

A New Species of the Genus *Hyarotis* Moore (Lepidoptera: Hesperiidae) from China

FAN Xiao-ling¹, Hydeyuki CHIBA²

(1 College of Resources and Environment, South China Agricultural University, Guangzhou 510642, China;

2 Natural Sciences Department, B. P. Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii, 96817-0916 U. S. A.)

Abstract: A new species of the genus *Hyarotis* Moore, *i. e.* , *H. quinquepunctatus* sp. nov. from Yinggeling of Hainan, China is described and illustrated. The new species is similar to *H. microsticta*, but can be easily distinguished from the latter by the two end-cell spots and uncus of male genitalia with two small processes at distal 1/4 and truncated end.

Key words: Lepidoptera; Hesperiidae; *Hyarotis*; new species

CLC number: Q969

Document code: A

Article ID: 1001-411X (2008)02-0056-02

中国希弄蝶属 *Hyarotis* Moore 一新种 (鳞翅目: 弄蝶科)

范晓凌¹, 千葉秀幸²

(1 华南农业大学 资源环境学院, 广东 广州 510642; 2 美国夏威夷檀香山毕肖普博物馆 96817-0916)

摘要: 描述了中国希弄蝶属 *Hyarotis* Moore 一新种, 即五斑希弄蝶 *H. quinquepunctatus* sp. nov. . 该种以大小不同的 2 个中室斑、雄性外生殖器钩形突端部 1/4 处有 2 个小突起及端部平截而易于与其近似种区别。

关键词: 鳞翅目; 弄蝶科; 希弄蝶属; 新种

The skipper genus *Hyarotis* Moore is a small genus of Hesperiidae, represented by 4 species distributed from India and southern China to Borneo and the Philippines^[1-5], of which only one species, *Hyarotis adrastus* (Stoll, 1782), is widely distributed and has been recorded in China.

In examining the hesperiid materials from Hainan Province, a new species belonging to *Hyarotis* Moore is found and described below.

***Hyarotis quinquepunctatus* sp. nov.**

Scobura sp., Gu & Chen: 327, figs. 537-538^[5].

Holotype: ♂, Yinggeling, Hainan, China, 2005 - V - 18, leg. Min Wang & Liusheng Chen. Para-

types: 1 ♂ 1 ♀, same data as holotype. The type specimens are deposited in the Insect Collection of the South China Agricultural University, Guangzhou.

Description

Male (Fig. 1a, 1b). Forewing length 22 mm, antenna 12 mm.

Antennae dark brown, slightly pale ventrally, shorter than forewing cell, club without white patch before apiculus; palpi second segment erect, ventrally covered with long dense yellow brown scales, third segment short and small.

Wings upperside: ground color dark brown, cilia yellow brown. Forewing with 5 small white spots in

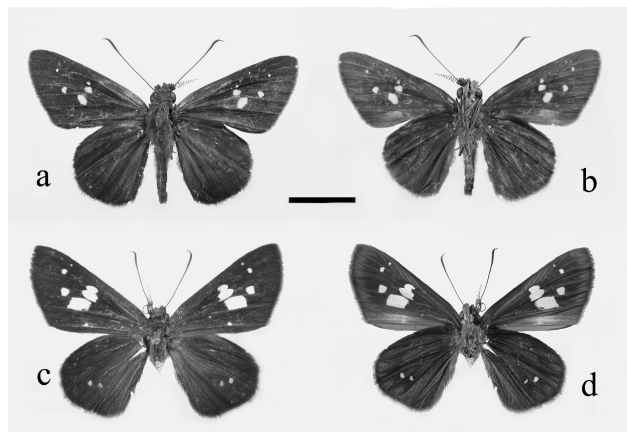
Received date: 2007-12-28

Biography: FAN Xiao-ling (1966—), female, associate professor, doctor, E-mail: fanxiaol66@scau.edu.cn

Foundation item: The study is partially supported by the Grant-in-Aid for Scientific Research Program from the Japan Society for the Promotion of Science (14255016)

cell, space R_5 , M_3 , and Cu_1 , upper cell spot and spot in R_5 only dot-like; cell spots and space Cu_1 in line. Hindwing sometimes with a small blurred white spot in space M_3 .

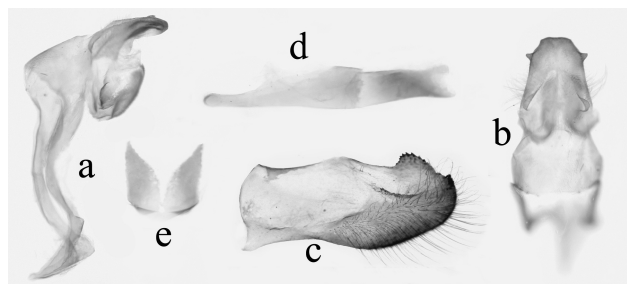
Wing underside: ground color slightly paler, forewing postdiscal area white grey in lower spaces Cu_2 and $1A+2A$. Markings as in upperside. Dorsum without a long tuft of hairs.



a. male adult, upperside; b. male adult, underside; c. female adult, upperside; d. female adult, underside

Fig. 1 *Hyarotis quinquepunctatus* sp. nov. (scale = 10 mm)

Male genitalia (Fig. 2). Uncus very broad, slightly narrower than tegumen, with two pointed small lateral processes at distal $1/4$, from where it is gradually narrowed to its truncated end; socius absent; gnathos well developed, elbow-shaped; saccus broad and short; valva long and broad, the ampullar and harpal processes well defined, the ampullar process with upper margin prominently swelled and armed with small spines, the harpal process with concaved anterior margin and shortly pointed end; aedeagus stout, with subzonal sheath prominently longer than suprazonal sheath; cornutus absent; juxta U-shaped with broad lateral arms, the inner sides of which sharply narrowed to the end.



a. ring, lateral view; b. tegumen, dorsal view; c. valva, inner view; d. aedeagus, lateral view; e. juxta

Fig. 2 Male genitalia of *Hyarotis quinquepunctatus* sp. nov.

Female (Fig 1c, 1d). Forewing length 24 mm, antenna length 12 mm.

Similar to male, but wings somewhat broader, markings much larger than male. Upper and lower end-cell spots conjoined, spot in space Cu_1 rectangular; hindwing with vestigial yellow brown spots in spaces M_3 and Cu_1 .

Female genitalia (Fig. 3): Papillae anales irregular rectangular, sclerotized and covered with hairs; apophyses posteriores slim and long; lamella antevaginalis represented by central digital process; lamella postavaginalis triangular with upper margin deeply concaved; ductus bursae short, membranous; bursa copulatrix elongate, membranous, with longitudinal wrinkles.

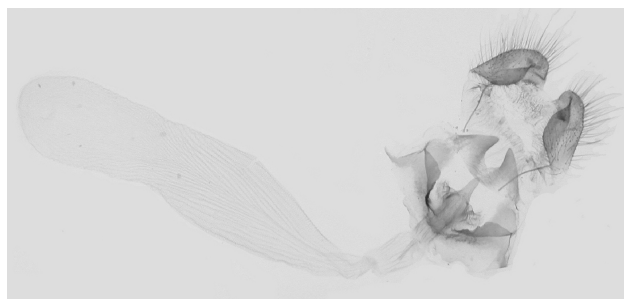
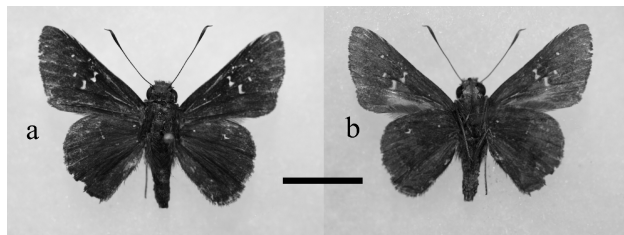


Fig. 3 Female genitalia of *Hyarotis quinquepunctatus* sp. nov.

Remarks

The new species is similar to *H. microsticta* (Wood-Mason & de Nicéville, [1887]) (Figs. 4–5) but can easily be recognized from the latter in having the end-cell spots unequal, male uncus with two small processes at distal $1/4$ and truncated end, and white patch of antennal club absent.

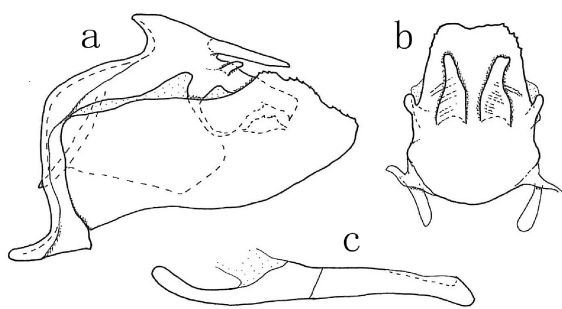


a. male adult, upperside; b. male adult, underside

Fig. 4 *Hyarotis microsticta* (Wood-Mason & de Nicéville, [1887]) (scale = 10 mm)

Etymology

The specific name, *quinquepunctatus* is combined from the Latin words “quinque”, meaning five, and “punctatus”, meaning spots, referring to five spots on its forewing of the new species.



a. male genitalia, lateral view; b. tegumen, dorsal view; c. aedeagus, lateral view

Fig. 5 Male genitalia of *Hyarotis microsticta* (Wood-Mason & de Nicéville, [1887])

Acknowledgments: We would like to thank Mr. Hiroshi Tsukiyama for the loan of specimens and discussion, as well as Dr. Wang Min and Mr. Chen Liusheng for collecting the materials!

References:

- [1] BRIDGES C A. Catalogue of the family-group, genus-group and species-group names of the Hesperioidea (Lepidoptera) of the World: Part IX [M]. Urbana: Charles A, Bridges, 1994:32.
- [2] ELIOT J N. Reviser The butterflies of the Malay Peninsular [M]. 4th edition. Kuala Lumpur: United Selangor Press SDN BHD, 1992:363.
- [3] EVANS W H. A catalogue of the Hesperidae from Europe, Asia & Australia in the British Museum (Natural History) [M]. London: The British Museum, 1949:302-304.
- [4] JONG R de, TREADAWAY C G. The Hesperidae (Lepidoptera) of the Phillipines [J]. Zoologische Verhandlungen, 1993, 288: 40-41.
- [5] BASCOMBE M J, JOHNSON G, BASCOMBE P S. The Butterflies of Hong Kong [M]. London: Academic Press, 1999: 107-109.
- [6] GU M B, CHEN P Z. Butterflies in Hainan Island [M]. Beijing: China Forestry Publishing House, 1998: 327.

【责任编辑 周志红】

(上接第55页)

- [6] MERIVEE E, PLOOMI A, RAHI M, et al. Antennal sensilla of the ground beetle *Bembidion lampros* Hbst (Coleoptera: Carabidae) [J]. Act Zool, 2000, 81: 339-350.
- [7] MERIVEE E, PLOOMI A, RAHI M, et al. Antennal sensilla of the ground beetle *Bembidion properans* Steph. (Coleoptera: Carabidae) [J]. Micron, 2002, 33: 429-440.
- [8] KIM J L, YAMASAKI T. Sensilla of *Carabus (Isiocarabus) fiduciaries saihutoicus* Csiki [J]. Int J Morphol & Embryol, 1996, 25: 153-172.
- [9] DALY P J, RYAN M F. Ultrastructure of antennal sensilla of *Nebria brevicollis* (Fabricius) (Coleoptera: Carabidae) [J]. Int J Morphol & Embryol, 1979, 8: 169-181.
- [10] HALLBERG E, HANSSON B S, STEINBRECHT R A. Morphological characteristics of antennal sensilla in the european cornborer *Ostrinia nubilalis* (Lepidoptera: Pyralidae) [J]. Tissue Cell, 1994, 26: 489-502.
- [11] MERIVEE E, PLOOMI A, LUIK A, et al. Antennal sensilla of the ground beetle *Platynus dorsalis* (Pontoppidan, 1763) (Coleoptera: Carabidae) [J]. Micros Res Tech, 2001, 55: 339-349.
- [12] WAUTIER V. Un phénomène social chez les Coléoptères: le gréganisme de *Brachinus* (Caraboidea: Brachinidae) [J]. Inst Soc, 1971, 18: 1-84.
- [13] DYER L, SEABROOK W D. Sensilla on the antennal flagellum of the Sawyer Beetles *Monochamus notatus* (Drury) and *Monochamus scutellatus* (Say) (Coleoptera: Cerambycidae) [J]. J Morphol, 1975, 146: 513-532.
- [14] FAUCHEUX M J. Morphology and distribution of antennal sensilla in the female and male clothes moth, *Tineola bisselliella* Humm. (Lepidoptera: Tineidae) [J]. Can J Zool, 1984, 63: 355-362.
- [15] BLAND R G. Antennal sensilla of Acrididae (Orthoptera) in relation to subfamily and food preference [J]. Ann Entomol Soc Am, 1989, (82): 368-384.
- [16] ÅGREN L. Architecture of a lamellicorn flagellum (*Phyllopertha horticola*, Scarabaeidae, Coleoptera, Insecta) [J]. J Morphol, 1985(186): 85-94.
- [17] MERIVEE E, VANATOA A, LUIK A, et al. Electrophysiological identification of cold receptors on the antennae of the ground beetle, *Pterostichus aethiops* [J]. Physiol Entomol, 2003, 28: 88-96.
- [18] 嵇宝中. 我国天牛虫害的现状、成因与对策 [J]. 世界林业研究, 2001, 14(4): 50-56.

【责任编辑 周志红】