



Confirmation of the cicada *Tibicen pronotalis walkeri* stat. nov. (= *T. walkeri*, Hemiptera: Cicadidae) in Florida: finding singing insects through their songs

KATHY B. R. HILL¹ & DAVID C. MARSHALL²

Ecology and Evolutionary Biology, University of Connecticut, 75 N. Eagleville Rd, Storrs, CT 06269-U3043, U.S.A.

E-mail: ¹*cicada900@yahoo.com.au*, ²*david.marshall@uconn.edu*

A recent publication (Sanborn *et al.* 2008) removed the cicada *Tibicen pronotalis walkeri* Metcalf stat. nov. [= *T. walkeri* Metcalf = *T. marginalis* (Walker) = *T. marginata* (Say), see last paragraph for new taxonomic status] from the list of species recorded from Florida, stating that no specimens were known from the state and that previous records were probably misidentifications of other *Tibicen* Latr. species. In the summer of 2008, we found *T. p. walkeri* (Fig. 1a) near the Chattahoochee River inside the Florida border and near the Chattahoochee, Flint, and Kinchafoonee waterways in Georgia (Fig. 1b). We return this species to the list of cicadas in Florida, and add a couplet to the key of Sanborn *et al.* (2008). Additional surveys are needed to determine the poorly known ranges of cicada species in the USA, and a focus on species-specific songs provides a means of accomplishing this task quickly and accurately.

Despite being large and striking insects, cicadas of the eastern USA are not commonly collected, perhaps partly due to the fact that they are fast, wary and prone to perching high in trees. In warm southeastern states like Florida, cicada specimens are most commonly encountered when they are attracted to bright lights on hot, humid nights. However, collecting records of cicadas (and other fauna with loud airborne sounds) is made easier by a knowledge of their songs, which generally allows for quick and accurate identification to species, and is often much easier than identification using morphological traits, especially for amateurs. A knowledge of the songs of singing fauna can be a powerful tool for rapidly collecting data on geographic ranges of species (e.g., Cooley *et al.* 2009), discovering range extensions (e.g., Marshall *et al.* 1996, Bunker *et al.* 2007), estimating species abundance (e.g., Marshall and Cooley 2000, Bunker *et al.* 2007) and detecting new species (e.g., Marshall and Cooley 2000, Cole 2008). Song files of an increasing number of species are being made available through online (e.g., Cicada Central, http://hydrodictyon.eeb.uconn.edu/projects/cicada/sp_pages/species_NA.html) and other media (see audio CD in Elliott and Hershberger 2006). When searching for a known species, understanding its preferred habitat, hostplant affiliations, and seasonal and diel singing patterns greatly helps in designing the search. While hearing a song just once affords a positive record of a species, some locations may have to be searched repeatedly in order to produce credible negative records, as singing insects may be quiet for many reasons including poor weather conditions, time of day, time of year, life cycle periodicity, or from disturbance by a nearby predator, etc. Ideally, a recording of the song and/or a specimen is necessary to confirm the record, especially if taken by an amateur.

The ranges of the approximately 170 cicada taxa of the USA are generally poorly known, although work in progress by A. Sanborn and P. Phillips (pers. comm.) will establish a preliminary outline of species distributions from museum specimen records. We suggest that field work where cicadas are searched for aurally should also undertaken, in order to further our understanding of species' distributions.

***Tibicen pronotalis walkeri* in the eastern USA**

Sanborn *et al.* (2008) list the publications that state that *T. p. walkeri* occurs in Florida (e.g., Uhler 1884, Davis 1925, 1935, 1938), and discuss reasons to doubt these records, which give only vague locations such as "Florida" or "western Florida", and do not refer to actual specimens. However, Sanborn *et al.* did not discuss Davis' (1915) record of a specimen labelled "Florida" and recorded as deposited in the Museum of Comparative Zoology (MCZ, Harvard University, Boston, USA). Sanborn *et al.* (2008) searched through many museum collections, including the W. T. Davis collection and the MCZ but came across no specimens of *T. p. walkeri* from within the Florida (or Georgia) borders, and so concluded that published records were probably misidentifications of other eastern USA *Tibicen*, many of which are