



A new fossil Saldidae (Hemiptera: Heteroptera: Leptopodomorpha) from the Early Cretaceous in China

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Abstract

Venustsalda locella **gen. et sp. nov.** is described and illustrated from the Lower Cretaceous Yixian Formation at Huangbanjigou Village, Liaoning Province, China. The new genus is established based on its unusual six cells on the membrane, with the second cell smallest.

Key words: Heteroptera, Saldidae, fossil, Early Cretaceous, Yixian Formation

Introduction

Saldidae, commonly called shore bugs, is the largest family in the Leptopodomorpha: about 335 species are recognized. They are distributed worldwide, especially in the Northern Hemisphere (Schuh *et al.* 1987; Schuh & Polhemus 2009). Saldids are usually found on rocky shores of streams and lakes (Brooks & Kelton 1967; Poinar & Buckley 2009). All saldids are predatory and most of them feed on organisms, found in the damp surface layers of the substrate (Brooks & Kelton 1967; Polhemus & Chapman 1979).

Schuh and Polhemus (1980) present a hierarchic classification in Leptopodomorpha and considered the Aepophilidae to be the sister group of Saldidae. Some subfamilies such as Aepophilinae, Leptosaldinae, Saldoniinae, were formerly erected in Saldidae (Cobben 1959, 1971; Popov 1973), but they are finally removed (Leston 1956; Schuh & Polhemus 1980; Popov 1985). The widely accepted classification of the family Saldidae is that it contains two subfamilies: Chiloanthinae and Saldinae (Schuh & Slater 1995).

Records of fossil Saldidae are scarce and only seven species have been reported (Carpenter 1992). Only one incontrovertible Mesozoic species (*Brevimatus pulchalis* Zhang, Yao & Ren, 2011) from the Early Cretaceous Yixian Formation of Duolun County, Inner Mongolia, China, has been reported (Zhang *et al.* 2011). Most of the fossil species are found from the Cenozoic, such as the Eocene species, *Salda exigua* Germar & Berendt, 1856 from Baltic amber; the Upper Oligocene species, *Oligosaldina rottensis* Statz & Wagner, 1950, *O. rhenana* Statz & Wagner, 1950, and *O. aquatilis* Statz & Wagner, 1950 from Germany; the Miocene species, *Propentacora froeschneri* (Lewis, 1969) (= *Oreokora froeschneri*) from USA, and *Salda littoralis* found in recent Late Glacial clay (Jessen 1923). However, two genera and four species assigned to this group previously: *Leptosalda chiapensis* Cobben, 1971 from Tertiary (late Oligocene or early Miocene age) amber of Chiapas, Mexico amber; *Saldonia rasnitsyni* Popov, 1973, *S. sibirica* Popov, 1985, and *S. maculata* Popov, 1985 from the Lower or Middle Jurassic in Transbaikalia of Russian, were transferred to Leptopodidae and Archegocimicidae respectively (Cobben 1971, 1987; Popov 1973, 1985; Polhemus 1977; Schuh & Polhemus 1980).

In the present paper, a new genus and species of Saldidae is described from the Lower Cretaceous Yixian Formation (about 125 Ma; Swisher *et al.* 1999; Zhou *et al.* 2003; Xing *et al.* 2005) in Huangbanjigou, Chaomidian Village, Beipiao City, Liaoning Province, China. The Yixian Formation is considered part of the Jehol Biota, yielding beautifully preserved insects, reptiles, birds (Lei *et al.* 2005; Wang & Ren 2006; Ren *et al.* 2010; Yao *et al.* 2011). The stable ecosystem, abundant vegetation, and various species suggest that the region as a whole had a