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## Review of the cicada genus *Platylomia* Stål (Hemiptera, Cicadidae) from China, with description and bioacoustics of a new species from Mts. Qinling

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### Abstract

The species of *Platylomia* Stål from China are reviewed and a new species, *P. shaanxiensis* sp. n., from Shaanxi, China is described. Acoustic signals produced by males of this new species were recorded and analyzed. *P. juno* Distant is transferred to the genus *Macrosemia*. A key to the species of *Platylomia* from China is provided.

**Key words:** Cicadomorpha, Cicadoidea, Dundubiini, taxonomy, new combination

### Introduction

The genus *Platylomia* was erected by Stål (1870) as a subgenus of *Cosmopsaltria* Stål, 1866, to accommodate the species *Cicada flavida* Guérin-Méneville, 1834. Distant (1905a) raised *Platylomia* to generic level and redefined the genus. Chou et al. (1997) recorded twelve species of *Platylomia* from China, but six of them are only listed and not described. Beuk (1998, 1999) thoroughly revised the genus *Platylomia*, recognized two monophyletic groups named “*radha* group” and “*spinosa* group”, and synonymized *Champaka* Distant, 1905 with *Platylomia* Stål. Distant (1913) described *Platylomia operculata* from Indochina, which was later synonymized with *P. radha* (Distant, 1906) by Beuk (1998). However, the Indochina specimens of *P. radha* were reassigned to the resurrected *P. operculata* by Boulard (2005). Beuk (2002) stated that the concept of *Platylomia* includes paraphyletic groups, of which some are believed to belong to new genera. In later years, many species previously placed in *Platylomia* were transferred to *Macrosemia* Kato, 1925 by Boulard (2003) and Lee (2008), i.e., *M. umbrata* (Distant, 1888), *M. divergens* (Distant, 1917), *M. assamensis* (Distant, 1905), *M. diana* (Distant, 1905), *M. saturata* (Walker, 1858) and *M. pieli* (Kato, 1938). Lee (2010) resurrected *Champaka* Distant to include all species previously placed in the *P. spinosa* group.

Duffels & van der Laan (1985) attributed *Platylomia* to the subtribe Dundubiina of the tribe Dundubiini. However, Lee (2008) put *Platylomia* in the subtribe Dundubiina of his newly defined tribe Cicadini (= Dundubiini auct.). Boulard (2013) and Sanborn (2013a) also allocated *Platylomia* in the subtribe Dundubiina but they retained the tribe Dundubiini. Sanborn (2013a) listed 21 species of *Platylomia* and recorded the following eight species known from China: *P. bocki* (Distant, 1882), *P. malickyi* Beuk, 1998, *P. bivocalis* (Matsumura, 1907), *P. plana* Lei & Li, 1994, *P. radha* (Distant, 1881), *P. lemoultii* Lallemand, 1924, *P. larus* (Walker, 1858) and *P. juno* Distant, 1905.

In the present paper we review the genus *Platylomia* from China and describe a new species, *P. shaanxiensis* sp. n., from Shaanxi, China. Acoustic signals produced by males were recorded and analyzed. In addition, *P. juno* is recognized to be a member of *Macrosemia*: *Macrosemia juno* (Distant) **comb. n.**

**Female.** Unknown.

**Distribution.** China (Shaanxi).

**Biology and Ecology.** The emergence of the adults of this new species gets started from early of April, which is much earlier than that of most other cicadas occurring in Mts. Qinling. This new species was found in the low mountains, with most individuals sitting and singing on high pines (*Pinus massoniana* Lambert), but also on other trees and on low vegetation as well.

**Remarks.** This new species is similar to *P. plana*, but can be easily distinguished from the latter by the shape of fasciae on mesonotum, the three dark reddish brown spots on tergite II of male abdomen, and the shape of male opercula.

**Sound pattern.** Based upon the observations and recordings obtained, this species usually lifts up its abdomen when make the calling song. The calling song comprises a lilting component, and the calling signal shows seven analyzed recording phrases under a time magnification. The spectrum of these acoustic signals includes frequencies from about 1 to 8 kHz, with a peak frequency of 2 kHz (Fig. 3). The simple, repeated phrases comprise a long echeme (LE) with two or three short echemes (SE) at the end. LE duration is typically 0.9 s, and SE duration is 0.3 s (Fig. 2).

### ***Macrosemia juno* (Distant) comb. n.**

*Platylomia juno* Distant, 1905b: 200–201; Boulard, 2008: 363.

*Cosmopsaltria juno* Kirkaldy, 1909: 180.

**Material examined.** 1 male (NWAUFU), China: Chengdu, Sichuan Prov., 7.viii.1938; 3 males, 1 female (NWAUFU), China: Mt. Limu, Hainan Prov., 220 m, 11.viii.2009; 2 males (NWAUFU), China: Mt. Jianfengling, Hainan Prov., 949 m, 24.vii.2010; 3 males (NWAUFU), China: Mt. Wuzhi, Hainan Prov., 738 m, 13.viii.2010; 3 males, 1 female (NWAUFU), China: Mt. Diaolu, Hainan Prov., 923 m, 16.viii.2010.

**Distribution.** China (Sichuan, Hainan and Tibet); Laos.

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