

Alien insects of Alaska

by Matt Bowser



*An exotic *Phalangium daddy long-legs* consumes a native *Nelima daddy long-legs**

It is a blessing for us as residents of the Kenai Peninsula to live in a time and place where we enjoy largely pristine or at least functionally intact ecosystems. Alaska, thanks to its cold climate and limited human disturbance, remains dominated by the same flora and fauna that existed before western colonization. Our vast forests and mountains may seem impervious, but they are nevertheless vulnerable.

Weedy plants have gained publicity in recent years, and rightly so. Some of our more aggressive weeds have the potential to alter the landscape irrevocably. Most of us are also aware of how introduced Northern Pike could decimate salmon populations in the coming years if they infiltrate our river systems. Compared to weedy plants and vertebrates, we have much less information about most of our insect immigrants.

We on the Kenai should be the last to underestimate these tiny animals, having witnessed our mature forests of white spruce fade from green to rusty brown to gray, a victim of our native Spruce Bark Beetle. This species, a native resident, is usually held in check by predators, parasites, and the trees' own defenses. In-

sects brought here from other parts of the world may be far more destructive, especially when their natural enemies do not tag along with them.

We are currently aware of about 70 species of introduced insects and arachnids that appear to have become established in Alaska. About one-third of these are "synanthropes," species that live here only in association with people. These are such things as parasites like head lice and bed bugs, pantry pests, such as larder beetles and meal moths, agricultural pests dependent on crops or livestock, and intentionally cultivated species like European Honey Bees. The rest of our introduced insect species appear to be surviving without our assistance.

A few of our alien arthropods may be beneficial. The U.S. Forest Service intentionally introduced a species of parasitic wasp to help control the exotic Amber-Marked Birch Leaf Miner (*Profenusa thomsoni*), an example of classical biological control. Some other exotic insects immigrated along with their exotic host plants. The Toadflax Capsule Weevil (*Gymnetron antirrhini*) reduces seed production of Common Toadflax, one of Alaska's high-ranking noxious weeds. The Caragana Aphid (*Acyrtosiphon caraganae*) feeds on the Siberian Pea Shrub, also considered to be an invasive weed in Alaska. Neither of these insects tends to kill its host plants, although the host's growth and reproduction may be diminished.

Despite these few beneficial introduced arthropods, exotics generally have the potential to do much more harm than good. The Seven-Spotted Lady Beetle (*Coccinella septempuncta*) was intentionally introduced into Northeastern North America because of its voracious appetite for pestiferous aphids. It did help control aphids, but this exotic beetle may be out-competing native lady beetles in the wild; the native Nine-Spotted Lady Beetle (*Coccinella novemnotata*), once the most common lady beetle of the Northeast, may now be extinct in much of its former range. The Seven-Spotted Lady Beetle is now common in agricultural settings in Alaska. *Phalangium opilio*, now the most conspicuous species of daddy long-legs around homes and in gardens on the Kenai Peninsula, was probably introduced to our area. Like the Seven-

Spotted Lady Beetle, it is beneficial in gardens, feeding on aphids and other pests, but this aggressive species will also eagerly nab and consume native daddy long-legs (See photograph).

Several of our introduced insects are forest pests. The Amber-Marked Birch Leaf Miner and the Hemlock Woolly Adelgid (*Adelges tsugae*), cause visible damage to trees, but generally do not kill their hosts. Trees in urban settings tend to exhibit more extensive damage than trees in forest settings. Others, like the Spruce Aphid (*Elatobium abietinum*) have already caused extensive leaf loss and some mortality of Sitka Spruce in Southeast Alaska. Many other potentially destructive exotic pests have not yet arrived in Alaska.

Introduced insects have the potential to significantly alter our landscapes. In order to prevent this, entomologists serving the U.S. Forest Service, the USDA Agricultural Research Service, the Alaska Divi-

sion of Forestry, and UAF Cooperative Extension Service monitor at ports and other locations so that introductions can be detected early. As with exotic weedy plants, the best way to protect our natural systems from exotic insects is to prevent introductions. However, successful control and eradication projects have been demonstrated in the past, providing hope that at least some of the arthropods introduced into Alaska can be controlled.

If you have concerns about insects that you suspect may be introduced, I am happy to check specimens.

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