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NEW FOOD PLANTS AND FIRST WISCONSIN RECORDS OF *PUBLILIA*
MODESTA VAR. *BRUNNEA* (HEMIPTERA: MEMBRACIDAE)Andrew H. Williams¹

ABSTRACT

Publilia modesta var. *brunnea* was found feeding on 14 species of Asteraceae at three sites in three Wisconsin counties in 1994–1996. This is the first report of *P. modesta* using these plants and of its occurrence in Wisconsin, an eastward extension of its reported distribution.

Until now, *Publilia modesta* var. *brunnea* Ball was unknown from 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. modesta*. Dennis' collection of Membracidae was given to the University of Wisconsin–Madison Insect Research Collection (IRC) and contains no Wisconsin specimens of this treehopper. Kopp and Yonke (1973) mapped its distribution, and their map did not include Wisconsin but did include neighboring Iowa. *Publilia modesta* var. *brunnea* was collected in the course of three prairie insect research projects now operating in Wisconsin. J. Lynch collected this species on *Solidago rigida* in a prairie restoration at Riveredge Nature Center in Ozaukee County on 13 September 1994, and B. Greenler collected it in this same situation there on 1 November 1994.

METHODS & MATERIALS

Publilia modesta was collected in a sweep sample in dry prairie at Hawk Hill in Dane County in The Nature Conservancy/WI Dept. of Natural Resources Study 053 on 5 June, 1995. R. Christoffel collected *P. modesta* on *Helianthus pauciflorus* at Bush Clover Prairie in Grant County on 4 September 1995, in the course of the Prairie Insect and Spider Inventory of The Prairie Enthusiasts–Southwest Chapter. In 1995–1996, I pursued *P. modesta* at these sites to record its food plants, making 19 additional collections.

All observations of *P. modesta* were vouchered by specimens: the 1994 collections at Riveredge are housed there, the TNC/DNR specimen is housed at Wisconsin DNR, all others were deposited in the IRC. Representative specimens from each of the three sites were determined by K. G. A. Hamilton to be *P. modesta* var. *brunnea* (see Metcalf & Wade 1965). The only Wisconsin specimens of this treehopper in the IRC are those collected in this study. The Milwaukee Public Museum has several specimens of *P. modesta* collected by S. Borkin at Riveredge in September 1996. Literature was reviewed for infor-

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mation on food plants and distribution of *P. modesta*, and regional museums were checked for possible Wisconsin specimens. Plant nomenclature follows Kartesz (1994).

RESULTS AND DISCUSSION

This is the first report of *P. modesta* in Wisconsin. *Publilia modesta* var. *brunnea* was collected on 14 species of Asteraceae at three sites in three Wisconsin counties in 1994–1996. The three sites are distributed over the full width of the southern quarter of Wisconsin, making this a significant eastward extension of the reported distribution of this species. It was found in 1994 and 1996 at Riveredge, and in 1995 and 1996 at both Hawk Hill and Bush Clover Prairie. In 1996, the few found at Hawk Hill were on *Solidago canadensis*. Many were found at Riveredge in 1996, on *Aster novae-angliae*, *Helianthus grosseserratus*, *Ratibida pinnata*, *Solidago canadensis*, *S. gigantea* and *S. rigida*. Many *P. modesta* were found at Bush Clover Prairie in 1995–1996, on *Aster ericoides*, *A. laevis*, *A. lanceolatus*, *A. pilosus*, *Cirsium vulgare*, *Helianthus occidentalis*, *Liatris aspera*, *Ratibida pinnata*, *Solidago canadensis* and *S. rigida*. All of these plants prefer open sunny habitats, especially prairie, but this was the only habitat in which *P. modesta* was sought. These plants are native here, except for *C. vulgare*. *Solidago canadensis* and *S. rigida* were the plants most often used. This is the first report of *P. modesta* using these food plants. Kopp and Yonke (1973) listed, “*Solidago* sp., alfalfa, *Helianthus* sp., *Iva* sp., *Artemisia* sp., *Viguiera longifolia*, *Glycyrrhiza lepidota*, chrysanthemum, mesquite and white clover;” all in Asteraceae or Fabaceae. In this study, all 14 plants used are in the Asteraceae.

Publilia modesta was found both day and night, usually clustered on young stems, often in or near the inflorescence, or on veins on both upper and lower leaf surfaces. Ants vigorously defended *P. modesta* from the collectors' attacks on 18 of the last 20 observations reported here; twice groups of *P. modesta* lacked attending ants. At Bush Clover Prairie attending ants were *Formica montana* Emery and *F. subsericea* Say. On four of these last 20 observations, at Riveredge and Bush Clover Prairie, *P. modesta* was closely associated with adults of *Campylenchia latipes* (Say) as well as with ants on stems of *Aster lanceolatus*, *Cirsium vulgare*, *Liatris aspera* and *Ratibida pinnata*. On two of these last 20 observations, both at Riveredge, *P. modesta* was closely associated with adults of *P. concava* (Say), its more locally abundant congener, as well as with ants on the stem of *Solidago canadensis* and clustered about veins on the undersides of leaves of *Aster novae-angliae*. Though the collection dates reported here span 5 June – 1 November, almost all of the specimens were collected in late August and September. All specimens are adults. Nymphs, probably of this species, were also present in some cases, but none were reared to confirm their identity.

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