

## ARCTIC CORNER

### *News about studies of arctic insects*

*Arctic Corner* provides a forum for news of particular arctic interest, replacing the Biological Survey's newsletter *Arctic Insect News* (1990–2000). Contributions to *Arctic Corner* are welcomed by the Editor (see inside front cover).

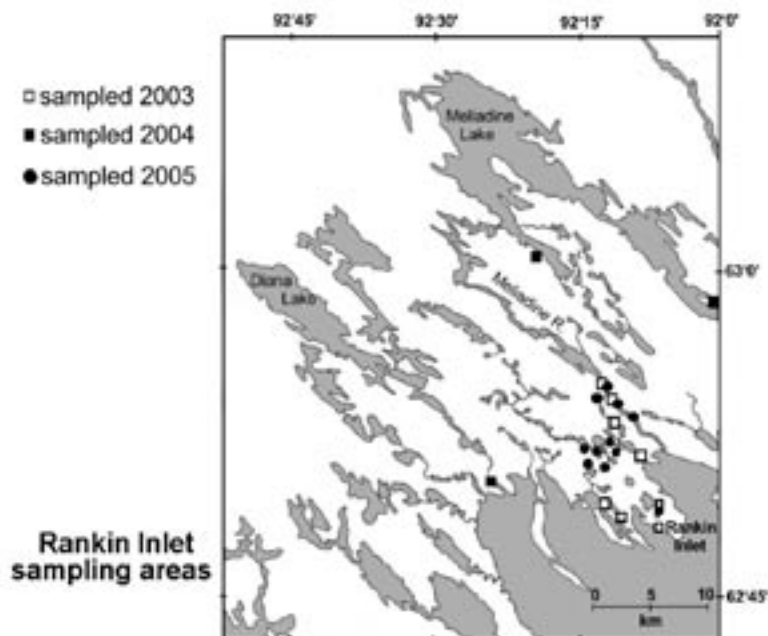
### Mayflies and Muscids: Update on the Insects of the Arctic project

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A project to survey insects in and near major waterways of the Canadian Central Barrens was started in 2000 by Dr. Doug Currie (ROM) and Dr. Donna Giberson (UPEI). The intent was to sample inaccessible regions between the Mackenzie River and Hudson Bay to fill in some gaps in distribution records for certain target insect groups (Diptera: Simuliidae and other families, Ephemeroptera, Plecoptera, Trichoptera) and to collect material for other researchers where possible. To date, samples have been collected along a 700 km corridor

of the Horton River, NWT (2000), a 400 km corridor of the Thelon River, NWT & NU (2002), and near the communities of Yellowknife, NWT (2001), and Baker Lake, Arviat, and Rankin Inlet, NU (2003). A malaise trap was maintained near Rankin Inlet in 2004, and some sampling was carried out by local volunteers. The researchers that have been involved in the project so far include Doug Currie (ROM Ontario), Donna Giberson (UPEI), Peter Adler (Clemson University), Brian Brown (Los Angeles County Museum), Mac Butler (North



Dakota State U.), Amanda Roe (U. of Alberta), and Lisa Purcell (UPEI).

The 2005 field season focussed on the north western shores of Hudson Bay, specifically in the Rankin Inlet region of Nunavut and in Churchill, Manitoba. The 2003 field trip, and the 2004 work by local volunteers, yielded fewer mayfly species in the Rankin area than in Baker Lake or Arviat, and failed to turn up a number of species that had been predicted to occur there. Therefore, I returned to Rankin Inlet in 2005 for a longer and more intensive sampling trip to 1) determine whether the low diversity was real or an artefact of sampling and 2) get more information on the phenology of the species that were present. We got logistic support from Mike Shouldice of Nunavut Arctic College, who arranged the use of the Arctic College Cabin for us. This one-room cabin is located on a tundra lake about 12 km northwest of Rankin Inlet. The use of the cabin meant that we were on the tundra for easy access to collection sites, but close enough to town to make it possible to come in and out for supplies. Thanks to having a cabin to work from, we also transported a microscope to help us with sorting, pinning, and processing insects on site, so that we would get a head start on the samples.

I was accompanied by Steve Burian (Southern Connecticut State University), a mayfly systematist who has been working on northern and eastern mayflies for a number of years. Together we re-sampled a number of sites from 2003, and also hunted intensively for new sites (see map). We also sampled a number of sites repeatedly to get life-history information on these little-known northern mayflies. Despite our best efforts, we found the same species as the previous trip (*Ephemera aurivilli* and *Baetis bundyae*), but were able to



Jade Savage and Steve Burian setting up Malaise trap  
(photo by D. Giberson)

collect a variety of life stages and life-history information that we missed in the spot collections of the previous trip. In addition, Dr. Rob Roughley (University of Manitoba) collected mayflies (in addition to dytiscid beetles and other insects) in similar habitats in Churchill, Manitoba, to compare to the tundra regions farther north on Hudson Bay. These samples are currently being processed in our labs in PEI and Connecticut.

Jade Savage (a muscid fly specialist from Bishops University) participated in the 2005 field season as well. Jade set up a Malaise trap near the cabin, and collected a variety of specimens in the Malaise trap, as well as from baited traps and pan traps on the tundra, and by sweeping the vegetation. We were successful in timing the trip to coincide with the early season and summer flowers, so Jade collected widely from all sources to obtain a good picture of the higher flies in the area. These samples are currently being processed at her lab in Sherbrooke, Quebec.

As results from the laboratory work and from later 2005 expeditions come in, they will be summarized for this newsletter. Results from successive planned investigations in some taxa are proving to be especially useful.