A new genus of the tribe Meconematini
(Orthoptera: Tettigoniidae: Meconematinae)

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Abstract

In this paper, one new genus, three new species are described: Alloxiphidiopsis gen. n., Alloxiphidiopsis cyclolamina sp. n., Alloxiphidiopsis longicauda sp. n. and Alloxiphidiopsis ovalis sp. n. (Meconematini). Two new combinations are proposed: Alloxiphidiopsis emarginata (Tinkham, 1944) comb. n. and Alloxiphidiopsis irregularis (Bey-Bienko, 1962) comb. n. from Xiphidiopsis. A key to the species is given.

Key words: Taxonomy, Meconematini, Alloxiphidiopsis, new species

Introduction

Meconematini is the largest tribe in Meconematinae, which was proposed by Burmeister (1838). 31 genera are presently recognised in this tribe, most of which are distributed in Asia. During the course of a revision of Chinese Meconematini, we discovered that the males of Xiphidiopsis emarginata Tinkham, Xiphidiopsis irregularis Bey-Bienko and three new species have highly modified 9th abdominal tergites, and the females of two species (the others are unknown) have denticulated ovipositors. These characters differ clearly from the other genera of Meconematini. Thus we think it is wiser to treat them as a single genus for the time being. The type specimens are deposited respectively in Shanghai Entomological Museum, Chinese Academy of Sciences (SEM); Institute of Zoology, Chinese Academy of Sciences (IZCAS); Nankai University, Tianjing (NUT) and Bishop Museum, Hawaii (BMH).

Alloxiphidiopsis gen. n.

Type species: Xiphidiopsis emarginata Tinkham, 1944

Size small. Long-winged species. Head with bluntly conical fastigium of vertex, and with a longitudinal groove at middle of dorsal surface. Last segment of maxillary palpi about equal to the preceding one. Pronotum not very long, humeral sinus hardly indicated. Tegmina and hind wings considerably surpassing apices of caudal femora. Male stridulatory apparatus developed. Fore coxae with a spine. All femora unarmed. Lower lobes of hind knee bluntly rounded. Fore tibiae with open tympanum on each side. Hind tibiae with three pairs of apical spurs. 9th abdominal tergite of male with a median process. Cerci of male symmetrical or asymmetrical. Subgenital plate of male with paired styles. Ovipositor as in Teratura (Megaconema) Gorochov (2005), with ventral margin denticulated.

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Discussion. The new genus differs from the other genera of Meconematini by the highly modified 9th abdominal tergite of male and denticulated ventral margin of ovipositor.


Key to the species of Alloxiphidiopsis

1 Tegmina with blackish brown spots; cerci of male symmetrical. .............................................................. 2
   - Tegmina without blackish brown spots; cerci of male asymmetrical ................................................... 3

2 Median process of male 9th abdominal tergite hardly reaching hind margin of last abdominal tergite, its apex rounded. Subgenital plate of female weakly emarginated. A. emarginata (Tinkham, 1944)
   - Median process of male 9th abdominal tergite extending beyond last abdominal tergite, its apex lobed; subgenital plate of female deeply forked, with compressed lateral lobes. A. cyclolamina sp. n.

3 9th abdominal tergite of male with asymmetrical median process. A. irregularis (Bey-Bienko, 1962)
   - 9th abdominal tergite of male with symmetrical median process .......................................................... 4

4 9th abdominal tergite of male with very long median process, shaped as in Fig. 11; male left cercus distinctly longer than right one. A. longicauda sp. n.
   - 9th abdominal tergite of male with shorter median process, shaped as Fig. 14; male left cercus as long as right one. A. lovalis sp. n.

Alloxiphidiopsis emarginata (Tinkham, 1944) comb. n.

(Figs. 1–3)


Diagnosis. ♂. Size small. Fore tibiae with ventral spines arranged in type 4, 5 (1, 1). Median process of 9th abdominal tergite not or scarcely reaching hind margin of last abdominal tergite, with rounded apex (Fig. 1). Hind margin of last abdominal tergite with two short lobes. Cerci symmetrical, with finger-like dorsal lobe and rounded ventral lobe.

♀. Subgenital plate weakly emarginated (Fig. 2). Ovipositor straightly extending beyond the tips of the hind femora, ventral margin with 3–5 distinct teeth near extreme apex (Fig. 3).


Measurements (length in mm).

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Additional material. 1♂, 6♀, Hunan (Cili Suoxiyu), 1–4.IX.1988 (LIU Xian-Wei) (SEM); 1♂, Guangxi (Longan Longhusan), 29.VIII–1.IX.1995 (LIU Xian-Wei, JIN Xin-bao & ZHANG Wei-Nian) (SEM); 2♀, Guangxi (Xingan Maoershan), 24.VIII.1992 (LIU Xian-Wei & YIN Hai-Sheng) (SEM); 1♂♀, Guangxi (Yangshuo), 150m, 18.VII.1963 (WANG Shu-Yong) (IZCAS).

Distribution. China (Hunan, Sichuan, Guangxi).

FIGURES 1–3. Alloxiphidiopsis emarginata (Tinkham, 1944) comb. n. 1, male abdominal end, dorsal view; 2, female subgenital plate, ventral view; 3, female end of ovipositor, lateral view.

Alloxiphidiopsis cyclo/lamina sp. n.
(Figs. 4–7)

Diagnosis. ♂. Size small. Fore tibiae with ventral spines arranged in type 4, 5 (1, 1). Median process of male 9th abdominal tergite extending beyond last abdominal tergite, with apex bilobed (Fig.4). Hind margin of last abdominal tergite weak concave. Cerci symmetrical, shaped as in Fig. 5. Subgenital plate shaped as in Fig.6.

♀. Subgenital plate deeply forked, nearly to its base, with compressed lateral lobes (Fig.7). Ovipositor straight extending beyond the tips of the hind femora. Ventral margin with 5–6 distinct teeth near the extreme apex.

Coloration: Yellowish green. Tegmina with blackish brown spots. Hind tibial spines darkened.

Measurements (length in mm)

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Discussion. This species is very similar to A. emarginata (Tinkham, 1944), but may be easily recognized by the shape of the male 9th abdominal tergite and female subgenital plate.

Etymology: Name “cyclo-lamina” refers to character of female subgenital plate.
**FIGURES 4–7.** *Alloxiphidiopsis cyclolamina* sp. n. 4, male abdominal end, postero-lateral view; 5, male abdominal end, lateral view; 6, male abdominal end, ventral view; 7, female subgenital plate, ventral view.

*Alloxiphidiopsis irregularis* (Bey-Bienko, 1962) comb. n.

(Figs. 8–10)


**Diagnosis.**

*σ*. Size small. Fore tibiae with ventral spines arranged in type 4, 5 (1, 1). Median process of 9th abdominal tergite long and asymmetrical (Fig.8). Hind margin of last abdominal tergite with two short lobes. Cerci short and asymmetrical, left cercus longer than right one (Fig.10). Subgenital plate quadrate, with a pair of styles.

♀. unknown.

**Coloration:** Yellowish (living possibly greenish), unicolourous.

**Measurements (length in mm)**

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LIU & ZHANG

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Additional material. 1♂, Yunnan (Xishuangbanna Menglong Mengsong), 1800m, 26.IV.1958 (Cheng Han-Hua) (NUT).

Distribution. China (Yunnan).

Alloxiphiopsis irregularis (Bey-Bienko, 1962) comb. n. 8, male abdominal end, dorsal view; 9, male abdominal end, lateral view; 10, male abdominal end, ventral view.

Alloxiphiopsis longicauda sp. n.
(Figs. 11–13)

Diagnosis. ♂. Size small. Fore tibiae with ventral spines arranged in type 4, 5 (1, 1). Median process of 9th abdominal tergite very long and symmetrical, with dilated apex into sharped lateral angle (Fig.11). Hind margin of last abdominal tergite with two short lobes. Cerci long and asymmetrical, left cercus distinctly longer than right one (Fig.13).
♀. unknown.

Coloration: Yellowish (living possibly greenish), unicolourous.

Measurements (length in mm)

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Holotype ♂, Yunnan (Xishuangbanna Menglongmanbing), 650m, 16.IV.1958 (Cheng Han-Hua) (NUT); Paratype 1♂, Yunnan (Jinkang Taozizhai), 1100m, 22.IV.1980 (Zhang Juan) (IZCAS).

Discussion. The males of this new species is very similar to A. irregularis (Bey-Bienko, 1962), but differs in the shape of 9th abdominal tergite and left cercus distinctly longer than right one.

Distribution. China (Yunnan).

Etymology: Name “long-cauda” refers to very long median process of male 9th abdominal tergite.
FIGURES 11–13. *Alloxiphidiopsis longicauda* sp. n. 11, male abdominal end, dorsal view; 12, male abdominal end, lateral view; 13, male abdominal end, ventral view.

*Alloxiphidiopsis ovalis* sp. n.
(Figs. 14–16)

**Diagnosis.** ♂. Size small. Fore tibiae with ventral spines arranged in type 4, 5 (1, 1). Median process of 9th abdominal tergite rather short, with ovate apex (Fig. 14). Hind margin of last abdominal tergite with a pair of short lobes. Cerci shorter and asymmetrical (Fig. 16).

FIGURES 14–16. *Alloxiphidiopsis ovalis* sp. n. 14, male abdominal end, dorsal view; 15, male abdominal end, lateral view; 16, male abdominal end, ventral view.

♀. unknown.

**Coloration:** Brownish yellow(living possibly greenish), unicolourous.
Measurements (length in mm)

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Discussion. This new species is similar to A. irregularis (Bey-Bienko, 1962) and A. longicauda sp. n., however the shape of median process of 9th abdominal tergite and cerci may be easily distinguished.

Distribution. Laos.

Etymology: Name “ova/is” refers to median process of male 9th abdominal tergite with ovate apex.

Acknowledgements

We wish to thank A. V. Gorochov, Zoological Institute, Russian Academy of Sciences, for providing us with essential literature, and we express our thanks to Prof. JIN Xin-Bao for the loan of materials for this study. We also thank our colleague BI Wen-Xuan for his helpful method that considerably improved our figures.

References


