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# A review of mosquito collecting in the Yukon

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The first formal record of a mosquito collected in the Yukon was in 1904 when J. Keele caught *Anopheles occidentalis* in the Mayo River valley (Dyar 1921). In 1916 three females of *Aedes nearcticus* were collected on Herschel Island, off the north coast of the Yukon, by Frits Johansen of the Canadian Arctic Expedition (Dyar 1919). These species, now known as *An. earlei* and *Ae. impiger* respectively, were identified at the time by Dr. Harrison Dyar at the United States National Museum in Washington.

Dyar, himself, visited the Yukon in June and July of 1919. He travelled from Carcross in the south, along the Yukon valley to Dawson which is less than half way to Herschel Island. He recorded 16 species (Dyar 1920, 1921) including nearly 2,000 specimens of *Ae. cataphylla* which he found to be the dominant species with *Ae. campestris, Ae. communis* and *Ae. punctor* also common (Table 1). He described three new species from his Yukon material: *Ae. nearcticus* from Herschel Island, the Northwest Territories and Alaska (Dyar 1919); *Ae. callithotrys* from Whitehorse and Takheena River in the Yukon and from Alaska; and *Ae. mercurator* from 65 specimens collected around Dawson (Dyar 1920). He later synonymised *Ae. callithotrys* with *Ae. campestris* (Dyar 1928).

By the 1920s Whitehorse was attracting tourists and, in 1926, presumably as a result of their complaints, Eric Hearle, who had already reduced the mosquito nuisance in the Lower Fraser Valley of B.C. and the resorts of Banff and Lake Louise in Alberta, was invited to make recommendations on controlling mosquitoes in the Yukon (Hearle 1927). He probably collected adults and larvae when he assessed the problem around Whitehorse.

The Dominion Entomologist, Arthur Gibson, reported on mosquito control in Canada from 1923–1941 to the Annual Meetings of the New Jersey Mosquito Control Association, but did not refer to any work in the Yukon.

From 1947 to 1950, mosquitoes were collected from several arctic and subarctic localities as part of the Northern Insect Survey, a joint endeavour of the Canada Department of Agriculture and the Department of National Defense. An Interim Report by Freeman (1952) of the mosquitoes obtained during the Survey consisted mainly of distribution maps. The 16 species reared from sites in the Yukon were mainly from Dawson or Whitehorse. Vockeroth (1954a) addressed the difficult problem of identifying the females and discussed their distribution. *Ae. nigripes* was not found in the Yukon during the Survey but he thought it was probably present because it is the most abundant species elsewhere in the arctic. Vockeroth (1954b) examined the type specimens of several arctic species. He pointed out that mosquitoes identified up to that time as *Ae. nearcticus* were in fact *Ae. impiger* and that the specimens from Dawson and elsewhere, identified in the Canadian National Collection as *Ae. impiger,* belonged to a new species which he described and named *Ae. implicatus.*

In his guide to the mosquito larvae of Western Canada, Rempel (1950) noted that 8 to 10 of the species in the guide occurred in the Yukon. He did not refer to collecting there himself but he may have seen representative specimens in collections loaned to him from the Canadian National Collection in Ottawa and the U.S. National Museum in Washington.

In the summers of 1949 and 1950, Colin Curtis, an entomologist from the Veterinary and Medical Entomology Laboratory at Kamloops, B.C., collected 21 species around Whitehorse and Watson Lake (Table 1). He noted that although *Ae. cataphylla* was common, the predominant pest mosquitoes were *Ae. communis* followed by *Ae. punctor* and *Ae. pionips* (Curtis 1953).

Dr. D.M. McLean, a medical microbiologist from the University of British Columbia, collected mosquitoes in northern B.C. and the Yukon during several seasons in a survey for mosquito-borne encephalitis viruses. He collected mainly adults and some larvae at about a dozen locations in the boreal forest region from Marsh Lake near Whitehorse in the southeast to an area near the Dempster Highway at 67°N and 137°W. He found seven species infected with viruses: *Ae. canadensis, Ae. cinereus, Ae. communis, Ae. hexodontus, Ae. nigripes, Ae. punctor,* and *Cs. inornata* (McLean, Judd & Shives 1981; McLean & Lester 1984).

One of the largest collections of mosquitoes from the Yukon was made in 1972 and 1973 by John Nelson, a Master of Pest Management student at Simon Fraser University, Burnaby, B.C. He set up New Jersey light traps and bite sampling stations at 28 sites from Watson Lake in the south to Old Crow within the Arctic Circle (Nelson 1977). Of about 27,000 specimens caught by him in 1972, the commonest biting species were *Ae. pionips, Ae. hexodontus, Ae. cataphylla, Ae. communis, Ae. campestris,* and *Ae. nigripes,* in that order, although it probably varied considerably from place to place. In addition to many of the species found by Dyar and Curtis, he listed nine more, five of them verified by Wood, Dang & Ellis (1979) and Wood (1989, personal communication), and four others, three of which are probably correct (Table 1), bringing the number of mosquito species in the Territory to about 30.

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**Table 1**
Mosquitoes recorded from the Yukon Territory

Dyar's species
- *Anopheles earlei* (*occidentalis**)
- *Aedes campestris* (*callithotrys**)
- *Ae. cataphylla*
- *Ae. cinereus*
- *Ae. communis*
- *Ae. excrucians*
- *Ae. fitchii*
- *Ae. impiger* (*nearcticus**)
- *Ae. mercurator*
- *Ae. pionips*
- *Ae. pullatus*
- *Ae. punctor*
- *Ae. stimulans* (Dyar's reference to it in the Yukon should probably be to *Ae. mercurator* Wood, Dang & Ellis 1979)
- *Culiseta alaskaensis*
- *Cs. impatiens*
- *Cs. incidens*
- *Cs. morsitans* (*dyari**)

Curtis's additional species
- *Ae. canadensis*
- *Ae. diantaeus*
- *Ae. flavescens*
- *Ae. hexodontus*
- *Ae. nigripes*
- *Ae. riparius*
- *Culex territans* (*apicalis**)

Nelson's additional species
- *Ae. decticus*
- *Ae. intrudens*
- *Ae. implicatus*
- *Ae. vexans*
- *Cs. inornata*

The following 4 of Nelson's species were not recorded as occurring in the Yukon by Wood, Dang & Ellis 1979 and Wood, 1989, Personal Communication. The last three probably do occur there, but *Ae. sticticus* has not been found north of Terrace, B.C., in Western Canada.
- *Ae. sticticus*
- *Ae. euedes*
- *Ae. provocans*
- *Cx. tarsalis*

* Names in parentheses were used in the publications referred to in the text.