

A new species of *Geocoris* Fallén (Hemiptera: Heteroptera: Geocoridae) from Hainan Province, China

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Abstract: *Geocoris xishaensis* **sp. nov.** from Hainan Province, China is described. It is characterized by head ochraceous; antennal segments dark; pronotum pale with a large dark spot in median area; hemelytra pale; scutellum black.

Key words: Geocorinae; taxonomy; distribution; big-eyed bugs

中国海南大眼长蝽属一新种（半翅目：异翅亚目：大眼长蝽科）

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摘要：记述大眼长蝽科 1 新种：西沙大眼长蝽 *Geocoris xishaensis* **sp. nov.**，分布于中国海南。该种的主要鉴别特征是：头部赭黄色，触角深色，前胸背板前缘、后缘和侧缘淡黄色，中间具 1 深色大斑，前翅淡黄色，小盾片黑色。

关键词：大眼长蝽亚科；分类；分布；大眼长蝽

Introduction

The Geocoridae family (Hemiptera: Heteroptera) includes five subfamilies. The subfamily Geocorinae is represented by eighteen genera. The *Geocoris* represented by three subgenera and about 140 species across the major zoogeographic regions of the world (Dellapé & Henry 2020). Species in the genus *Geocoris* are predaceous upon other insects and many species play a major role in the biological control of different pests in attacking several crops (El-Sebaey 2000). This genus has never been revised at a worldwide level, although several faunal revisions have been conducted (Radio & Sweet 1982; Malipatil 1994; El-Sebaey 2000; Kondorosy 2006; Brailovsky 2016; Kóbor 2020). Twenty-five species of *Geocoris* have been recorded in China so far (Gao 2010).

In this paper, we describe a new species *Geocoris xishaensis* **sp. nov.** from Hainan Province, China.

Accepted 30 December 2020. Published 25 March 2021. Published online 16 March 2021.

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Material and methods

Composite images and measurements were obtained with a M205FA Leica stereomicroscope and camera using Leica Application Suite software (version 4.5.0). All measurements in the text are given in millimeters.

Abbreviations of depositories:

NJFU — Nanjing Forestry University, Nanjing;

PQSTP — Post-Entry Quarantine Station for Tropical Plant, Haikou Customs District, Hainan.

Taxonomy

Geocoris Fallén, 1814

Geocoris Fallén, 1814: 10 (original description); Slater, 1964: 523 (catalogue); Zheng & Zou, 1981: 79 (fauna of China); Readio & Sweet, 1982: 16 (fauna of United States); Malipatil, 1994: 299 (fauna of Australia); Slater & O'Donnell, 1995: 65 (catalogue); Péricart, 1998: 319 (fauna of France); EL-Sebaey, 2000: 105 (fauna of Egypt); Aukema & Rieger, 2001: 82 (Palearctic catalogue); Kondorosy, 2006: 114 (new synonyms in Oriental Region); Brailovsky, 2016: 410 (fauna of Mexico); Kóbor, 2020: 359 (fauna of French Polynesia); Dellapé & Henry, 2020 (website of Lygaeoidea species).

Type species. *Cimex grylloides* Linnaeus, 1761, by subsequent designation of Oshanin (1912).

Body stout convex. Head transverse, with large, reniform eyes, not strongly pedunculated, projecting backwards. Labium with segment II shorter than III. Claval commissure usually indistinct. Sutures between terga IV–V and V–VI strongly curved caudad and with distinct scent gland scars.

Geocoris xishaensis sp. nov. (Figs 1, 2)

Description (Fig. 1). Head ochraceous, vertex darker than lateral sides of head; lateral margins of vertex with brown filamentous streaks or not. Antennal segments brownish black except apex of segment IV brown. Pronotum pale yellow, with a large central brownish black spot, reaching anterior angles in some specimens; anterior, lateral and posterior margins broadly yellow. Punctures on pronotal dark spot concolorous with background, and brown on pale area. Scutellum brownish black or only apex slightly brown, almost same colour as other parts, with punctures concolorous with background. Hemelytra pale yellow and shiny, punctures on clavus and corium also yellow. Membrane transparent and colourless. Venter of head ochraceous. Prosternum and propleura light brown; meso- and metasterna, meso- and metaplerua dark brown, with all coxal cavities pale yellow. Ostiolar peritreme of metathoracic scent gland pale yellow. Legs uniformly yellow, except claw complexes blackish brown. Sternites III–VI entirely brown or with blackish brown lateral margins; sternite VII blackish brown. Trichobothria pale yellow.

Structure (Figs 1, 2). Body oval. Head smooth, vertex and clypeus glabrous, mandibular plates with dense and short pubescence. Vertex slightly higher than mandibular plates; furrow present before each ocellus. Pronotum trapeziform, narrower behind eyes than basally. Anterior margin of pronotum slightly arched forward, posterior margin slightly convex, lateral margins of pronotum approximately straight. Pronotum extensively densely punctate except

calli, posterior margin and posterior angles. Corium and clavus translucence; corium with one line of punctures near lateral margin, two lines near inner corial margin; a few punctures scattered between lines of punctures on corium. Clavus with a line of punctures. Hemelytra surpassing apex of abdomen, widest at the level of apex of scutellum. Scutellum sharply pointed apically, densely punctate except trifurcate median carina; lateral margins of scutellum subequal to or longer than anterior margin. Ventral of head glabrous. All pleura finely punctate. Buccula very short. Labium extends to anterior margin of hind coxa.

Male genitalia. Pygophore oval, with posterior margin concave (Fig. 2). Paramere with inner lobe more distinct than outer lobe near base; blade gradually curved with obtuse apex (Figs 2D–G). Aedeagus with wings of ejaculatory reservoir broad, transverse and curved; gonoporal process with about seven tight coils (Figs 2B, 2C).

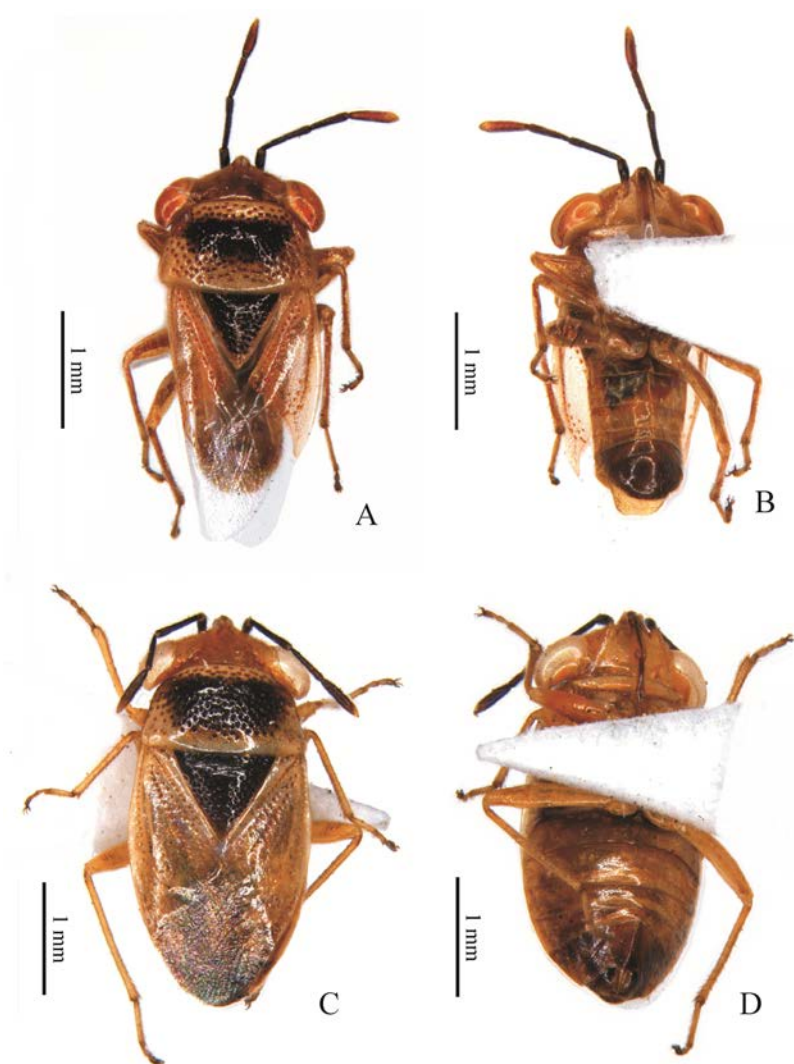


Figure 1. *Geocoris xishaensis* sp. nov. A, B. Holotype, male; C, D. Paratype, female; A, C. Dorsal views; B, D. Ventral views.

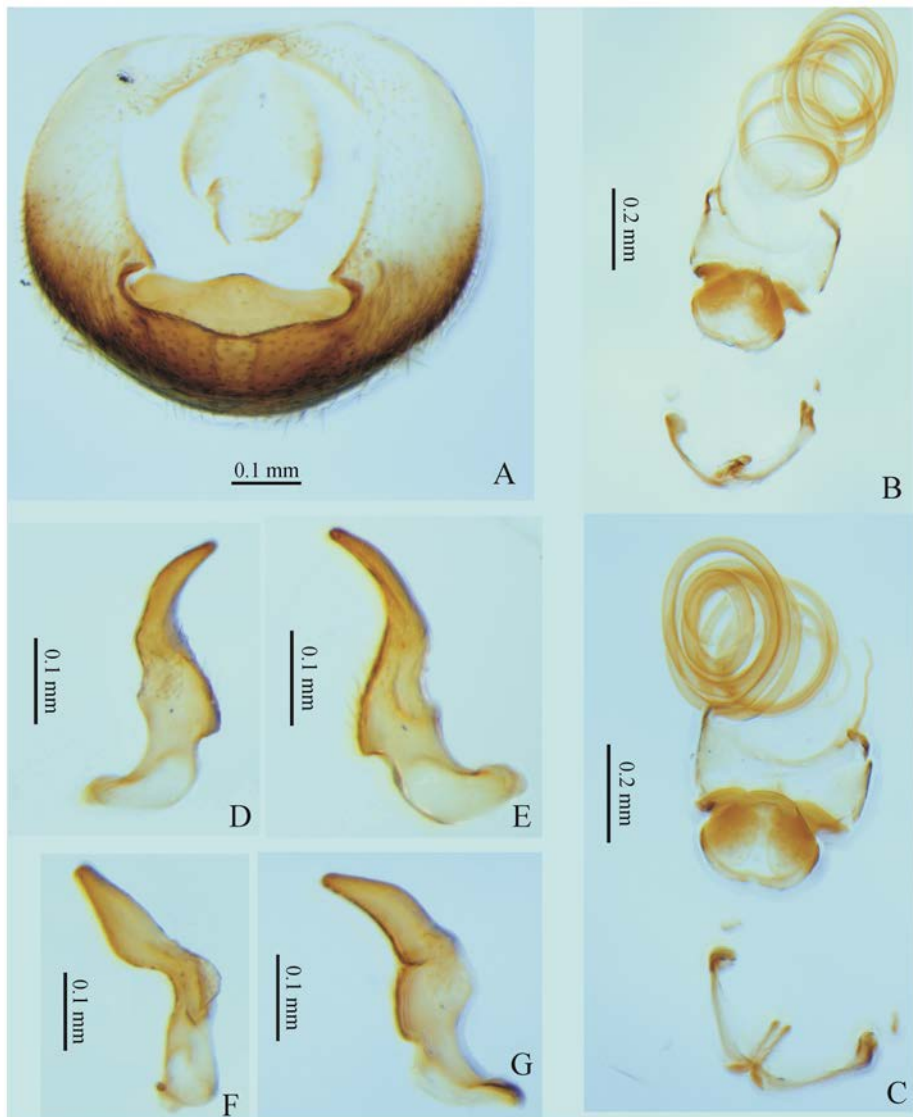


Figure 2. *Geocoris xishaensis* **sp. nov.** genitalia. A. Pygophore, parameres removed, dorsal view; B, C. Aedeagus, dorsal and ventral views; D–G. Left paramere, four different aspects.

Measurements (Male/Female, $n = 1$). Body length including wings 3.45/3.68; maximum width 1.32/1.68. Head: length 0.45/0.55; width across eyes 1.49/1.61; interocular space 0.79/0.81; interocellar space 0.49/0.50; eye ocellar space 0.15/0.19; eye length 0.47/0.55; eye width 0.35/0.40. Length of antennal segments I–IV: 0.23/0.29, 0.47/0.56, 0.37/0.39, 0.44/0.51. Thorax: pronotum, median length 0.82/0.89; width at anterior margin 1.17/1.28; width at posterior margin 1.37/1.50. Scutellum length 0.66/0.79, width 0.69/0.92. Length of hemelytra 2.25/2.30; length of corium 1.49/1.73.

Holotype. ♂, **China**, Hainan Province, Yongxing Island, Xisha District, Sansha City, 23-III-2017, coll. Bo CAI, yellow pan traps (NJFU). **Paratypes.** 2♀, same as holotype,

02-VII-2016, coll. Bo CAI (NJFU); 1♀, same as above, 10-IX-2017, coll. Bo CAI (PQSTP); 1♂1♀, same as above, 08-IX-2019, coll. Bo CAI, Chengli WEN & Yingu WANG (PQSTP); 1♀, same as above, 16–17-X-2018, coll. Wei XV & Rui MENG (PQSTP); 2♀, Liangqin Village, Tianya District, Sanya City, Hainan Province, 23-IV-2020, coll. Bo CAI (NJFU); 1♂1♀, Gangmen Village, Yazhou District, Sanya City, Hainan Province, 19–20-VIII-2020, coll. Bo CAI & Yuchun HAN (PQSTP).

Etymology. The specific epithet is named after Xisha District, Hainan Province, where the species was first discovered.

Diagnosis (Fig. 1). Recognized among congeners of *Geocoris* by a combination of the following characters: Glabrous species. Head nearly unicolorous ochraceous dorsally; antennal segments blackish brown except apex of segment IV brown; pronotum trapeziform, narrower behind eyes than basally, dark, with anterior, lateral and posterior margins pale; hemelytra pale, finely punctate; scutellum almost fully black.

C. xishaensis **sp. nov.** is similar to *C. megacephalus* (Rossi, 1790) in having a large central brown black area on pronotum and black scutellum, but the former head ochraceous and apex of scutellum black or brown (vs. anterior of head pale yellow, posterior of head black and apex of scutellum brown or pale yellow in *C. megacephalus*).

C. xishaensis **sp. nov.** is also similar to *C. arenarius* (Jakovlev, 1867) in having similar colouration of pronotum and pale hemelytra, but differs by head ochraceous, antenna blackish brown and apex of scutellum black or brown (vs. most parts or posterior part of head black, antenna pale yellow except segment II brown and apex of scutellum pale in *C. arenarius*).

C. xishaensis **sp. nov.** is close to *C. caspiriensis* Montandon, 1913 in having four margins of pronotum pale, but head ochraceous, apex of scutellum black or brown and body glabrous (vs. most parts or posterior of head black, apex of scutellum with a pale midline and body with short pubescence in *C. caspiriensis*).

Acknowledgements

We are grateful to Előd KONDOROSY of the University of Pannonia, Hungary, for sharing the type photos and providing valuable comments. This study received financial support from the Natural Science Foundation of the Jiangsu Higher Education Institutions of China (19KJB510009), the Key Research and Development Program of Hainan Province (ZDYF2020081, ZDYF2017056), the Scientific Research Project of Sanya Yazhou Bay Science and Technology City Management Bureau (SKJC-2020-02-015), the Program of Ministry of Science and Technology of the People's Republic of China (2015FY210300), the National Natural Science Foundation of China (31402010), the Highly Educated Talents Foundation in Nanjing Forestry University (G2014002), and the special fund of Bureau of Marine and Fishery of Sansha City.

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