports about 0.9 m above ground level. Additional collections were made with hand nets and a Malaise trap. The insects were first identified in the laboratory and the identifications verified by the Biosystematics Research Institute, Canada Department of Agriculture, Ottawa, Ontario.

General meteorological data were obtained from maximum and minimum thermometers, a sling psychrometer, and a simple rain gauge; wind speed and direction were estimated at the time when samples were collected from the traps.

The collection was mainly from the extreme north fork at the west end of the headwaters of Poplar Creek (50° 21′ N, 117° 21′ W) in southeastern British Columbia. The area comprised alpine meadows, talus slopes, receding snow patches and the upper fringe of climax stands of englemann spruce (*Picea englemanni*) and subalpine fir (*Abies lasiocarpa*). The collections were made between 1500 and 1650 m elevation.

RESULTS

Table I lists the insects collected during the study. Only those taxa verified by the Biosystematics Research Institute have been included. Dipterans alone made up about 78% of the catch. The families Bibionidae, Syrphidae, Tabanidae and Tipulidae comprised more than 50% of all the Dipterans caught. Hemip-

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Table 1. Insects collected from the Poplar Creek area of SE British Columbia, July and August, 1975.

COLEOPTERA	
Buprestidae	**Agrilus** sp.
	Melanophila drummondi (Kby.)
Cantharidae	**Podabrus scaber** (LeC.)
Carabidae	**Phloeopterus** sp.
Cerambycidae	**Anoplodera aspera** (LeC.)
	Xylotrechus longitarsis (Csy.)
Chrysomelidae	**Chryomela** sp.
	Syneta subalpina (Edwards)
Coccinellidae	
Elateridae	**Ctenicera hoppingi** (Van Dyke)
	Ctenicera sylvatica (Van Dyke)
Lycidae	**Dictyopterus** sp.
Scarabeidae	**Aphodius** sp.
Scolytidae	**Orthotomicus** sp.
	Trypodendron lineatum (Oliv.)
Cryphalini	
Scraptiidae	**Anaspis** sp.
Staphylinidae	**Ptomaphagus** sp.
Omaliinae	
DIPTERA	
Anthomyiidae	**Hylemya** sp.
	Hylemya (Pegohylemia) fugax (Meigen)
	Hylemya (Botanophila) spinidens (Malloch)
Bibionidae	**Bibio** sp.
Calliphoridae	**Phormia regina** (Mg.)
Drosophilidae	**Clastopteromyia inversa** (Walker)
Empididae	**Drapteris** sp.
	Empis brachysoma (Coquillett)
Tachydrominae	
Muscidae	**Lasiops medius** (Stein) ♂
Rhagionidae	**Symphoromyia atripes** (Bigot)
Syrphidae	**Chrysotoxum** sp. ♂
	Melangyna sp. ♂
	Syrphus torvus (O.S.) ♂
Tabanidae	**Hybomitra osburni** (Hine)
Tachinidae	**Nowickia pilosa**
Tipulidae	
Limoniinae	
Tipulinae	
HEMIPTERA	
Miridae	**Irbisia nigripes** (Kgnt)
	Lygus varius (Kgnt)
HYMENOPTERA	
Bombidae	**Pyrobombus (Pryrobambus) flavifrons flavifrons** (Cresson)
Colletidae	**Hylaeus** sp.
Siricidae	**Urocerus gigas flavicornis** (F.)
Tenthredinidae	**Tenthredo** sp.
	Dolerus (Dolerus) sp.
Pamphiliidae	**Pamphilius** sp.
LEPIDOPTERA	
Nymphalidae	**Boloria epithore** (Edwards)

terans and Lepidopterans each comprised less than 2% of the total; Coleopterans and Hymenopterans represented the rest.

The temperature during the study ranged from 3.4°C to 23.9°C with humidity from 43-88%. The maximum precipitation recorded on a sampling day was 0.48 cm and on other days was often zero. Wind speed varied from force 0 to force 2 and was usually from the south.

Catches were largest during periods of high temperature, low precipitation, and low humidity. No clear trend was noted with reference to wind speed or direction. Other authors (Chapman, 1954; Mani, 1962) have confirmed that the meteorological factors recorded here do have a marked effect on insect activity at high elevations.

DISCUSSION

At least an additional 25 species were caught but were not identified by the Biosystematics Research Institute because they were damaged in transit.

The methods employed in this investigation were relatively simple, so that the analysis of relative abundance could not be sophisticated. However, the predominance of Dipterans in relation to other groups was significant and consistent with other surveys of alpine insect fauna (Chapman, 1954; Dodge and Seago, 1954; Mani, 1955, 1962). Among families, the Syrphidae and Tabanidae were abundant as also reported by Chapman (1954) but the Tachinidae which he found to be abundant were represented here by a single specimen.

A number of the Dipteran species listed in Table I may be associated with the caribou population of the area. In particular, the blowfly *(Phormia regina* (Mg.)) and the tabanid *(Hybomitra osburni* (Hine)) could be potential caribou pests because related genera have been confirmed as large mammal pests (Prior, 1968). Bot and warble flies parasitize caribou (Bergerud, 1961; Low, 1964; Layser, 1974) and although no such species were recorded in our samples, a close relative (the tachinid *Nowickia pilosa*) was caught. The mountain caribou continue to be studied in the area and it is hoped that some confirmation of their insect pests will be forthcoming.

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