Zootaxa 3423: 1–26 (2012)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Richness of the Nearctic Treehopper Fauna (Hemiptera: Aetalionidae and Membracidae)

LEWIS L. DEITZ[1] & MATTHEW S. WALLACE[2,3]

[1]*Department of Entomology, North Carolina State University, Raleigh, NC 27695-7613, USA. E-mail: lewis_deitz@ncsu.edu*
[2]*Department of Biological Sciences, East Stroudsburg University of Pennsylvania, 200 Prospect Street, East Stroudsburg, PA 18301-2999 USA. E-mail: mwallace@po-box.esu.edu*
[3]*Corresponding author*

Abstract

The indigenous Nearctic treehopper fauna includes 2 families, 6 subfamilies, 20 tribes, 68–72 genera, and 276–280 described species, of which 1 tribe, 16 genera, and 195 species are endemic. This work provides an alphabetical checklist of the species (with distributions as documented in the literature) as well as discussions and two tables summarizing the taxonomic and regional diversity of this rich, distinctive fauna. The tribes Smiliini and Telamonini (Membracidae: Smiliinae), which include many specialists on oaks (*Quercus* spp.), are the two most species-rich tribes. Maps of the Nearctic subregions document the species richness of each state and province, 22 of which have between 60 and 118 reported species. The Southwest U.S. has the largest number of genera of the subregions, while both the Southwest and the Central and Eastern U.S. are highly species rich. Arizona stands apart as an area of exceptional endemism with one genus and 25 species known only from within its borders. Among families of auchenorrhynchous Hemiptera, Membracidae rank third in total numbers of Nearctic species. This study highlights the need for: (1) improved taxonomic understanding, especially through comprehensive generic revisions; (2) further collecting to fill gaps in geographic sampling; and (3) the preservation of identifiable voucher material, with full data (including geo-cordinates and, where known, host plant data) to document all published research.

Key words: Aetalionidae, checklist, endemic, distribution, diversity, Membracidae, Nearctic region, treehoppers, United States, zoogeography

Introduction

Our objective is to summarize the current knowledge of treehopper distribution within the Nearctic zoogeographic region—the temperate and arctic areas of North America (including Bermuda and Greenland) (Fig. 1). Based on the literature, we provide an annotated checklist of the Nearctic species, with the known distribution (subregion/state or province) for each, and review the taxonomic diversity and regional species richness of the Nearctic treehopper fauna. Knowledge of species distributions is vital to making informed decisions related to conservation management (Samways 1994) as well as to understanding the natural history of treehoppers in general.

Need for an updated list of Nearctic treehoppers became apparent early in our work on the treehoppers of various parts of the United States (Dietrich *et al.* 1999; Wallace and Troyano 2006; Wallace and Deitz 2007; Bartlett *et al.* 2008; Wallace 2008; Wallace *et al.* 2009; Wallace and Maloney 2010). Though invaluable, the catalogue of Metcalf and Wade (1965), which listed the world species through 1955 with state distributions, is now 57 years out-of-date. McKamey's (1998) supplemental catalogue reviewed more recent nomenclatural changes, listing geographic data for the few new Nearctic species after 1955, but gave no data on distributions within the United States. Thus, with few exceptions, those interested in determining which treehopper species occur in a particular state must do an extensive search of Metcalf's catalogue as well as the literature published since 1955.

Interactive identification keys to the genera and higher taxa of Nearctic treehoppers (Wallace 2010) are available as part of a new online resource devoted to treehoppers (Deitz and Wallace 2010). It includes photographs of

Accepted by C. Dietrich: 21 Jun. 2012; published: 15 Aug. 2012