

## Alaska still a frontier for entomology

by Matthew Bowser



*A dust louse, *Badonnelia titei*, was found beneath Matt Bowser's desk at the Kenai National Wildlife Refuge's headquarters.*

Despite over 150 years of study of the Alaskan insect fauna, it is still quite easy to find species that were not previously known to occur in the state. This is true because we do not yet have a complete checklist of our arthropod fauna and because exotic species are frequently introduced.

The first scientific collections of insects from Alaska were made under Russian rule in the 1840s and 1850s. Fredrik Frankenhaeuser collected many species of beetles here on the Kenai Peninsula over this time period, which were sent back to Europe and described by Carl Gustav von Mannerheim.

No more significant entomological explorations in south-central Alaska were undertaken until the Harri-man Alaska Expedition of 1899, when Trevor Kincaid collected insects and Arachnids from much of coastal Alaska including Seldovia and Homer.

Since then, numerous entomologists have visited the state and contributed greatly to our knowledge of

the Alaskan fauna, but the vast majority of the specimens collected in Alaska have been sent to collections and experts outside of the state. In this way Alaska is similar to many developing countries in that most of the information on its fauna resides in scattered institutions outside of its borders.

Derek Sikes, curator of insects at the University of Alaska Museum in Fairbanks, has begun compiling a checklist of the terrestrial arthropods of Alaska by searching through collections, databases, and printed works for records of Alaskan species. Without such a checklist it is difficult to answer simple questions such as, “how many species of insects are present in Alaska?” or, “what proportion of our insect fauna is endemic to Alaska?”

I have been helping with this project over the last year, mostly by tracking down literature on the various arthropod groups. I also traveled to the Canadian National Collection of Arthropods in Ottawa, where I scoured the collection for additional species not previously recorded from Alaska.

The checklist now includes more than 6,500 species of arachnids, myriapods (centipedes and millipedes), and insects, more than ten times the number of terrestrial vertebrates known from the state. Even though the list is still far from complete, it presents a first look at Alaska's terrestrial arthropod fauna as a whole and is already quite useful.

It is still surprisingly easy to add species to the checklist. As part of our work inventorying the fauna of the Kenai National Wildlife Refuge, we have found twelve species that were not previously known from Alaska. Two of these species, a daddy long-legs and a kind of a planthopper, were new to science. Such additions are hardly exceptional, as Derek Sikes in Fairbanks and Dominique Collet in Sterling have also found multiple species not previously known from Alaska—some from their own back yards.

One of our additions was a minute insect that bumbled across the floor beneath my desk in the Refuge's headquarters building. I usually ignore such things, but I collected this one, eventually finding out that it was a kind of a dust louse (*Badonnelia titei*), the first record of this animal in the Western Hemisphere. We

had an infestation of these little insects in our laboratory's drains.

Another addition to the checklist came from my house in Soldotna, where a population of long-bodied cellar spiders is well-established in my garage and crawl space. Like *Badonnelia*, this is an introduced species that thrives in association with man. New exotic arthropods are discovered in our state each year, some of which have been quite successful in pristine habitat. These species pose real threats, potentially displacing native species or even altering the character of the landscape. Kenai Peninsula residents are all too keenly aware of how influential even a single insect species can be due to our experience with the native spruce bark beetle.

Answering the question of “what species are present in Alaska?” is a first step towards understanding and managing the arthropod fauna of this vast region. Once a more complete checklist exists, then generalizations can be made about patterns of introductions and patterns of endemism among the members of our insect fauna, which will be useful for dealing with the problem of introductions of exotic species and conservation of Alaska's biodiversity.

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