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THREE NEW FOOD PLANTS AND FIRST WISCONSIN RECORD OF
PUBLILIA RETICULATA (HEMIPTERA: MEMBRACIDAE)Andrew H. Williams¹

ABSTRACT

Publilia reticulata was found feeding on the composites *Silphium perfoliatum*, *S. integrifolium* and *Ambrosia trifida* at eight sites in five Wisconsin counties in 1993–1995. This is the first report of *P. reticulata* using these plants and of its occurrence in Wisconsin.

In 1993, *Publilia reticulata* Van Duzee was found feeding on *Silphium perfoliatum* at Thomas Wet Prairie in Grant Co., Wisconsin. Because this treehopper is unreported from Wisconsin, it was sought widely around southwestern Wisconsin in the course of general prairie research during 1994–1995. Seven additional populations were found in Dane, Green, Iowa and Lafayette counties; at each site *P. reticulata* fed on either *S. perfoliatum*, *S. integrifolium* or *Ambrosia trifida*. This is the first report of this treehopper using these three composites.

METHODS AND MATERIALS

All observations of *P. reticulata* were vouchered by specimens deposited in the Insect Research Collection (IRC) at the University of Wisconsin–Madison. Literature was reviewed for information on food plants and distribution of *P. reticulata*, and regional museums were checked for possible Wisconsin specimens. Plant nomenclature follows Kartesz (1994).

RESULTS

Publilia reticulata was collected at eight sites in five counties in southwestern Wisconsin in 1993–1995. It was found in consecutive years at five sites and nymphs were found in the company of adults at four sites. It was more often observed on *S. integrifolium* than on *S. perfoliatum*, and was observed only once on *A. trifida*. At two sites, it was observed on both *S. integrifolium* and *S. perfoliatum*. It was most often found on or near the midvein on the underside of leaves, and these midveins were often damaged, even to the extent that the distal portion of some leaves folded down where damaged. This treehopper was also found on young stem tissue, and was occasionally observed elsewhere on the leaf surfaces. Almost always, ants attended *P. reticulata*, vigorously defending it from my attack. This treehopper and its attending ants were observed during the day and night. At two sites, *P. reticu-*

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lata was found on the same stems of *S. integrifolium* as was *P. concava* (Say), its more locally abundant congener.

DISCUSSION

This is the first report of *P. reticulata* using *S. perfoliatum*, *S. integrifolium* and *A. trifida*. Kopp and Yonke (1973) listed the composites ironweed, aster, and *Vernonia baldwinii* as food plants. Deay and Gould (1935) wrote, "Taken from burdock and iron weed and in general sweeping." Bristow (1984) listed "ironweed (*Vernonia* spp.) and several other closely related species of the Compositae," and reported use of *V. noveboracensis* in New Jersey. This treehopper appears to specialize on plants of the Asteraceae. Its occurrence on species in other families, such as alfalfa, black locust and post oak (Dennis 1965), should be considered incidental.

On the sites included in this study, *Vernonia fasciculata*, the sole local member of this genus, occurs only at Thomas Wet Prairie, and *P. reticulata* has not been found using it here or elsewhere in the region. On three sites in this study, *S. laciniatum* grows with *S. integrifolium* and/or *S. perfoliatum*, but *P. reticulata* has not been found using *S. laciniatum* here or elsewhere in the region.

This treehopper must be able to reproduce on both *S. integrifolium* and *S. perfoliatum*. It was observed on *S. integrifolium* in consecutive years at five sites, adults were observed with nymphs on these two plants at several sites, and adults were reared in the lab from nymphs collected from among adults on each of these two plants. The sole observation of this treehopper using *A. trifida* — two adults attended by four ants — occurred late in the course of this study on a site hosting large populations of *S. integrifolium* and *P. reticulata*, but only a single *A. trifida* plant. Whether or not this treehopper can reproduce on *A. trifida* is unknown.

This is the first report of *P. reticulata* in Wisconsin. The distribution and habits of Membracidae in Wisconsin were studied by Dennis (1951, 1952, 1969) and Dennis and Dicke (1953) who did not mention *P. reticulata*. Dennis' collection of Membracidae was given to the IRC and contains no Wisconsin specimens of this treehopper. Kopp and Yonke (1973) mapped its distribution; their map did not include Wisconsin but did include neighboring Illinois and Iowa. The only Wisconsin specimens of this treehopper in the IRC are the author's. The Milwaukee Public Museum and The Field Museum of Natural History have no Wisconsin specimens of this treehopper.

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LITERATURE CITED

- Bristow, C. M. 1984. Spatial segregation between *Aphis vernoniae* (Aphididae) and *Publilia reticulata* (Membracidae), two species of colonial Homoptera on New York ironweed. *Can. Entomol.* 116:855-859.
- Deay, H. O. & G. E. Gould. 1935. An annotated list of the Membracidae of Indiana (Homoptera). *Proc. Ind. Acad. Sci.* 44:236-243.
- Dennis, C. J. 1951. A list of the Wisconsin species of Membracidae. *Can. Entomol.* 88:183-184.
- _____. 1952. The Membracidae of Wisconsin. *Trans. Wisc. Acad. Sci., Arts and Lett.* 41:129-152.
- _____. 1965. Oklahoma treehoppers (Homoptera, Membracidae). *Proc. Okla. Acad. Sci.* 45:50-64.
- _____. 1969. The treehoppers of Wisconsin in relation to the tension zone (Homoptera, Membracidae). *Amer. Midl. Nat.* 81:236-242.
- _____. and R. J. Dicke. 1953. The Membracidae of the University of Wisconsin Arboretum. *Trans. Wisc. Acad. Sci., Arts and Lett.* 42:131-141.
- Kartesz, J. T. 1994. A synonymized checklist of the vascular flora of the United States, Canada, and Greenland. 2nd ed. Vol. 1. Biota of North America Program of North Carolina Botanical Garden. Timber Press, Portland. 622 pp.
- Kopp, D. D. & T. R. Yonke. 1973. The treehoppers of Missouri: Part 2. subfamily Smiliinae; tribes Acutalini, Ceresini, and Polyglyptini (Homoptera: Membracidae). *J. Kans. Entomol. Soc.* 46:233-276.