

Two new species of the genus *Hyboella* HANCOCK (Orthoptera: Tetrigoidea: Metrodoridae) from China

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Abstract. Two new species of *Hyboella* HANCOCK, *Hyboella brevipennis* sp. n. and *Hyboella jinxiensis* sp. n. are described. The specimens were collected from the southern part of China. The type specimens are deposited in the Institute of Zoology, Shaanxi Normal University.

Key words: Orthoptera, Tetrigoidea, Metrodoridae, *Hyboella*, new species, China.

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INTRODUCTION

From July to August 2005, an investigation of insects has been carried out in southern part of China. After examining and identifying all collected specimens, two new species of *Hyboella* HANCOCK have been recognized.

The genus *Hyboella* was erected by HANCOCK in 1915 and currently includes the following 23 species (HANCOCK 1915; GUNTHER 1939; SHISHODIA 1991; LIANG 2000; UVAROV 1925; ZHENG 2003; ZHENG 2005): *Hyboella dilatata* DEHAAN, 1843, *H. heinrichi* GUNTHER, 1939, *H. inflata* KRAUSSK 1903, *H. keyensis* GUNTHER, 1935, *H. obesa* HANCOCK, 1915, *H. overbecki* GUNTHER, 1939, *H. perakensis* GUNTHER, 1939, *H. angulifrons* HANCOCK, 1915, *H. conioptica* HANCOCK, 1915, *H. dentata* HANCOCK, 1915, *H. similis* GUNTHER, 1939, *H. nullipennis* HANCOCK, 1913, *H. tumida* HANCOCK, 1913, *H. tibetana* UVAROV, 1925, *H. taiwanensis* LIANG, 2000, *H. hainanensis* LIANG, 2002, *H. aelytra* ZHENG, 2002, *H. guizhouensis* ZHENG, 2002, *H. strictvertex* LIANG, 2002, *H. longipennis* ZHENG, 2005, *H. guangxiensis* ZHENG & JIANG, 1994, *H. longinota* ZHENG & JIANG, 2002, *H. yunnana* ZHENG, 1998. They are mainly distributed in Nepal,

Burma, India, Indonesia, Malaysia, Thailand and China (HANCOCK 1915; GUNTHER 1939; SHISHODIA 1991; UVAROV 1925; ZHENG 2005). The present paper focuses on describing the unique features of two new species and reviews the genus characters. The type specimens are deposited in the Institute of Zoology, Shaanxi Normal University.

DESCRIPTIONS

Hyboella HANCOCK, 1915

Hyboella HANCOCK, 1915, Rec. Ind. Mus. (Ent.), 11:104; GUNTHER, 1939, Revision der Acrydiinae (Orthoptera). III. Sectio Amorphopi (Metrodorae Bol. 1887, Aut.):205~210; KEVAN, 1966, Entomologiske Meddelelser, 34: 382; SHISHODIA, 1991, Rec.Zool. Surv. India. Occ. Paper, 140: 105~121; LIANG & ZHENG, 1998, Fauna Sinica, Insecta.12: 111; ZHENG, 2005, Fauna of Tetrigoidea from Western China: 165.

Type species: *H. tentata* HANCOCK, 1915.

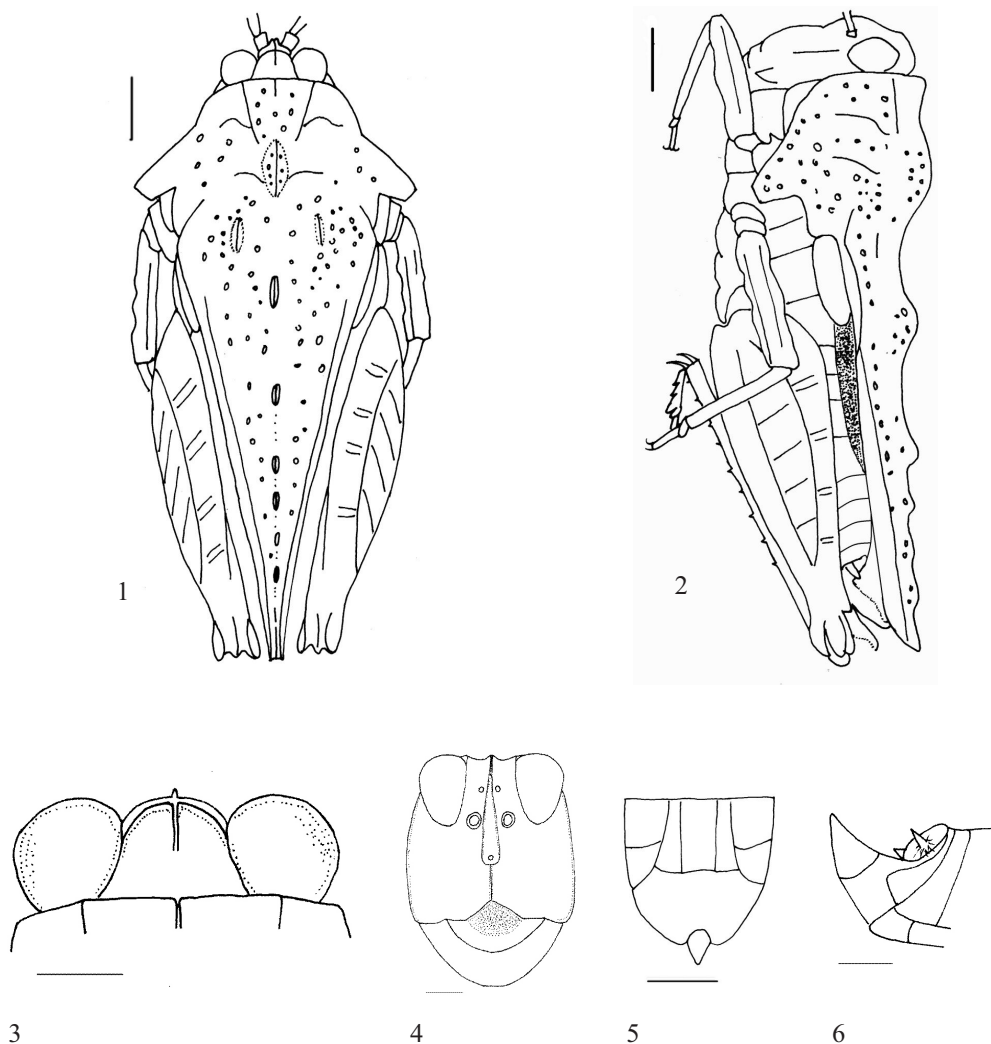
D i a g n o s i s. Size large and stout. Vertex generally as broad as or wider than an eye. Median keel distinct. Lateral view, frontal ridge arched protruding forward, longitudinal sulcus slightly narrow. Lateral ocellus located in middle or below middle of anterior margin of eye. Antennae filiform, inserted between lower margins of eyes or inner sides below lower margins of eyes. Anterior margin of pronotum straight or slightly protuberanced in middle, posterior margin wedge, end not reaching or slightly reaching top of hind femur, median keel humpbacked elevated in front of shoulders, slightly flat behind shoulders. Posterior lower angle of lateral lobe of pronotum flaky widened outward, end truncate. Tegmina and wings absent or present. Lower margins of fore and median femora straight or waved. Hind femur stout. First segment of posterior tarsi longer than the third.

1. *Hyboella brevipennis* sp. n.

(Figs 1-6)

M e a s u r e m e n t s. Length of body in male 8-8.5 mm, in female 10.5-11 mm; length of pronotum in male 7.5-8 mm, in female 10-10.5 mm; length of hind femur in male 5.5-6 mm, in female 7-7.5 mm.

F e m a l e. Size small, stout. Head not exserted. Anterior margin of vertex arched (Fig. 3), not protruding beyond eyes, median carina conspicuous. Width of vertex equal to width of an eye (Fig. 3), in profile, vertex and frontal ridge forming obtuse angle, frontal ridge concave before lateral ocellus. Frontal ridge arched protruding between two antennae, width of longitudinal sulcus of frontal ridge equal to width of first segment of antenna. Antennae filiform, inserted between lower margins of eyes (Fig. 4), 15 segments, length of middle segment 5-6 times of its width. Eyes globose, lateral ocelli placed at middle of anterior margins of eyes. Front part of pronotum strongly widened, arched and uplifted, disc of pronotum with numerous coarse tubercles (Figs 1,2). Anterior margin of pronotum straight, in contact with hind margin of eyes (Fig. 1). Midkeel of pronotum interrupted (Fig. 1), lateral view, upper margin of pronotum undulated in profile (Fig. 2). Lateral keels of prozona constricted backward (Fig. 1), humeral angle of obtuse shape, with a pair of abbreviated carinae between shoulders (Fig. 1). Hind process of pronotum wedge, just reaching top of hind femora (Figs 1, 2). Lateral lobes of pronotum produced forwards, end of posterior angles truncate. Posterior margins of lateral lobes of pronotum with two concavities. Tegmina long oval, apex round. Wings comparatively short narrowed, only reaching the middle of hind femora (Fig. 2), but not reaching top of hind process of pronotum. Upper and lower margins of fore femur and midfemur undulated (Fig. 2), midfemur wider than tegmina. Length of hind femur as 2.8 times as width, preknee teeth and knee teeth acute. Outer side of hind tibia with 9-10 spines, inner side with 6-7 spines. Length of first segment of posterior tarsus longer than third, third pulvillus of first tarsus



Figs 1-6. *Hyboella brevipennis* sp. n.: 1 – body of female, dorsal view; 2 – body of female, lateral view; 3 – head of female, dorsal view; 4 – head of female, frontal view; 5 – subgenital plate of female, ventral view; 6 – subgenital plate of male, lateral view. Scale bars: 1-2 = 1 mm; 3-6 = 0.5 mm.

longer than first and second, apices of three pulvilli sharp. Ovipositor narrow and long, length of upper valvulae 4 times its width, upper and lower valvulae with slender saw-like teeth. Width of subgenital plate longer than its length, posterior margin of subgenital plate with triangular convexity (Fig. 5).

Body dark brown.

M a l e. Body smaller than in female, features of structure similar. Subgenital plate brief cone-shaped, apex sharp (Fig. 6).

H o l o t y p e female. Maguan, Yunnan prov., CHINA, 23.1°N, 104.2°E, 1450 m alt., 30-VII-2005, collected by Wei-An DENG.

P a r a t y p e s: 2 males and 4 females, same data as holotype. 2 males and 2 females, Pingbian, Yunnan prov., CHINA, 22.5°N, 103.8°E, 1600m alt., 26-VII-2005, collected by Wei-An DENG.; one female, Malipo, Yunnan prov., CHINA, 22.6°N, 104.7°E, 1500 m alt., 01-VIII-2005, collected by Shi-Zhen WEI. 2 males and 3 females, Tianyang, Guangxi prov., CHINA, 23.6°N, 106.8°E, 550 m alt., 08-VIII-2005, collected by Wei-An DENG.

Type specimens are deposited in the Institute of Zoology, Shaanxi Normal University.

E t y m o l o g y. The new species name is derived from the Latin *brev* and *pennis*, meaning wings comparatively short narrowed, only reaching the middle of hind femora.

R e m a r k s. This species is similar to *Hyboella guangxiensis* ZHENG et JIANG, 1994, but differs in: anterior margin of vertex not protruding beyond eyes, width of vertex equal to width of eye (Fig. 3), wings comparatively short narrowed, only reaching the middle of hind femora (Fig. 2), length of first segment of posterior tarsus longer than third, third pulvillus of first tarsus longer than first and second, apices of three pulvilli sharp.

2. *Hyboella jinxiensis* sp. n.

M e a s u r e m e n t s. Length of body in male 8 mm, in female 10.5-11 mm; length of pronotum in male 8 mm, in female 9-9.5 mm; length of hind femur in male 5.5 mm, in female 6.5-6.8 mm.

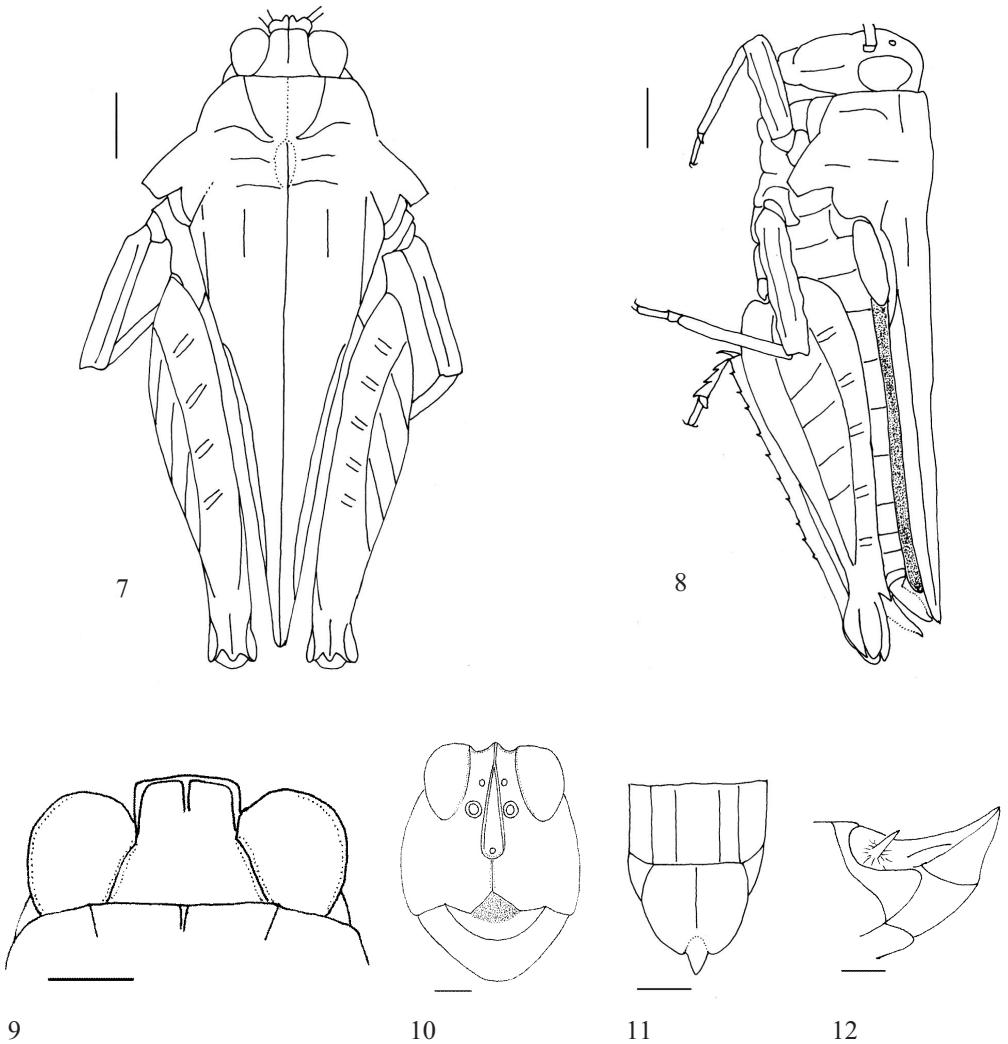
F e m a l e. Size small, stout. Head not exserted. Anterior margin of vertex straight, slightly protruding beyond eyes (Fig. 9), median carina conspicuous. Width of vertex equal to width of eye (Fig. 9), in profile, vertex and frontal ridge forming an obtuse round shape. Frontal ridge arched protruding between two antennae, width of longitudinal sulcus of frontal ridge equal to width of first segment of antenna. Antennae filiform, inserted (Fig. 10), 14 segments, length of middle segment 5 times of its width. Eyes globose, lateral ocelli placed on middle of anterior margins of eyes. Front part of pronotum strongly wider, arched and uplifted, disc of pronotum smooth. Anterior margin of pronotum straight, in contact with hind margin of eyes (Figs 7,9). Midkeel of pronotum completed (Fig. 7), lateral view, upper margin of pronotum straight in profile (Fig. 8). Lateral keels of prozona constricted backward (Fig. 7), humeral angle obtuse shape, with a pair abbreviated carinae between shoulders (Fig. 7). Hind process of pronotum wedge, slightly surpassing knee of hind femora, not reaching top of hind femora (Figs 7,8). Lateral lobes of pronotum produced forwards, end of posterior angles truncate. Posterior margins of lateral lobes of pronotum with two concavities. Tegmina long oval, apex round. Wings reaching knee of hind femora, but not reaching top of hind process of pronotum (Fig. 8). Lower margins of fore femur and midfemur undulated (Fig. 8), midfemur equal to width of tegmina. Length of hind femur as 2.8 times as width, preknee teeth and knee teeth acute. Outer side of hind tibia with 9-10 spines, inner side with 7 spines. Length of first segment of posterior tarsus longer than third, third pulvillus of first tarsus longer than first and second, apices of three pulvilli sharp. Ovipositor narrow and long, length of upper valvulae 4 times its width, upper and lower valvulae with slender saw-like teeth. Width of subgenital plate equal to its length, posterior margin of subgenital plate with triangular convexity (Fig. 11).

Body dark brown. Wings black (Fig. 8).

M a l e. Body smaller than in female, feature of structure similar, width of midfemur wider than the width of tegmina, subgenital plate brief cone-shaped, apex sharp (Fig. 12).

R e m a r k s. This species can be distinguished from *Hyboella guizhouensis* ZHENG, 2005 by the following features: anterior margin of vertex straight, antennae inserted (Fig. 10) lateral keels of prozona constricted backward (Fig. 7)., Lower margins of fore femur and midfemur undulated (Fig. 8), female midfemur equal to width of tegmina.

A c k n o w l e d g m e n t s. The project is supported by the Guangxi Education Department Foundation of China (No.200607MS035).



Figs 7-12. *Hyboella jinxiensis* sp. n.: 7 – body of female, dorsal view; 8 – body of female, lateral view; 9 – head of female, dorsal view; 10 – head of female, frontal view; 11 – subgenital plate of female, ventral view; 12 – subgenital plate of male, lateral view. Scale bars: 7-8 = 1 mm; 9-12 = 0.5 mm.

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