

NOTE

Dwarf Millipedes (Diplopoda: Polyxenidae) on Pines in an Ornamental Landscape

*Polyxenus* Latreille (Diplopoda: Polyxenidae) species have been reported to feed on algae in moist leaf litter of broadleaf and pine forests (Hoffman 1990, p. 842. In Dindal, ed., Soil Biology Guide. John Wiley & Sons; Nichols and Cooke 1971. The Oxford Book of Invertebrates. Oxford University Press), while other authors consider them "bark dwellers" (Hopkin and Read 1992. The Biology of Millipedes, Oxford University Press). One species, *Polyxenus lagurus* (L.), has been collected from the thatched roof of a vacation home in Germany (Weidner 1974. Praktische-Schadlingsbekämpfer 26: 12, 174-176), under stonewalls and in houses (Enghoff 1976. Entomologische Meddelelser 44: 161-182), and from galls of goldenrod, *Solidago canadensis* L. (Shelley 1988. Canadian Journal of Zoology 66: 1638-1663). In this paper, we report on the occurrence of *Polyxenus lagurus* in still another and distinct habitat, pine trees in ornamental landscapes.

We took beat samples of pine trees and shrubs on 19 June and 27 Aug. 1997 as part of a study to identify predators of pine needle scale (*Chionaspis pinifoliae* (Fitch); Homoptera: Diaspididae). Tree species sampled were preferred hosts of pine needle scale and included *Pinus mugo* Turra (a dwarf cultivar), *P. sylvestris* L. and *P. nigra* Arnold standing within the city limits of Urbana-Champaign, IL. Pines occurred in three types of habitats: 1) "natural areas,"

park-like habitats wooded primarily with *Pinus* species (n = 24); 2) "grassy areas," dominated by turf that surrounded pine trees (n = 24); and 3) "disturbed areas," pines in ornamental landscape plantings in proximity to paved roads and/or parking lots (n = 25).

We took beat samples from four branches per tree, one at each of the cardinal points, and at mid-canopy. Each branch was beaten four times by a 925 g rubber mallet through approximately a 90° of arc. A 70% ethanol filled enamel pan was held under the branch to capture falling arthropods. All arthropods and debris from a single plant were combined into one sample, and samples were returned to the lab for species separation under a dissecting microscope.

We collected 63 *Polyxenus lagurus* from three of the disturbed habitat sites: plantings between a large parking lot and a busy road in front of a grocery store (n = 61 specimens), in front of a retail store (n = 1), and at the edge of a large parking lot for a shopping mall (n = 1). These three locations were separated by more than 3.5 km. *Polyxenus lagurus* were only collected from trees that supported populations of pine needle scale; however, it seems unlikely that there is any direct ecological relationship between millipedes and the scale insect.

The presence of *Polyxenus lagurus* in beat samples of pines may not be unexpected because Hoffman (1990) reported

that a few species of *Polyxenus* occur in pine forests, especially in the leaf litter, and Hopkin and Read (1992) state that *Polyxenus* are often bark-dwellers. It was surprising, however, that the millipedes were not present in the grassy or natural habitats that were higher in arthropod diversity than the disturbed areas where they were collected (J. F. Tooker, unpublished data). Disturbed areas may provide suitable habitats for *Polyxenus lagurus* because of their dry microclimate (Hopkins and Read 1992) and lower abundance of predaceous arthropods (J. F. Tooker, unpublished data).

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