



## The cicada fauna of Pakistan including the description of four new species (Hemiptera: Cicadoidea: Cicadidae)

ZUBAIR AHMED<sup>1</sup> & ALLEN F. SANBORN<sup>2</sup>

<sup>1</sup>Department of Zoology, Federal Urdu University of Arts, Sciences and Technology, Karachi 75300, Pakistan

<sup>2</sup>Department of Biology, Barry University, 11300 NE Second Avenue, Miami Shores, Florida 33161-6695 USA.

[asanborn@mail.barry.edu](mailto:asanborn@mail.barry.edu)

### Abstract

The first faunal analysis of the cicadas of Pakistan is provided. Field work and museum study has added significantly to the known cicada fauna of Pakistan. Literature records provide evidence for 18 species inhabiting what is currently Pakistan. The first records of *Platypleura basialba* (Walker), *Platypleura mackinmoni* Distant, *Cicadatra persica* Kirkaldy, *Cicadatra xantes* (Walker), *Meimuna velitaris* (Distant), *Haphsa nicomache* (Walker), and *Paharia putoni* (Distant) are provided. *Psalmocharias balochii* sp. n., *Psalmocharias chitralensis* sp. n., *Psalmocharias gizarensis* sp. n. and *Psalmocharias japokensis* sp. n. are described as new. These are the first records of members of the genera *Meimuna* Distant and *Haphsa* Distant in Pakistan. The new records and new species represent a 61% increase in faunal diversity. The cicada fauna of Pakistan now comprises of a total of 29 species from 13 genera, five tribes and three subfamilies. These data provide a more accurate understanding of cicada diversity at the junction of the Oriental and Palaearctic regions.

**Key words:** new species, taxonomy, biogeography, biodiversity, morphology

### Introduction

The first mention of the cicada fauna of Pakistan came with the publication of Distant's *Monograph of Oriental Cicadidae* (1889, 1891, 1892a) and *The Fauna of British India including Ceylon and Burma* (1906a). Five species of cicadas were reported from areas that are now part of Pakistan in these publications. Since that time, only the publications of Distant, (1906b), Oshanin (1908), China (1926), Janjua & Samuel (1941), Ghulamullah (1941), Chaudhry et al. (1966, 1970), Ahmed et al. (2005), and Wei et al. (2010) have added species to the Pakistani cicada fauna bringing the total diversity to 18 species. Although the cicada fauna of neighboring countries or countries in the region has been described at least in part (Distant 1906a, Maxwell-Lefroy & Howlett 1909, Mathur 1953, Dlabola 1957, Dlabola 1960, Dlabola 1970, Dlabola 1971, Boulard 1977, Naruse & Takagi 1977, Dlabola 1981, Chou et al. 1997, Biswas et al., 2007, Mozaffarian & Sanborn 2010), no detailed census of the Pakistani cicadas has been produced.

This work provides the first provisional list of the cicada fauna of Pakistan. Four species collected during the study are described here as new. Notes on the biology of the species are provided when available.

### Materials and Methods

Specimens were collected by net and hand picking methods. ZA visited the Peshawer Forest Institute where three species, *Platypleura mackinmoni*, *Pycna repanda* and *Sonata obnubila* were confirmed with specimens originating in the Pusa collection, India. Also visited was the Department of Insect Taxonomy, NARC, Islamabad, where *Haphsa nicomache* and *Platypleura octoguttata* were found and confirmed with specimens