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New Canadian records of *Nemastoma bimaculatum* (Fabricius), and a brief summary of introduced Eurasian harvestmen in North America (Arachnida, Opiliones)

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Eurasian harvestmen have been introduced to, and have established themselves in North America. Species known to have been introduced include *Trogulus tricarinatus* (L.) 1767, *Paroligolophus agrestis* (Meade) 1855, *Rilaena triangularis* (Herbst) 1799, *Oligolophus tridens* (C. L. Koch) 1836, and *Nemastoma bimaculatum* (Fabricius) 1775, for the last of which new Canadian records (Ontario) are given below. It is not entirely determined if the species *Phalangium opilio* (L.) 1758, *Opilio parietinus* (DeGeer) 1778 and *Mitopus morio* (Fabricius) 1779 are introduced to North America, or are naturally of Holarctic distribution. The former seems the more likely hypothesis for the first two, but *M. morio* in North America may be native or may not be that species. Detailed descriptions and illustrations of all these species may be found in Martens (1978).

Trogulus tricarinatus (Trogulidae) was first recorded in North America from Ellison Park, Rochester, Monroe Co., New York, by Muchmore (1963), who found an established population in a city park. He posited that the introduction was relatively recent, given the small area occupied by the population, and the fact that Sherman C. Bishop and Cyrus Crosby (Bishop, 1949) had collected extensively in the area prior to the 1950s without finding this species. It is not known if this population is still extant, but additional populations in New York and Massachusetts have been photographically documented (http://bugguide.net/node/view/613767/bgimage).

Bell (1974) collected *Oligolophus tridens* (Phalangiidae) in northwestern Vermont and Bragg and Holmberg (2009) listed records from the maritime provinces of Canada and from British Columbia. *Paroligolophus agrestis* and *Rilaena triangularis* (both Phalangiidae) were reported by Bragg and Holmberg (1975) from the immediate vicinities of Vancouver, British Columbia, and Seattle, Washington, both seaports. They stated that *P. agrestis* was commonly found around human habitations, and that neither species was found by Nathan Banks (1894), who reported on harvestmen from the Pacific northwest. *Paroligolophus agrestis* was also recorded from Alberta and Nova Scotia, and *R. triangularis* from Nova Scotia and New England by Bragg and Holmberg (2009).

LeSage (1977) discovered *Nemastoma bimaculatum* (Nemastomatidae) in Montreal, Québec, evidently a long-established population. In the American Museum of Natural History's collection, I found the following specimens: ***CANADA***: ONTARIO: Toronto, north end of Grenadier Pond (W79°28'11.58", N43°38'50.00"), 7 August 1946, W. Ivie, 15♂, 45♀; Swansea, west of High Park (less than 1 km from Grenadier Pond), 24 June 1945 (2♂, 1♀) & 1 September 1945 (2♂, 1♀), W. Ivie & T. B. Kurata. Swansea Mews, as the neighborhood is shown on current maps, is just southwest of Grenadier Pond and High Park is just north of the pond. Based on satellite photographs, today the pond is surrounded by a park-like area, lightly forested. Again, the current status of neither the Montreal nor Toronto populations is known, but the Ivie collection contained numerous adults of both sexes, indicating that at least in August 1946, the Toronto colony was thriving. The presence of early records from Ontario and later from Québec indicates that the species was established in Canada well before LeSage's 1977 report, and suggests that more assiduous collecting may reveal more localities.

In each of the cases above, distribution in a small or localized area (as in *T. tricarinatus* populations and the two localities for *N. bimaculatum*), an association with built-up or disturbed areas, or human habitations, and the absence of any congeners from North America are evidence for the relatively recent introduction of those species relative to the time of their collection, or to their low vagility. However, two additional species, *Phalangium opilio* and *Opilio parietinus,* are widely distributed (see list of states and provinces in Cokendolpher & Lee 1993) and indeed in some regions are the most common harvestmen encountered; both are associated with homes, parks and gardens (Edgar 1966; 1990), although the latter species is sometimes found away from these places. Neither species has a congener in North America, but both

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genera include numerous species in Eurasia (Martens 1978). The case for introduction is therefore slightly weaker, but still strong, especially since both species have also established themselves in Australia and New Zealand, where they are obvious colonists (Forster 1947; Gruber & Hunt 1973). The case of *Mitopus morio* is more difficult, since while widely distributed in northern North America, it is not clearly associated with humans and their works (records in Cokendolpher & Lee 1993). Further, while *P. opilio* and *O. parietinus* were recognized by American arachnologists as European species from the beginning, *M. morio* was redescribed in North America as a new species at least three times (Cokendolpher & Lee 1993). It may be that a careful reexamination of North American *Mitopus* would show the presence of native species. If *P. opilio, O. parietinus* and *M. morio* are in fact introduced species from Europe, their present wide distribution and common occurrence, sometimes away from inhabited places, points either to very rapid colonization, early and frequent introduction, or both.

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