

Checklist of *Gergithus* Stål (Hemiptera: Issidae: Hemisphaeriinae) with Descriptions of Two New Species from China

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Abstract: A checklist of *Gergithus* Stål is provided. Two new species, *G. rugiformis*, sp. nov. and *G. bimaculatus*, sp. nov. are described and illustrated from Yunnan Province and Chongqing City, China. The type specimens of new species are kept in the Insect Collection, College of Plant Protection, Southwest University (SWU).

Key words: Hemiptera; Issidae; Hemisphaeriinae; *Gergithus*; new species; China

CLC number: Q969.36*5.8

Document code: A

Article ID: 1000-7482(2009)03-0181-07

Introduction

Gergithus Stål, a very large genus with 59 species, is restricted to Oriental and Palaearctic regions. Che *et al.* (2007) reviewed *Gergithus*, provided the generic diagnosis and described seven species from China.

Gergithus as well as other genera of Hemisphaeriinae are easily distinguished from rest genera of Issidae by hemispherical body, clypeus on same plane as frons, tegmen generally convex without claval suture and legs not dilated. *Gergithus* differs from relative genera in Hemisphaeriinae by vertex not projected, frons, pronotum and mesonotum without tubercles, and wing longer than half of tegmen.

Herein we describe two new species of this genus from Chongqing and Yunnan, China. All types are kept in the Insect Collection, College of Plant Protection, Southwest University (SWU).

Checklist of the species of *Gergithus*

G. affinis Schumacher, 1915: 135, China

G. bimaculatus, sp. nov., China

G. bipustulatus (Walker, 1858: 95, *Hemisphaerius*), Sri Lanka

G. bistriatus (Schumacher, 1915: 136, *Hemisphaerius*), China

Received date: 2009-07-23

Foundation item: The research was supported by Southwest University Development Foundation (SWUF2007025)

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- G. bizonatus* (Matsumura, 1916: 96, *Hemisphaerius*), China, Japan
G. carbonarius Melichar, 1906: 65, China, Japan
G. chelatus Che, Zhang and Wang, 2007: 617, China
G. chihpensis Chan *et* Yang, 1994: 38, China
G. complicatus Distant, 1916: 103, Sri Lanka
G. conspicularis Distant, 1916: 103, Sri Lanka
G. contusus (Walker, 1851: 378, *Hemisphaerius*), China, Indonesia
G. cribratus Melichar, 1906: 64, Sri Lanka
G. dubius (Bulter, 1875: 97, *Hemisphaerius*), Sri Lanka
G. elongatus (Distant, 1906: 362, *Hemisphaerius*), India
G. erebus Distant, 1916: 101, India
G. flaviguttatus Hori, 1969: 56, China, Japan
G. flavimacula (Walker, 1851: 378, *Hemisphaerius*), China, Japan, Malaysia, India
G. fromosanus Metcalf, 1955: 263, China, Japan
G. gravidus Melichar, 1906: 61, China, Vietnam
G. herbaceus (Kirby, 1891: 147, *Hemisphaerius*), Sri Lanka
G. horishanus Matsumura, 1916: 102, China
G. hosticus Chan *et* Yang, 1994: 31, China
G. ignotus Melichar, 1906: 66, Myanmar
G. iguchii Matsumura, 1916: 98, Japan
G. kosshunensis Matsumura, 1916: 102, China, Japan
G. kuyanians Matsumura, 1916: 103, China, Japan
G. lineatus Kato, 1933: 461, China, Japan
G. lineolatus Melichar, 1906: 60, Indonesia
G. longulus Schumacher, 1915: 135, China, Japan
G. multipunctatus Che, Zhang and Wang, 2007: 621, China
G. nigrolimbatus Schumacher, 1915: 134, China
G. nilgiriensis (Distant, 1906: 361, *Hemisphaerius*), India
G. nummarius Chan *et* Yang, 1994: 23, China
G. okinawanus Matsumura, 1936: 82, Japan
G. parallelus Che, Zhang and Wang, 2007: 619, China
G. pendulus Chan *et* Yang, 1994: 47, China
G. pigrans Melichar, 1906: 64, Malaysia
G. proteus Distant, 1916: 102, India
G. pseudotessellatus Che, Zhang and Wang, 2007: 623, China
G. quinque maculatus Che, Zhang and Wang, 2007: 615, China
G. reticulatus (Distant, 1906: 361, *Hemisphaerius*), India
G. robustus Schumacher, 1915: 127, China
G. rocticus Chan *et* Yang, 1994: 34, China
G. rotundus Chan *et* Yang, 1994: 36, China
G. rugiformis, sp. nov., China
G. satsumensis Matsumura, 1916: 101, Japan
G. schaumi (Stål, 1855: 191, *Hemisphaerius*), Sri Lanka
G. secundus (Melichar, 1903: 75, *Hemisphaerius*), Sri Lanka
G. signatifrons Melichar, 1906: 60, Indonesia
G. spinosus Che, Zhang and Wang, 2007: 615, China
G. stramineus Hori, 1969: 58, China

- G. taiwanensis* Hori, 1969: 54, China
G. tessellatus Matsumura, 1916: 100, China, Japan
G. unicolor Melichar, 1906: 66, China, Japan
G. variabilis (Butler, 1875: 98, *Hemisphaerius*), China, Japan, Malaysia, India
G. venosus (Distant, 1906: 363, *Hemisphaerius*), Myanmar
G. versicolor Distant, 1916: 102, Sri Lanka
G. vidulus Melichar, 1906: 62, India
G. walkeri (Butler, 1862: 308, *Hemisphaerius*), Thailand, Malaysia
G. yayeyamensis Hori, 1969: 55, Japan, China
G. yunnanensis Che, Zhang and Wang, 2007: 625, China

1. *Gergithus rugiformis*, sp. nov. (Figs. 1~15)

Description. Length (incl. tegmen): ♂ 4.3 mm, ♀ 4.5 mm; Length of tegmen: ♂ 3.7 mm, ♀ 3.8 mm.

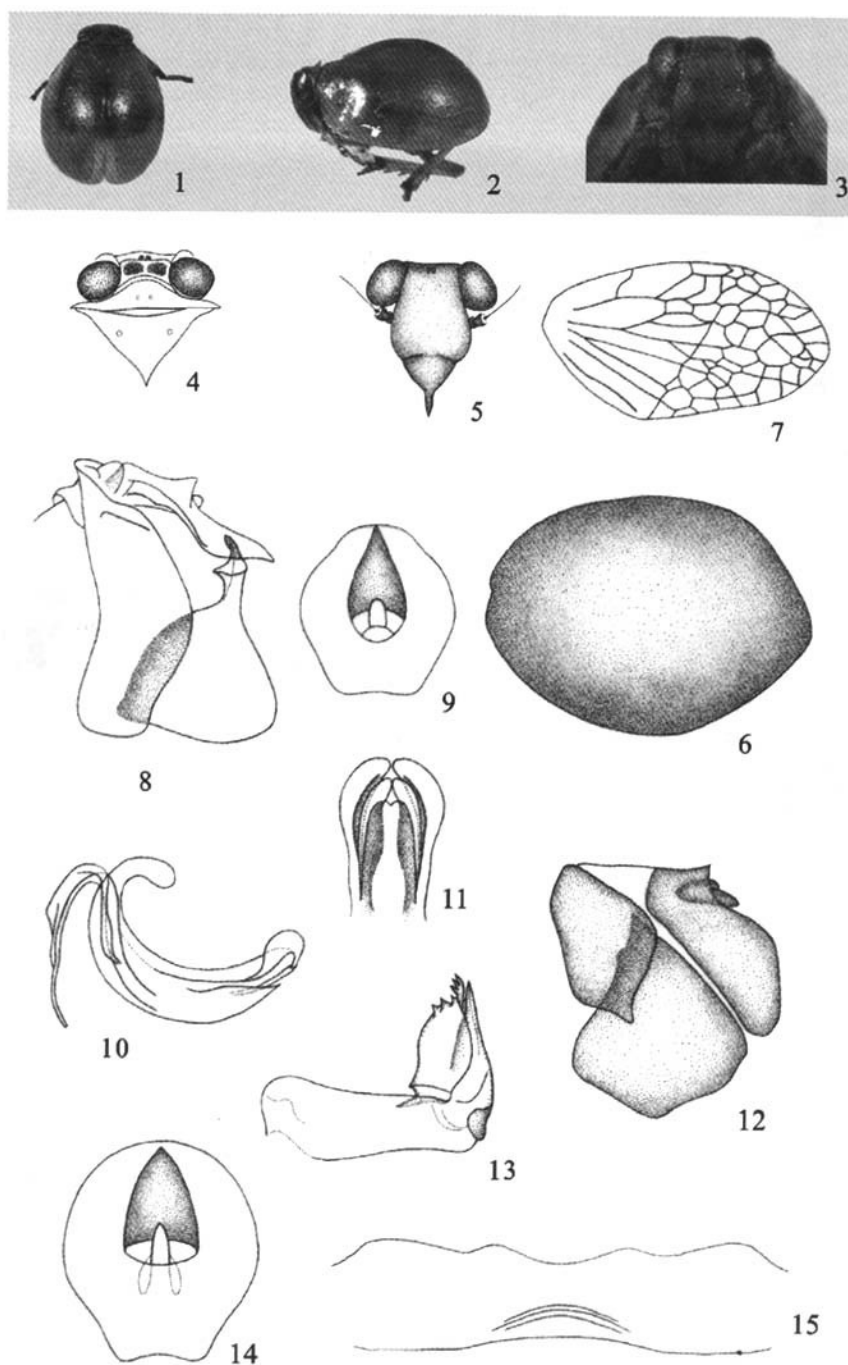
Coloration. Body brown scattered with fine granules (Fig. 1). Rostrum fawn. Tegmen shiny brown. Legs brown, fore- and meso- tibiae black apically, profemora black at base. Venter brown, apex of venter dark brown.

Vertex slightly wrinkled, wide and nearly quadrangular, $3.0\times$ wider at apex than long in middle line, disc slightly depressed (Fig. 4). Frons slightly convex, narrower than long, with two small and nearly elliptical carinae near apex; $1.1\times$ longer in middle line than widest part, $1.8\times$ wider at widest part than at base (Fig. 5). Frontoclypeal suture clearly arched. Pronotum narrow and posteriorly roundly sinuate, with two pits at mid. Mesoscutellum broad and short, $2.1\times$ wider at the widest part than medial length, with two pits along lateral margin (Fig. 4). Tegmen nearly elliptical, $1.6\times$ longer than widest part, translucent without macula (Fig. 6). Wing large, $0.9\times$ length of tegmen (Fig. 7). Spinal formula of hind leg 6- (7- 8)-2.

Male genitalia. Anal segment nearly elliptical in dorsal view (Fig. 9), lateroapical angle roundly smooth, widest at mid. Anal tube sitting at medial part, apical margin slightly convex and rounded. Pygofer in profile slightly longer ventrally than dorsally, dorsocaudal angle strongly produced, in lateral view with rumple apically (Fig. 8). Connective fine and long, fused with aedeagus. Aedeagus U-shaped, symmetrical, with lateral, ventral and dorsal lobes, basal part curved, smooth and directing caudally (Fig. 10); dorsal lobes bilobate in dorsal view, apical margin round and auriculate; lateral lobes bilobate in lateral view, tapering and apex acute; in ventral view ventral lobe slightly compressed and rounded, shorter than dorsal and lateral lobes (Fig. 11). Genital styles with apical margin wider than medial part, subtriangular and rounded at ventrocaudal margin, process short with apices acuminate, dorsal margin curved (Fig. 8).

Female genitalia. Anal segment nearly elliptical in dorsal view, apical margin barely rounded (Fig. 14). Anal tube sitting at mid. Ovipositor with first valvula curved dorsally with 3 nearly parallel teeth; tooth near lateral margin with 3 small teeth upturned (Fig. 13). Third valvula stout, strongly convex and nearly quadrangular, with caudal margin sinuate and polished (Fig. 12). Pregenital sternite obviously concave at mid (Fig. 15).

Holotype: ♂, Feilongmiao, Simian Mountain, **Chongqing**, 13-VII-2008, coll. WANG Zong-qing; Paratypes: 1♀, same data as holotype; 1♂, Dahonghai, Simian Mountain, **Chongqing**, 09-VII-2008, coll. WANG Zong-qing; 1♂, Feilongmiao, Simian Mountain, **Chongqing**, 13-VII-2008, coll. WANG Zong-qing.



Figs. 1-15 *Gergithus rugiformis*, sp. nov.

1. adult (dorsal view); 2. same (lateral view); 3. same (ventral view); 4. head and thorax (dorsal view); 5. frons and clypeus; 6. tegmen; 7. wing; 8. male genitalia (left side); 9. male anal segment (dorsal view); 10. aedeagus (lateral view); 11. apex of aedeagus (ventral view); 12. female genitalia [left side (first valvula absent)]; 13. first valvula (lateral view); 14. female anal segment (dorsal view); 15. female genital scale (ventral view)

Diagnosis. This species is similar to *G. unicolor* Melichar in appearance. However, based on the brown body, clypeus without transverse fascia, as well as mesoscutellum without spots, pygofer in lateral view with rumple apically and the spinal formula of hind tibia as 6- (7- 8)-2, we believe that this species is new to science.

Etymology. The specific name “*rugiformis*” derived from Latin, means the apex of pygofer with rumple.

2. *Gergithus bimaculatus*, sp. nov. (Figs. 16~27)

Description. Length (incl. tegmen): ♂ 4.5mm; Length of tegmen: ♂ 3.9 mm.

Coloration. Body brown and smooth (Fig. 16). Vertex, eyes, frons and clypeus pale brown. Clypeus with black fascia against frontoclypeal suture (Fig. 18). Gena brown with black spots (Fig. 17). Tegmen dark brown with pale yellow spots as Fig. 21. Legs brown, fore- and meso- mora and tibia with black stripes. Venter dark brown, apex of venter slightly yellow.

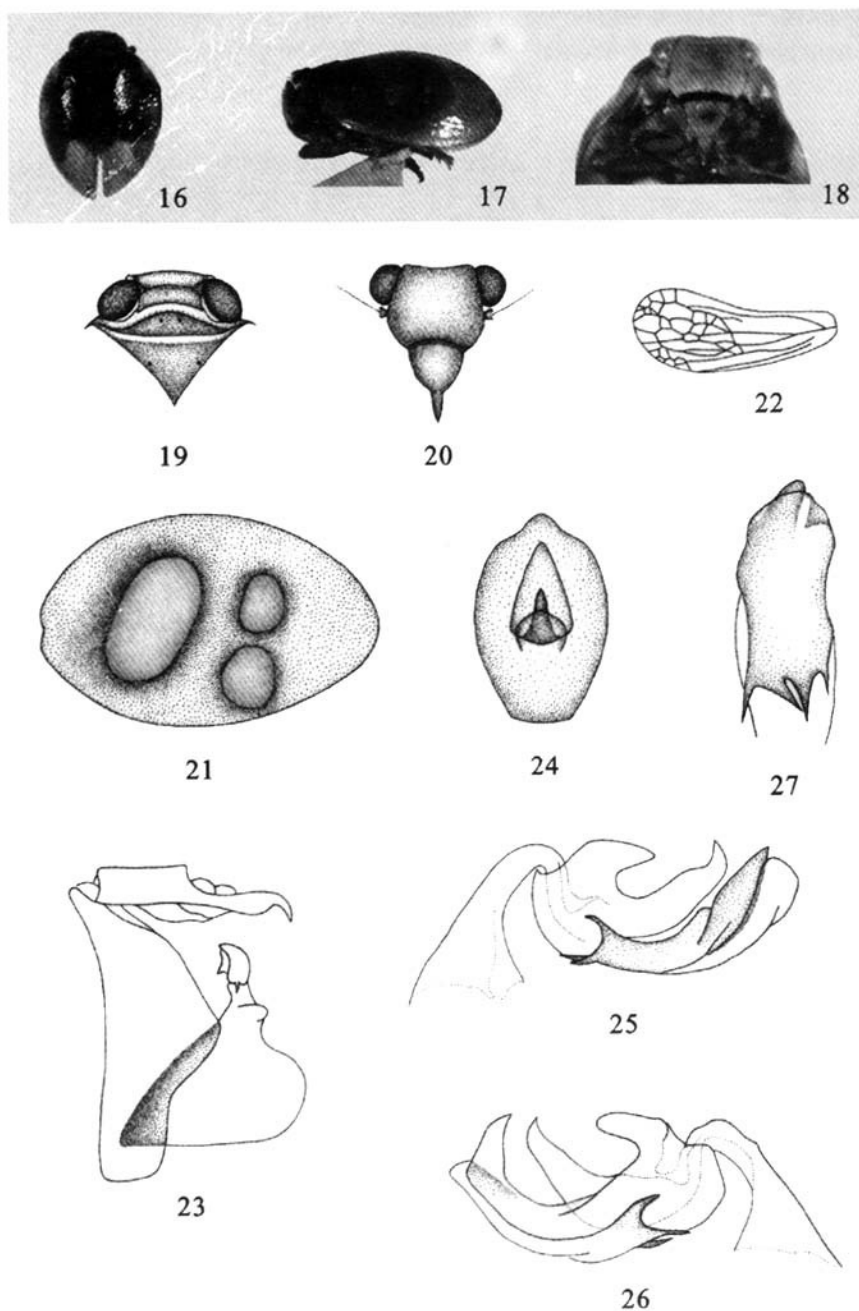
Vertex slightly wrinkled, wide and nearly quadrangular, $3.0\times$ wider at apex than long in middle line, disc slightly depressed (Fig. 19). Frons slightly convex, narrower than long, $1.1\times$ longer in middle line than medial length, $1.6\times$ wider at widest part than at base (Fig. 20). Frontoclypeal suture slightly arched. Pronotum narrow and posteriorly roundly sinuate, with two pits at mid. Mesoscutellum broad and short, $1.7\times$ wider at the widest part than medial length, with two pits along lateral margin (Fig. 19). Tegmen glossy and nearly elliptical, with three elliptical spots, veins indistinct, $1.6\times$ longer than widest part (Fig. 21). Wing small but larger than half of tegmen, $0.6\times$ length of tegmen (Fig. 22). Spinal formula of hind leg 7-9-2.

Male genitalia. Anal segment nearly elliptical in dorsal view, lateroapical angle roundly smooth, widest at mid, apical margin convex (Fig. 24); in lateral view basal margin not straight, hook-like apically, ventral margin strongly convex, angles tapering. Anal tube situated about in the mid. Pygofer in profile slightly longer ventrally than dorsally; dorsocaudal angle strongly produced (Fig. 23). Connective stout and long, fused with aedeagus. Aedeagus shallowly U-shaped, asymmetrical, with lateral, ventral and dorsal lobes (Fig. 25); in dorsal view, dorsal lobes long and slight, right and left dorsal lobes asymmetrical; in lateral view, lateral lobes robust with apex slender, not bilobate (Fig. 25, 26); in ventral view, ventral lobe tortuous and very long, apex tapering (Fig. 27). Aedeagus stout, strongly curved downward medially, with one irregular process, whose apex between ventral and lateral lobes and base quadri-spiniform (Fig. 25, 26, 27). Genital styles with apical margin wider than median part, subtriangular and rounded at ventrocaudal margin; process short and stout, one spine at base and one finger-like carina sitting below process (Fig. 23).

Holotype: ♂, Zhadian Town, Gejiu, Yunnan Province, 20-VII-2007, coll. LI Yin (SWU).

Diagnosis. This species resembles *G. quinquemaculatus* Che, Zhang and Wang. Nevertheless, the brown tegmen with three pale yellow spots, gena with two distinct black spots and the spinal formula of hind tibia 7-9-2 make this species easily identifiable.

Etymology. The specific name is the combination of the Latin prefix “*bi-*” and the Latin word “*maculatus*”, which refers to the two distinct black spots on the gena in lateral view.



Figs. 16~27 *Gergithus bimaculatus*, sp. nov. (♂)

16. adult (dorsal view); 17. same (lateral view); 18. same (ventral view); 19. head and thorax (dorsal view); 20. frons and clypeus; 21. tegmen; 22. wing; 23. male genitalia (left side); 24. male anal segment (dorsal view); 25. aedeagus (left side); 26. aedeagus (right side); 27. apex of aedeagus (ventral view)

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圆瓢蜡蝉属种名名录及中国二新种记述

(半翅目: 瓢蜡蝉科: 球瓢蜡蝉亚科)

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本文提供圆瓢蜡蝉属种名名录, 并报道中国圆瓢蜡蝉属 *Gergithus* Stål 2 新种, 研究标本保存在西南大学植物保护学院标本室。

1. 皱脊圆瓢蜡蝉 *Gergithus rugiformis*, 新种 (图 1~15)

本种与同色圆瓢蜡蝉 *G. unicolor* Melichar 相似, 但其体色为棕色, 额无横带, 中胸盾片无斑点, 尾节侧面观端部具 1 条皱脊, 后足刺式 6- (7- 8)-2。

正模: ♂, 重庆四面山飞龙庙, 2008-VII-13, 王宗庆采 (SWU); 副模: 1♀, 重庆四面山飞龙庙, 2008-VII-13, 王宗庆采 (SWU); 1♂, 重庆四面山大洪海, 2008-VII-09, 王宗庆采 (SWU)。

2. 双斑圆瓢蜡蝉 *Gergithus bimaculatus*, 新种 (图 16~27)

本种与五斑圆瓢蜡蝉 *G. quinquemaculatus* Che, Zhang and Wang 相似, 但其前翅为棕色, 具 3 个浅黄色圆斑, 颊具 2 个黑色斑点, 后足刺式 7-9-2。

正模: ♂, 云南个旧乍甸镇, 2007-VII-20, 李寅采 (SWU)。

关键词: 半翅目; 瓢蜡蝉科; 球瓢蜡蝉亚科; 圆瓢蜡蝉属; 新种; 中国