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A new genus and two new species of the tribe Meconematini (Orthoptera: Tettigoniidae) from China

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Abstract

The study deals with one new genus and two new species, i. e. *Allicyrtaspis* **gen. nov.**, *Allicyrtaspis globosis* **sp. nov.** and *Allicyrtaspis conicicersus* **sp. nov.** from China, and provides generic and species descriptions and diagnoses.

Key words: Meconematini, new genus, new species, China

Introduction

The tribe Meconematini includes brachypterous groups, about 20 genera of which are distributed in Asia (Gorochov, 1993, 1998, 2008; Liu, 2000; Liu, Zhou & Bi, 2010). The Chinese fauna of the brachypterous groups deals with some genera and species (Xia & Liu, 1993; Liu, 2000; Liu & Zhou, 2007; Liu & Zhang, 2007; Liu & Bi, 2008; Liu, Zhou & Bi, 2010; Bian, Shi & Chang, 2012; Wang, Li & Liu, 2012), most of which are endemic to China.

The tribe Meconematini is very diverse and genera and species have very limited distributions (Gorochov, 2008). The brachypterous groups, it was confirmed by our investigations, occur only in the restricted, suitable habitats.

This article presents one new genus and two new species, *Allicyrtaspis* Shi, Bian & Chang **gen. nov.**, *Allicyrtaspis globosis* Shi, Bian & Chang **sp. nov.** and *Allicyrtaspis conicicersus* Shi, Bian & Chang **sp. nov.** The type specimens are deposited in the Museum of Hebei University.

Methods

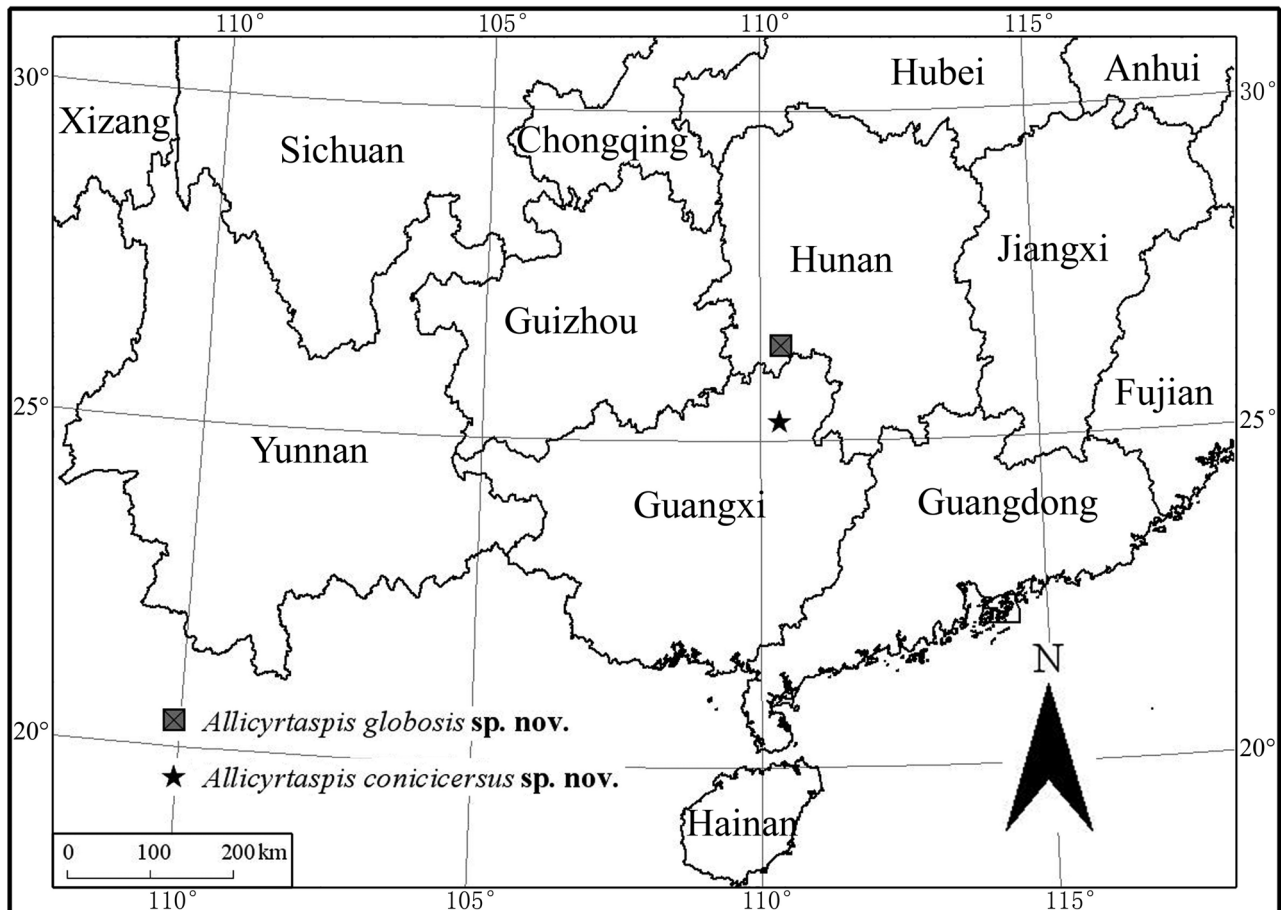
The new species described were collected by net sweeping during the day, along edges of streams and roads within the forest.

In the descriptions below the following conventions were adopted for specimen measurements: body—the distance from apex of fastigium verticis to posterior margin of tenth abdominal tergite; tegmen—the visible distance from base of tegmen to the apex in lateral view; postfemur—the distance from base of postfemur to the apex of genicular lobe.

Allicyrtaspis Shi, Bian & Chang **gen. nov.**

Generic diagnosis. Body small, robust, but comparative large for the tribe Meconematini. Head short and stout, fastigium frontis slightly inclined. Fastigium verticis conical, apex obtusely rounded, with median sulcus. Apical segment of maxillary palpus slightly longer than subapical one, the apex slightly swollen. Male pronotum extended posteriorly. Disc of pronotum flat, metazona not raised; anterior and median transverse sulci indistinct, posterior transverse sulcus distinct; posterior margin of paranota slightly broadened; humeral sinus absent. Pro- and

mesotibiae armed on ventral margins with spines, tibial tympana open on both sides. Posttibiae with a pair of dorsal apical spurs and two pairs of ventral apical spurs. Male tegmina brachypterous, not reaching or slightly surpassing posterior margin of pronotum; hind wings absent. Male tenth abdominal tergite obviously projecting backwards, enlarged, posterior area bifurcate; cercus stout and short; genitalia sclerotized, longer, surpassing posterior margin of subgenital plate; the latter with styli.



MAP 1. Distribution of the genus *Allicyrtaspis* Shi, Bian & Chang **gen. nov.**

Discussion. The new genus resembles the genus *Cyrtaspis* Fischer, 1853, but differs from the latter in following characters: male pronotum with disc flat, metazona not raised, posterior margin of lateral lobe slightly broadened; tenth abdominal tergite distinctly specialized, longer and enlarged, posterior area bifurcate; cercus short and stout; genitalia longer than subgenital plate.

Type species: *Allicyrtaspis globosis* Shi, Bian & Chang **sp. nov.**, feminine gender, here designated.

Etymology. The name of the new genus is derived from Greek ‘all-’, and the genus *Cyrtaspis* name.

Allicyrtaspis globosis* Shi, Bian & Chang **sp. nov.*

(Map. 1, Fig. 1)

Male. Body small. Head stout and short. Fastigium frontis faintly inclined, fastigium verticis conical with apex obtusely rounded, furrowed on dorsum. Eyes subglobular, protruding laterally. Apical segment of maxillary palpi slightly longer than subapical one, apex slightly swollen.

Pronotum protruding backwards, surpassing posterior margin of second abdominal tergite, anterior margin straight, indistinctly concave, posterior margin obtusely rounded; anterior and median transverse sulci indistinct, posterior transverse sulcus distinct; posterior margin of paranota slightly broadened, without humeral sinus. Thoracic auditory spiracle comparatively large, oval.

All femora not bearing spines on ventral margin. Procoxa with a spine, inner and outer sides of ventral margin of protibiae with 5 spines respectively (including a pair of ventral apical spines); tibial tympana open on both sides, Elongate-oval. Mesotibiae with 3–4 spines on inner side and 4–5 spines on outer side of ventral margin. Genicular lobes of postfemora with apices obtuse, posttibiae with 22–25 spines on inner and outer sides of dorsal margin separately, and a pair of dorsal apical spurs and two pairs of ventral apical spurs.

Tegmina short, not reaching posterior margin of pronotum, or slightly surpassing posterior margin of pronotum, apices faintly truncate; hind wings absent.

Ninth abdominal tergite with central area short lateral margins moderately extended. Tenth abdominal tergite (Fig. 1C) obviously protruding backwards, basal area slightly broad, apical half narrow, the lateral margins slightly broadened, ventral margin of the central area prominently undulate; posterior margin with a broad V-shaped notch. Cercus (Fig. 1D) short, basal area globular, apical half thin, apex obtusely rounded, not surpassing posterior margin of tenth abdominal tergite, partially hidden under tenth abdominal tergite. Genitalia long, surpassing posterior margin of tenth abdominal tergite, sclerotized, apical half area curved upwards, apex widened, rectangle-shaped, concave, centre of posterior margin with a notch. Subgenital plate (Fig. 1E) elongate, basal area concave, posterior area with an obtuse angular notch, the middle area convex; styli stout and short, conical, located on apices of lateral margins of subgenital plate, directed inwards.

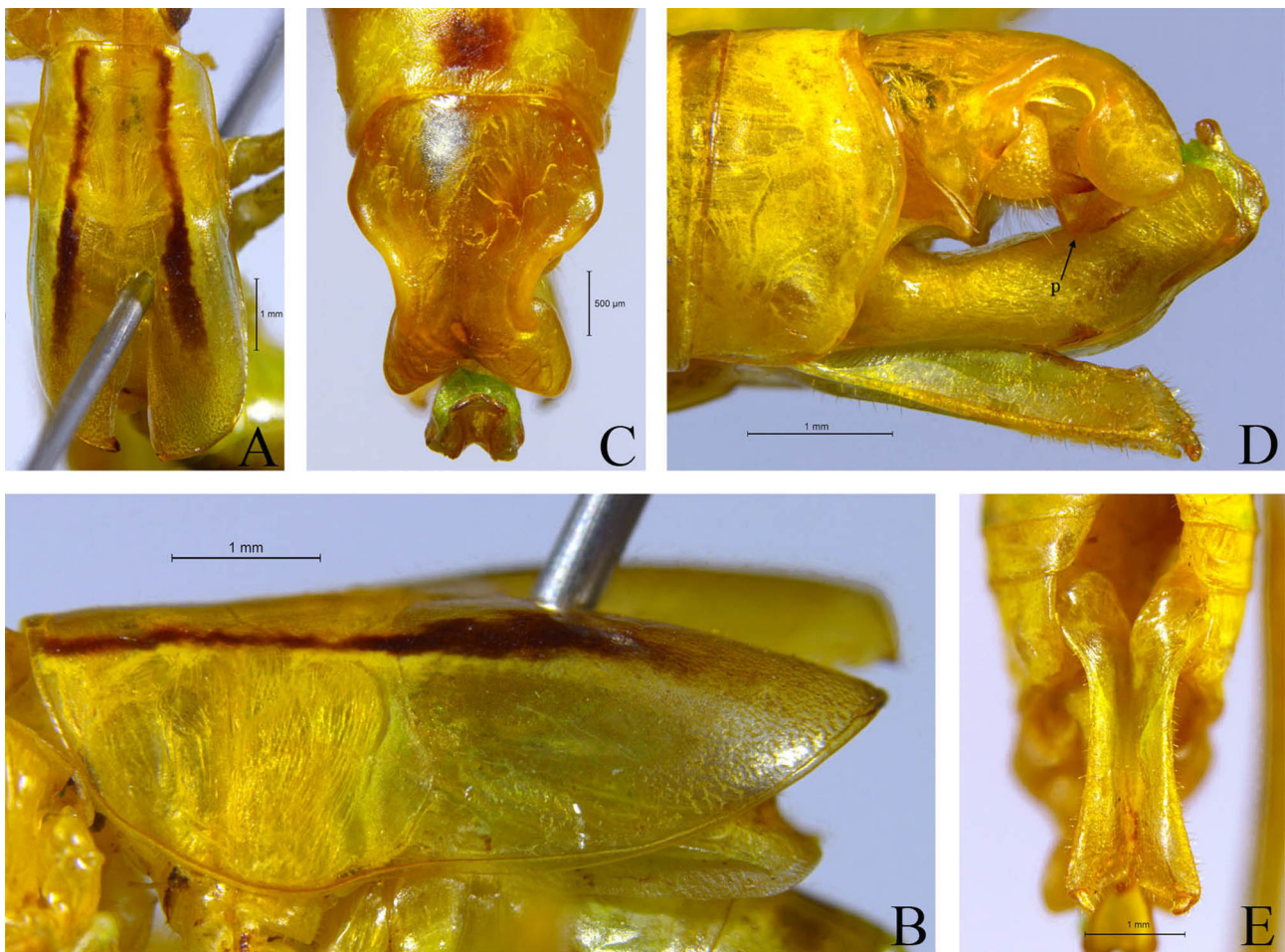


FIGURE 1. *Allicyrtaspis globosis* sp. nov., male: **A.** pronotum in dorsal view; **B.** pronotum in lateral view; **C.** apex of abdomen in dorsal view; **D.** apex of abdomen in lateral view; **E.** apex of abdomen in ventral view.

Coloration. Body light yellowish green (probably green when alive), some area yellowish brown. Fastigium verticis with a longitudinal brown stripe. Eyes light brown. Disc of pronotum with a pair of longitudinal brown stripes, slightly diverging afterwards, which disappear near posterior area of pronotum. Apical area of posttibiae spines, spurs and claws brown. Dorsal margin of abdomen with a longitudinal light brown stripe.

Female. Unknown.

Type material. Holotype: ♂, Yunshan, Wugang, Hunan, China, collected by Jian-Hua Huang.

Measurements (mm). Body: ♂14.0; pronotum: ♂6.1; tegmen: ♂2.0; postfemur: ♂10.8.

Distribution. China (Hunan).

Etymology. The name of the new species is derived from the morphology of the male cercus.

***Allicyrtaspis conicercus* Shi, Bian & Chang sp. nov.**

(Map.1, Fig. 2)

Male. Body stout. Fastigium frontis slightly inclined; fastigium verticis conical, apex obtusely rounded, with median sulcus. Eyes oval, prominently protruding forwards. Apical segment of maxillary palpus slightly longer than subapical one, apex slightly swollen.

Pronotum (Fig. 2A) produced posteriorly, surpassing posterior margin of second abdominal tergite; anterior transverse sulcus indistinct, median and posterior transverse sulci distinct; anterior margin straight, posterior margin obtusely rounded; paranota (Fig. 2B) with posterior margin slightly broadened; humeral sinus absent. Thoracic auditory spiracle comparatively large, oval.

Tegmina short, not surpassing posterior margin of pronotum, apices slightly truncate; hind wings absent.

Procoxa with 1 long spine, protibia with 5 spines on inner and outer sides of ventral margin separately; tibial tympana opened on both sides, long oval. Mesotibiae with 5 spines on inner side and 6 spines on outer side of ventral margin. Genicular lobes of postfemur with apices obtuse, posttibiae with 18–20 spines on inner and outer sides of dorsal margin respectively, having a pair of dorsal apical spurs and two pairs of ventral apical spurs.

The central area of ninth abdominal tergite (Fig. 2C) narrower, lateral margins protruding backwards. Tenth abdominal tergite obviously projecting posteriorly (Figs. 2C, E–F), basal area broader, middle area constricted, apical area broadened, anchor-shaped (Figs. 2C, E) in lateral view, posterior margin split, the ventral margin with a pair of cylindrical projections, apices rounded (Figs. 2D, F). Cercus (Figs. 2E–F) feebly elongate, basal portion stout, apical portion narrow, curved upwards, apices rounded. Genitalia sclerotized, longer than subgenital plate, cylindrical, apical half curved upwards, apex widened, rectangular. Subgenital plate (Figs. 2F–G) elongate, basal area concave, lateral margins parallel, posterior margin with a shallow notch; styli cylindrical (Fig. 2G), apices obtusely rounded, located on the lateral apices of subgenital plate.

Coloration. Body light yellowish brown (probably yellowish green when alive). Disc of pronotum with a pair of longitudinal brown stripes, which disappear near posterior area of pronotum. Apices of posttibia spines and claws brown.

Female. Unknown.

Type material. Holotype: ♂, Huangsha, Lingui, Guangxi, 17 August, 2006, coll. Shao-Li Mao and Li-Juan Wang. Paratype: 1♂, the other data as holotype.

Measurement (mm). Body: ♂12.0–13.0; pronotum: ♂5.7–6.0; tegmen: ♂1.1–1.3; postfemur: ♂9.6–9.8.

Discussion. The new species differs from *Allicyrtaspis globosis* sp. nov. in male tenth abdominal tergite, cerci, subgenital plate and genitalia.

Distribution. China (Guangxi).

Etymology. The name of the new species is derived from male cercus morphology, Greek *conic*+*cercus*.

Acknowledgments

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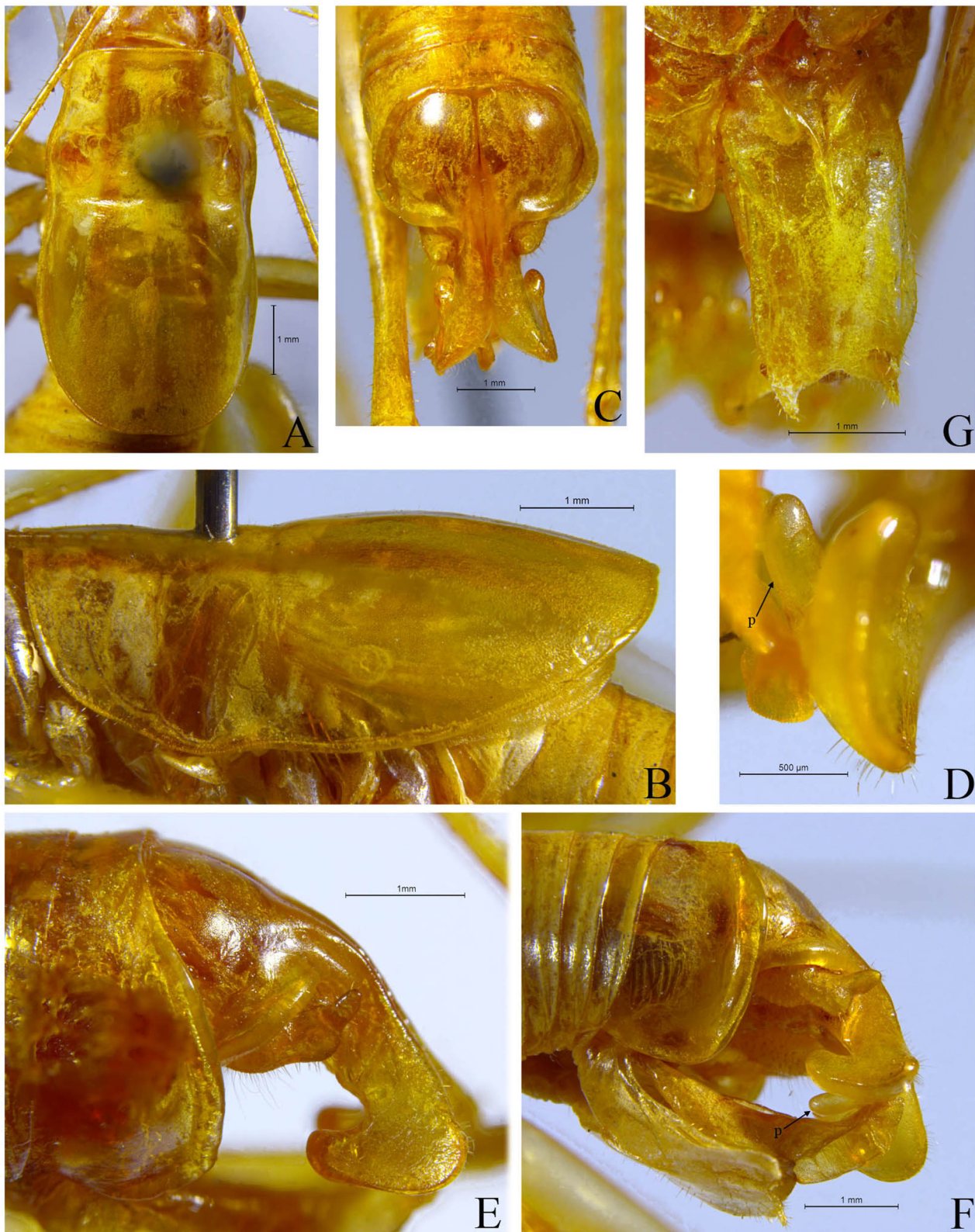


FIGURE 2. *Allicyrtaspis conicicersus* sp. nov., male: **A.** pronotum in dorsal view; **B.** pronotum in lateral view; **C.** tenth abdominal tergite in dorsal view; **D.** tenth abdominal tergite in ventro-apical view; **E.** apex of abdomen in lateral view; **F.** apex of abdomen in latero-apical view; **G.** subgenital plate in ventral view; **p.** a cylindrical projection.

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