

ISSN 2079-178X

# *Hong Kong Entomological Bulletin*



Volume 8 (1)

DECEMBER 2016



# ***Hong Kong Entomological Bulletin***

Published by the Hong Kong Entomological Society

**Volume 8 (1) December 2016**

## **Contents**

### **Ho Wai-Chun , G.**

A new subspecies of the genus *Neohirasea* Rehn, 1904 (Phasmida: Diapheromeridae: Necrosciinae) from Guangxi, China . . . . .

3-7

**Cover photograph:** *Neohirasea guangdongensis acutus* Ho **subsp. nov.**, female, photo by George Ho Wai-Chun.

**Editors:** George Ho Wai-Chun (georgehwc@hotmail.com); Yiu Vor (yiuvor@hkentsoc.org)

### **Subject editors**

<b>Coleoptera:</b>	Paul Aston (paulaston70@hotmail.com)
<b>Hymenoptera (Aculeata):</b>	Christophe Barthélemy (cbarthelemy@hkentsoc.org)
<b>Lepidoptera:</b>	Roger Kendrick (hkmoths@yahoo.co.uk)
<b>Odonata:</b>	Graham Reels (gtreels@hkentsoc.org)
<b>Phasmida:</b>	George Ho Wai-chun (georgehwc@hotmail.com)

*The Hong Kong Entomological Bulletin publishes papers reporting on all aspects of Insecta in Hong Kong and the wider bioregion, including biology, behaviour, ecology, systematics, taxonomy, genetics and morphology. Papers can be original research results, reviews or short communications. There is no page limit to the manuscripts and no page charge will be applied. At the editors' discretion, an independent review of submitted manuscripts will be sought from an appropriate authority.*

### **Guidelines for authors**

<http://hkentsoc.org/publications/guidelines/content.html>

## A new subspecies of the genus *Neohirasea* Rehn, 1904 (Phasmida: Diapheromeridae: Necrosciinae) from Guangxi, China

George Ho Wai-Chun, Kowloon, Hong Kong. P. O. Box No.73749, Kowloon Central Post Office  
Email: georgehwc@hotmail.com

### ABSTRACT

A new subspecies, *Neohirasea guangdongensis acutus* **subsp. nov.**, from Guangxi, China is described.

**Key words:** Phasmida, *Neohirasea*, new subspecies, Guangxi, China

中國廣西新棘螞屬一新亞種 (螞目: 笛螞科: 長角枝螞亞科)

何維俊  
九龍中央郵政信箱73749號

摘要: 本文記述中國廣西新棘螞屬1新亞種:  
尖粒廣東新棘螞 *Neohirasea guangdongensis*  
*acutus* **subsp. nov.**。

關鍵字: 螞目, 新棘螞屬, 新亞種, 廣西, 中國

### INTRODUCTION

The genus *Neohirasea* Rehn, 1904 consists of ten species and a total of four species are recognised in the Mainland China (Otte and Brock, 2005; Chen and He, 2008; Hennemann et al., 2008; Ho, 2012; Brock et al., 2016). Most of them occur in the southeastern regions including Guangdong, Guangxi, Fujian, Jiangxi, Zhejiang and Hong Kong (Ho, 2012). In Guangxi, only *Neohirasea stephanus* (Redtenbacher, 1908) has been recorded up to now. The present author recently collected several *Neohirasea* specimens during a collecting trip in the southern part of Guangxi and propose describing them as *Neohirasea guangdongensis acutus* **subsp. nov.**

### MATERIALS AND METHOD

Based on a recent molecular work (Bradler et al., 2014), *Neohirasea* is closely related to *Sipyloidea* Brunner von Wattenwyl, 1893 and has been transferred from Lonchodinae Brunner von Wattenwyl, 1893 [Family: Phasmatidae Gary, 1835] to Necrosciinae Brunner von Wattenwyl, 1893 [Family Diapheromeridae Kirby, 1904]. Bradler et al. (2014) suggested the tribe Neohiraseini Hennemann & Conle, 2008 is unnecessary and being synonymised with Necrosciini. This study follows this taxonomic placement.

Illustrations are based on the type material which were dried and pinned after the collecting trip. No food plant eaten by the collected specimens was observed. No egg was collected and further material is necessary

for understanding the relationship with other species. Measurements of adults are given in mm. The type material is deposited in Kadoorie Farm and Botanic Garden, Lam Kam Road, Tai Po, New Territories, Hong Kong (KFBG) and private collection of George Ho Wai-Chun (GH), Hong Kong.

### RESULTS

Genus *Neohirasea* Rehn, 1904

**Type-species:** *Phasma* (*Acanthoderus*) *japonicum* Haan, 1842: 135 (= *Neohirasea japonica*), by original designation.

= *Paracentema* Redtenbacher, 1908 [synonymised by Zompro, 2002: 68]

**Diagnosis:** Small to medium-sized. Dull colouration, usually brown. Body cylindrical, rough, rugose and granulose. Head oblong or oval, unarmed. Thorax rugose, with granules, tubercles and/or spines. Mesonotum usually granulated and elevated with a tuberculate or spinose hump medially. Abdomen rugose and granulated. Seventh sternum with indistinct praeopercular organ in female, usually formed by keel-, tubercle- or granule-like structure. Female subgenital plate scoop-shaped. Male poculum cup-shaped. Supra-anal plate absent. Cerci short and flattened. Legs robust, lacking distinct armature. Anteroventral and posteroventral carinae of femora with or lacking two small spines near apices. Apterous.

**Notes:** Ho (2012) recently provided a revision of Chinese species.

***Neohirasea guangdongensis acutus* subsp. nov.**  
(Figs. 1-8)

**Types:** Holotype, ♂, Xidamingshan Nature Reserve, Guangxi, China, 24-26.V.2011, George Wai-Chun Ho (KFBG); Paratypes, 4♂ & 4♀ (including 1 subadult), same data as holotype (1♀ in KFBG & 4♂ & 3♀ in GH).

**Differentiation:** *Neohirasea guangdongensis acutus* **subsp. nov.** [China (Guangxi)] is similar to *N. guangdongensis guangdongensis* Chen & He, 2008 **sen. str.** [China (Guangdong)] but can be separated by large body size, prominent and pointed small granules on lateral margins of mesonotum and unarmed median segment in male and prominent and pointed small granules on lateral margins of mesonotum and mesopleurae in female.

**Etymology:** The name of this new subspecies is derived

from the feature of the prominently acute granules on the lateral margins of mesonotum in both sexes.

**Description of male (Figs. 1-2, 5, 7):** Medium-sized. Body slender, slimmer than female. General colouration of body and legs brown.

**Head:** Oval, covered with very sparse and minute granules, as long as pronotum. Compound eyes small and rounded. Posterior margin of occiput with six small swellings. Antennae long and filiform, surpassing apices of protarsi; scapus flattened basally, longer than pedicellus; third segment roughly as long as combined length of scapus and pedicellus.

**Thorax:** Pronotum, mesonotum and metanotum covered with a few of small granules. Pronotum rectangular, anterior margin indistinctly incurved, nearly truncate, posterior margin rounded, transverse and longitudinal sulci crossing at middle area; with a pair of spines on anterior margin, apices pointing forwards. Mesonotum gently expanded posteriorly, with paired spines anteriorly, medially, mediolaterally and posteriorly, lateral margins with prominent and pointed small granules. Mesopleurae with small granules, a spine on posterior area and a supra-coxal spine. Metanotum trapezoidal, moderately constricted posteriorly, with a pair of spines posteriorly. Metapleurae with a few of small granules, a mediolateral spine and a supra-coxal spine. Mesosternum and metasternum inconspicuously covered with minute granules.

**Abdomen:** Rugose and sparsely covered with minute granules. Median segment unarmed. Second tergum with a pair of minute spines posteriorly or unarmed. Eighth tergum expanded posteriorly, as long as ninth tergum. Anal segment longer than ninth tergum, longer than wide, with broad V-shaped emargination on posterior margin. Poculum cup-shaped, posterior margin rounded, reaching anterior area of anal segment. Cerci short, flattened, apices rounded and not surpassing posterior margin of anal segment.

**Legs:** Slender and long. Unarmed, sparsely covered with short bristles. Profemora incurved basally. Anteroventral and posteroventral carinae of mesofemora and metafemora with two small spines near apices.

**Male (Figs. 3-4, 6, 8):** Body robust, distinctly larger than female. General colouration of body dark brown.

**Head:** Oval, longer than pronotum. Vertex flat. Occipital furrows distinct. Posterior margin of occiput with eight small swellings. Compound eyes oval and small. Antennae long; scapus longer than pedicellus, roughly as long as third segment.

**Thorax:** Pronotum, mesonotum and metanotum sparsely covered with small granules. Pronotum rectangular, anterior margin incurved, posterior margin rounded, transverse and longitudinal sulci crossing at middle area; anterior margin with a pair of short spine-

like tubercles, apices pointing forwards. Mesonotum longer than combined length of pronotum, metanotum and median segment; middle area elevated with a prominent hump bearing a pair of spine-like tubercles; also with paired anterior, mediolateral and posterior spine-like tubercles; lateral margins with prominent and pointed small granules. Metanotum trapezoidal, constricted posteriorly, posterior area elevated with an indistinct hump bearing a pair of spine-like tubercles. Mesopleurae with prominent and pointed small granules marginally and a short spine-like tubercle near posterior area. Metapleurae with a few of small granules, a short spine-like mediolateral tubercle and a short spine-like supra-coxal tubercle. Mesosternum and metasternum inconspicuously covered with minute granules.

**Abdomen:** Rugose and sparsely covered with minute granules. Seventh sternum with indistinct praeopercular organ formed by two short parallel-sided carinae. Seventh to ninth tergites with a small crest posteromedially. Anal segment as long as ninth tergum, posterior margin with an emargination. Subgenital plate scoop-shaped, tapering posteriorly, apex pointed and reaching posterior margin of anal segment. Cerci small and flattened, apices pointed.

**Legs:** Slender and long. Unarmed, sparsely covered with short bristles. All femora thicker and shorter than corresponding tibiae. Anterodorsal and posterodorsal carinae of mesofemora and metafemora indistinctly waved. Anteroventral and posteroventral carinae of mesofemora and metafemora with two small spines near apices.

**Measurements:** See Table 1.

**Distribution:** Guangxi, China.

## DISCUSSION

In China, four species and two subspecies of *Neohirasea* are recognised and substantially known only from the mainland China. They are namely *N. guangdongensis acutus* **subsp. nov.**, *N. guangdongensis guangdongensis* Chen & He, 2008 **sen. str.**, *N. hongkongensis* Brock & Seow-Choen, 2000, *N. japonica* (Haan, 1842) and *N. stephanus* (Redtenbacher, 1908). No record of *Neohirasea* is previously known from Hainan, which is the largest tropical island in China. *Pseudocentema* Chen, He & Li, 2002 from the island apparently shows close relationship with *Neohirasea* and had been considered a possible synonym of the latter (Hennemann, 2007). In fact, *Neohirasea* can be separated by tuberculate medial hump on mesonotum and indistinct carina-like praeopercular organ on seventh abdominal sternum in female and lacking tuberculate posteromedial elevation on second to seventh abdominal tergites in male. *Pseudocentema*, currently consists of two species, *P. bispinatum* Chen & He, 2002 and *P. liui* Ho, 2013, can only be found in Hainan and *Neohirasea* can only

be found in the southeastern part of the continental China. Both genera have no overlap distribution and can reflect the history of the topographical and sea level movements, and faunal evolution between the continental China and Hainan Island. Furthermore, although there is no record of *Neohirasea* from Yunnan, which is situated at southwestern China, further collecting of specimens in various localities in Yunnan can discover certain populations in the region.

## ACKNOWLEDGMENTS

I wish to deeply thank Mr. Paul Brock (United Kingdom) for giving valuable comments to the improvement of the manuscript; Dr. Chan Pui-Lok, Mr. Lo Yik-Fui, Mr. Wan Pak-Ho, and Miss Carrie Wong (Kadoorie Conservation China, Kadoorie Farm and Botanic Garden, Hong Kong) and staff of Xidaimingshan Nature Reserve, Guangxi, China for their kind assistance; and Kadoorie Farm and Botanic Garden, Hong Kong for financial and logistic support in Guangxi, China.

## REFERENCES

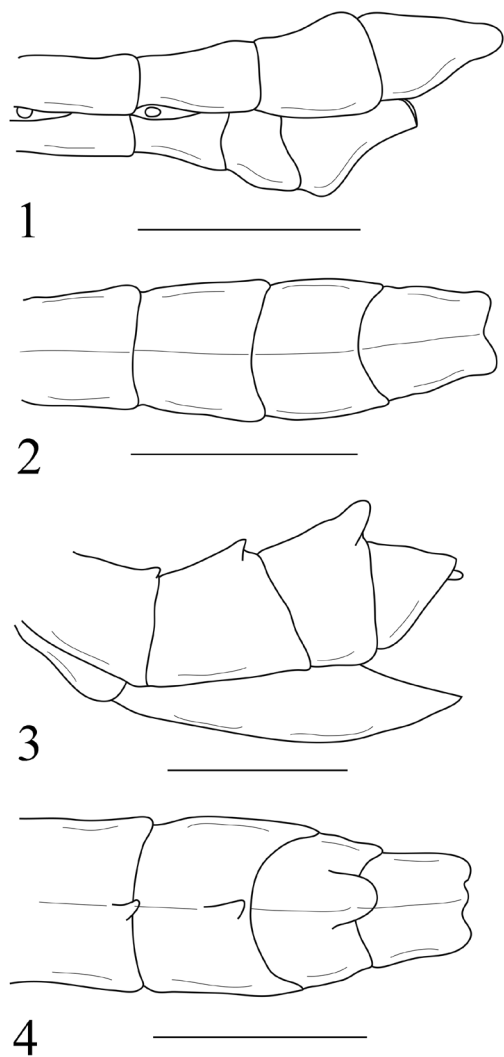
- Bradler, S., Robertson, J.A. and Whiting, M.F., 2014. A molecular phylogeny of Phasmatodea with emphasis on Necrosciinae, the most species-rich subfamily of stick insects. *Systematic Entomology* 39(2): 205-222.
- Brock, P.D., Büscher, T. and Baker, E., 2016. *Phasmida Species File Online. Version 5.0/5.0*. Available from <http://phasmida.speciesfile.org/HomePage/Phasmida/HomePage.aspx> (accessed 28 Oct 2016).
- Brock, P.D. and Seow-Choen, F., 2000. The Stick insects (Insecta: Phasmida) of Hong Kong. *Serangga* 5(1): 113-147.
- Brunner von Wattenwyl, K., 1893. Révision du Système des Orthoptères et description des espèces rapportées par M. Leonardo Fea de Birmanie. *Annali del Museo Civico di storia naturale Giacomo Doria, Genova* (2)13(33): 1-230.
- Chen, S.C. and He, Y.H., 2008. *Phasmatodea of China*. China Forestry Publishing House, Beijing. 476pp.
- Chen, S.C., He, Y.H. and Li, Y., 2002. Phasmatodea. In: *Forest Insects of Hainan* (Huang, F.S., ed.). Science Press, China: 100-116.
- Gray, G.R., 1835. *Synopsis of the species of insects belonging to the family of Phasmidae*. Longman, Rees, Orme, Brown, Green and Longman, London. 48pp.
- Haan, W.de, 1842. Bijdragen tot de Kennis der Orthoptera. In: *Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche Bezittingen, Verhandelingen Zoologie, Vol. 2*. (Temminck, C.J., ed.). Luchtmans and van der Hoek, Leiden: 95-138.
- Hennemann, F.H., 2007. Notes on the genera *Andropromachus* Carl, 1913 and *Spinohirasea* Zompro, 2001. *Phasmid Studies* 15: 15-26.
- Hennemann, F.H. and Conle, O.V., 2008. Revision of Oriental Phasmatodea: The tribe Pharnaciini Günther, 1953, including the description of the world's longest insect, and a survey of the family Phasmatidae Gray, 1835 with keys to the subfamilies and tribes (Phasmatodea: "Anareolatae": Phasmatidae). *Zootaxa* 1906: 1-316.
- Hennemann, F.H., Conle, O.V. and Zhang, W.W., 2008. Catalogue of the Stick and Leaf-insects (Phasmatodea) of China, with a faunistic analysis, review of recent ecological and biological studies and bibliography (Insecta: Orthoptera: Phasmatodea). *Zootaxa* 1735: 1-76.
- Ho, G.W.C., 2012. Taxonomic study of the tribe Neohiraseini Hennemann & Conle, 2008 (Phasmida: Phasmatidae: Lonchodinae) in continental China. *Entomologica Fennica* 23: 215-226.
- Ho, G.W.C., 2013. Contribution to the knowledge of Chinese Phasmatodea I: A review of Neohiraseini (Phasmatodea: Phasmatidae: Lonchodinae) from Hainan Province, China with descriptions of one new genus, five new species and three new subspecies, and redescrptions of *Pseudocentema* Chen, He & Li and *Qionghasma* Chen, He & Li. *Zootaxa* 3620(3): 404-428.
- Kirby, W.F., 1904. *A synonymic catalogue of Orthoptera 1. Orthoptera Euplexoptera, Cursoria et Gressoria. (Forficulidae, Hemimeridae, Blattidae, Mantidae, Phasmidae)*. British Museum, London. 501pp.
- Otte, D. and Brock, P.D., 2005. *Phasmida Species File - Catalog of stick and leaf insects of the world*. The Insect Diversity Association and the Academy of Natural Sciences, Philadelphia. 414pp.
- Redtenbacher, J., 1908. *Die Insektenfamilie der Phasmiden. III. Phasmidae Anareolatae (Phibalosomini, Acrophyllini, Necrosciini)*. Wilhelm Engelmann, Leipzig. 250pp.
- Rehn, J.A.G., 1904. Studies in the orthopterous family Phasmidae. *Proceedings of the Academy of Natural Sciences of Philadelphia* 56: 38-107.
- Zompro, O., 2002. *Spinohirasea crassithorax*, n. gen. n. sp., eine neue Stabschrecke aus Vietnam (Phasmatodea: Phasmatidae: Lonchodinae: Menexenini). *Bonner Zoologische Beiträge* 50: 67-72.

TABLE &amp; FIGURES

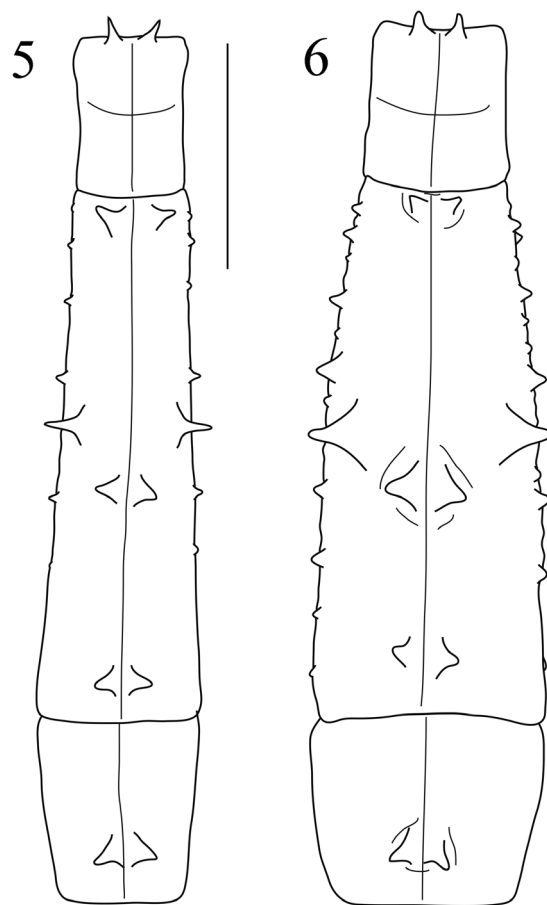
	Holotype male	Paratype males	Paratype females
Body	53	45-53	52-54
Head	3.5	3.5	4.5-5
Antennae	36	33-35	24-25
Pronotum	3.5	3-3.5	4
Mesonotum	12	11-12	11.5-13
Metanotum	4	3.5-4	3.5-4
Median segment	2.5	2.5	2
Profemur	14	13	13-14.5
Mesofemur	11	11-11.5	11-12
Metafemur	17	16-18	16-17.5
Protibia	16	15-16	14-15.5
Mesotibia	13	12.5-13.5	12-13
Metatibia	21	19-22	19-20

**Table 1.** Measurements of *Neohirasea guangdongensis acutus* **subsp. nov.** (mm.)

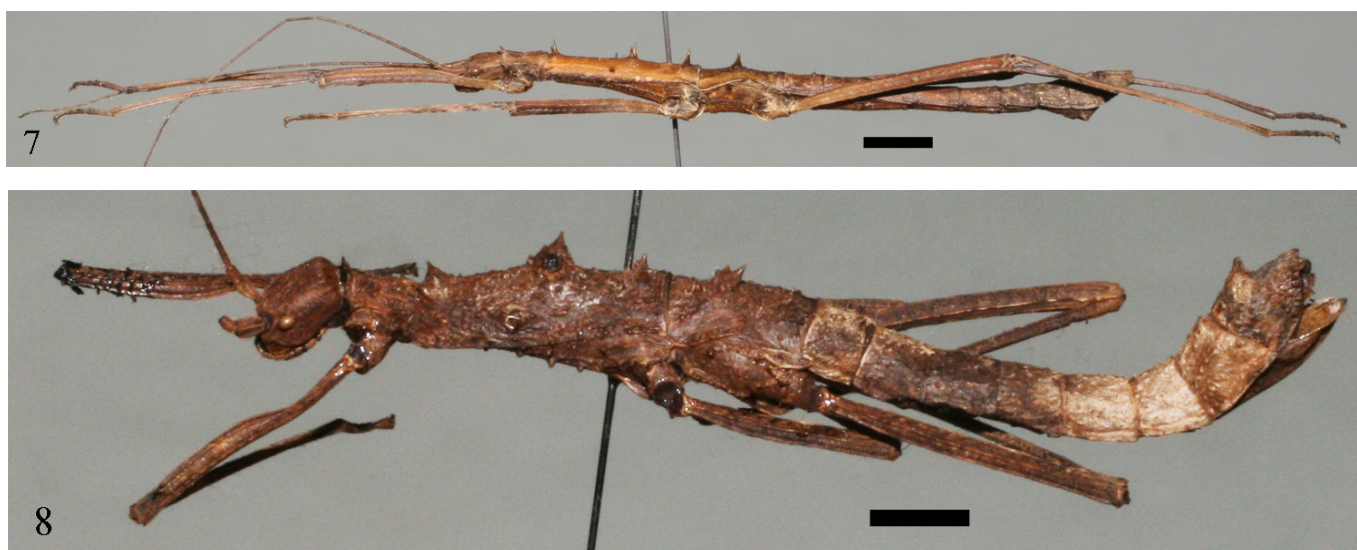




**Figures 1-4.** *Neohirasea guangdongensis acutus* subsp. nov. [scale bar 5 mm] (Drawings by author). 1. Male, end of abdomen, lateral view. 2. Male, end of abdomen, dorsal view. 3. Female, end of abdomen, lateral view. 4. Female, end of abdomen, dorsal view.



**Figures 5-6.** *Neohirasea guangdongensis acutus* subsp. nov. [scale bar 5 mm] (Drawings by author). 5. Male, pronotum, mesonotum and metanotum, dorsal view. 6. Female, pronotum, mesonotum and metanotum, dorsal view.



**Figures 7-8.** Habitus of *Neohirasea guangdongensis acutus* subsp. nov. [scale bar 5 mm] (Photo by author). 7. Male. 8. Female.

