New Records of Butterflies from China (Lepidoptera: Rhopalocera): One Genus and Four Species

HU Shao-ji1\*, ZHU Jian-qing2*, ZHANG Xin3

1. Laboratory of Biological Invasion and Transboundary Ecosecurity, Yunnan University, Kunming 650091, China;
2. Life and Environment Science College, Shanghai Normal University, Shanghai 200234, China;
3. Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming 650223, China

Abstract: One genus and four species of butterflies were reported for the first time from China, i.e., the genus is Sausa de Nicéville, 1890 (Lycenaediae), Sausa lisides (Hewitson, 1863), the four species are Darpa striata (H. Druce, 1873) (Hesperiiidae), Lethe minerva (Fabricius, 1775) (Nymphalidae), Arhopala dispar Riley et Godfrey, 1921 (Lycaenidae), and Rapala hades (de Nicéville, 1895) (Lycaenidae). Brief descriptions, comparisons with similar species, and some observational notes are given in this paper.

Key words: Lepidoptera; Rhopalocera; new records; China

中国蝴蝶一属四种新纪录（鳞翅目：锤角亚目）

胡劭骥1*，朱建青2*，张鑫3

1. 云南大学生物入侵及跨境生态安全实验室，昆明 650091；2. 上海师范大学生命与环境科学学院，上海 200234；3. 中国科学院昆明动物研究所，昆明 650223

摘要：报道中国蝴蝶新纪录1属4种；新纪录属为索灰蝶属Sausa de Nicéville, 1890；新纪录种为弄蝶科的纹毛弄蝶Darpa striata (H. Druce, 1873)、紫蝶科的纹风眼蝶Lethe minerva (Fabricius, 1775)、灰蝶科的带斑灰蝶Arhopala dispar Riley et Godfrey, 1921和燕灰蝶Rapala hades (de Nicéville, 1895)，并附简要描述对比及野外观察记录。

关键词：鳞翅目；蝶类；新纪录；中国

Butterflies are a remarkable group of insects, interesting amateurs and professionals all over the world. Research on the butterfly fauna occurring to Yunnan of China is still in the early stages, but has benefited greatly from the systematic field surveys by Lee (1962), Chen (2001), Huang (2003), and Huang & Xue (2004).

Several expeditions were made to southern Yunnan from 2009 to 2011 by the authors, where many butterflies new to the fauna of Yunnan were collected (Hu, 2009; Hu & Zhang, 2010). Recently, the specimens collected from the Xishuangbanna Tropical Botanical Garden (XTBG) in Mengla county and other localities were studied, and some species new to Chinese fauna were discovered (Chou, 1994; Lee, 1995; Wang & Fan, 2002). All specimens mentioned in this paper were deposited in private collections of the collectors. Abbreviations are used in text and figures as follows: LF-length of forewing; FW-forewing; HW-hindwing; Up.-upperside; Un.-underside.

1 Hesperiiidae

1.1 Darpa striata (H. Druce, 1873) (Cover 4, Fig. 1, 2)

Diagnosis: Female: LF: 16 mm. Upperside: FW, dark brown with veins paler, two cell spots, six subapical spots with the one in space 8 elongated, and a series of four postdiscal spots with the one in space 2 very obvious and the two in space 1b obscure; HW, ground color as FW, with the discal portion divided by whit-
ened veins, tornal portion white up to vein 5 with dark brown spots at the ends of veins 2, 3, and 4. Underside: FW, as upperside but paler, the spots in space 1b more developed; HW, white, with spaces 6, 7, and 8 dark brown, markings smaller than upperside, a large dark brown cell spot present.

Remark: Genus Darpa Moore, [1866] was first recorded to Chinese fauna by Fan et al. (2003) with a female D. hanria Moore, [1866]. Hitherto, D. striata is the second species of this genus recorded in China. This species extremely resembles D. inopinata Devyatkin, 2001, from which it can be distinguished by these characters: 1) the forewing subapical spots in striata are elongated instead of being dot-like in inopinata, 2) the discal spots in spaces 1b are absent in inopinata, and 3) forewing spots in spaces 4 and 5 are closer to those in spaces 2 and 3 in inopinata (Devyatkin, 2001). This species is also similar to D. pteria (Hewitson, 1868) but can be easily identified by the dark black spots at the end of veins 2, 3, and 4, which are absent in pteria (Osada et al., 1999).

Specimen examined: 1♂, Menglun (21°55.742’N, 101°15.105’E), Mengla County, S. Yunnan, 2010-1-29, coll. ZHANG Xin.

2 Nymphalidae

2.1 Lethe minerva (Fabricius, 1775) (Cover 4, Fig. 3, 4)

Diagnosis: Male: LF: 28 ~ 29 mm. Upperside: FW, dark brown with blackish tinge, especially intense towards the inner margin, blackish androconia on vein 1b; HW, dark brown with intense reddish tinge in the outer half, a series of five black subterminal spots, an oval-shaped blackish androconia in space 2. Underside: FW, buff brown, a grayish median fascia marked with rust red line, an irregularly curved rust red postdiscal line, and a postdiscal fascia formed by a series of four black dots encircled with purplish white in space 3 to 6, termen marked with a fine black line; HW; ground color, median fascia, and postdiscal transverse line as FW, a dusky yellow tinge in the median area, a series of seven subterminal spots formed by a mixture of black and yellow scales encircled with dusky yellow, termen as FW.

Remark: This species is similar to L. mekara (Moore, [1858]) but is distinguished by the following traits: 1) the oval-shaped blackish androconia present in space 2 of the upperside hindwing in minerva, 2) the reddish area on the male upperside hindwing is wider in minerva than in mekara, and 3) the white postdiscal fascia on the female upperside forewing is longer and angulated outwards in minerva while shorter and runs parallel with the termen in mekara (Osada et al., 1999).

Specimens examined: 3♂♂, Menglun (21°55.960’N, 101°15.105’E), Mengla County, S. Yunnan, 2011-1-16, coll. ZHANG Xin.

Bionomics: This species was observed with L. chandica (Moore, [1858]) and L. europa (Fabricius, 1775) in shady bamboo groves of the XTBG in January. The perching behaviors of these three species were different, chandica tended to perch vertically on the bamboo stems situated in the core position of a bamboo bush, while minerva mostly perched on the ground where bare red clay soil presented, the perching habit of europa resembled chandica but always on the bamboo stems located in the outer portion.

3 Lycaenidae

3.1 Arhopala dispar Riley et Godfrey, 1921 (Cover 4, Fig. 5, 6)

Diagnosis: Female: LF: 25 mm. Hindwing tailed. Upperside: FW, pale purplish blue with broad black border, a black transverse mark at end of cell; HW, dark brown with the costal area paler, pale purplish blue from the basal to the median portion, tail black. Underside: FW, Dark brown with purplish tinge, space 1a, 1b, and 2 paler, markings darker and bordered with white; two cell spots, a short fascia at end of cell, a large irregular spot at the base of space 2, a postdiscal fascia consisted of seven oblong spots, an isolated costal spot in space 10, subterminal and terminal spots dark and obscure; HW, ground color as FW with areas near cell and in space 6 irrigated with white scales, markings as FW; five basal spots form a circle on both hindwings, three median spots with the lowest one conspicuously elongated outwardly, an end cell spot, a
prolonged spot at the base of space 2, a postdiscal fascia consisted of six spots between vein 1 and 6 was divided into three segments by veins 2 and 4 with the second part detached outwardly, a hook-shaped postdiscal fascia in the tornal portion stretching up towards the basal spots, subterminal line and terminal spots well developed, three black spots crowned with metallic blue scales in spaces 1a to 2 and in anal lobe.

Remark: This species is similar to A. camdeo (Moore, [1858]), but can be distinguished by the following traits: 1) the underside ground color of camdeo is uniformly light brown and 2) the markings of dispar is larger with the lowest median spot conspicuously elongated outwards (Horsfield & Moore, 1857; Riley & Godfrey, 1921; Evans, 1957).

Specimen examined: 1 ♀, Pu’er (22°43.416’N, 100°58.549’E), S. Yunnan, 2009-IX-11, coll. ZHU Xiaoyu.

3.2 Suasa lisides (Hewitson, 1863) (Cover 4, Fig. 7, 8)

Diagnosis: Female; LF: 14 mm. Two tails on hindwing with the inner one conspicuously long. Upperside: FW, costa, apex, and termen black, basal area brown, median area bright orange; HW, dark brown with costa paler, tornal portion white up to vein 4 with black terminal line runs through, a large black terminal spot in space 3 and a smaller one in anal lobe, a rather faint black mark in space 2, tails white with their basal portion marked with black. Underside: FW, white, the outer half of costa and the entire termen broadly marked with rust red, a short broad postdiscal fascia extending from the costa to vein 3, a long and a short curved rust-red line in space 2 and 3; HW, ground color as FW, a fine blackish line runs through the termen, a large black subapical spot in space 8, dash-line shaped postdiscal and subterminal fasciae above vein 3, three fragments of black lines in space 1a, 1b, and 2, with the second one curved, a large black terminal spot irrigated with blue scales in space 2, a smaller one crowned with blue in anal lobe, tails white.

Remark: This species, along with the genus Suasa de Nicéville, 1890 are officially added to Chinese fauna here. The male S. lisides possesses strong metallic blue scales in the median area on the upperside of both wings, a round black androconia also present near the costa on the upperside of HW, and an extra large black spot at the same place of the androconia on the underside of HW (Osada et al., 1999).

Specimen examined: 1 ♀, Menglun (21°55.760’N, 101°15.424’E), Mengla county, S. Yunnan, 2011-I-16, coll. ZHANG Xin.

Bionomics: The only female in this study was observed and captured on a leaf of an unidentified bush near the edge of a forest in the XTBG, the flight pattern resembles Zeltus amasa (Hewitson, [1865]).

3.3 Rapala hades (de Nicéville, 1895) (Cover 4, Fig. 9, 10)

Diagnosis: Female; LF: 17 mm. Hindwing tailless. Upperside: FW, brown with median area obscurely irrigated with rust red; HW, pure brown. Underside: FW, pale buff brown, a faintly marked end cell fascia, a darker postdiscal fascia marked with whitish line, subterminal spots extremely obscure; HW, ground color, end cell fascia as FW, postdiscal fascia well developed and irrigated with orange tinge in the lower segment which angulated into a “W” pattern in tornal portion, a series darker terminal spots crowned by crescents diminish towards apex, the terminal spot in space 2 is marked with a black dot and strongly crowned by a yellow crescent, a smaller black spot in anal lobe with a fine orange line which runs along the tornal margin and joins the posdiscal fascia above, the terminal spot in space 1b is a mixture of black and white scales.

Remark: The female R. hades is readily differentiated from the known Rapala species from China by its tailless hindwing, and its unique subterminal crescents. The male R. hades possesses a tail like other Rapala species and the median areas of the upperside of both wings are bright reddish, but features of the underside of both wings are exactly the same as the specimen examined in this study (de Niceville, 1895).


4 Acknowledgements

We are grateful to Mr. Zhu Xiaoyu from Shanghai who
kindly provided us the valuable material of Arhopala dispar. The authors must also express their thanks to Prof. Li Qingjun, the deputy director of the XTBG, for allowing us to collect in the garden, and Mr. Chen Dedao, a graduate student from School of Life Sciences, Yunnan University, for assisting our field work. And Dr. Rod Eastwood from the Museum of Comparative Zoology, Harvard University helped us improve the text. This research was supported by the Open Funds of the Key Laboratory of International River and Transboundary Ecospheric, Yunnan Province.

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Fig. 1. (Up.), 2. (Un.): Darpa striata, ♀, from Menglun, Mengla County; 3. (Up.), 4. (Un.): Lethe minerva, ♂, from Menglun, Mengla County; 5. (Up.), 6. (Un.): Arhopala dispar, ♀, from Pu'er County; 7. (Up.), 8. (Un.): Suasa lisides, ♀, from Menglun, Mengla County; 9. (Up.), 10. (Un.): Rapala hades, ♀, from Menglun, Mengla County.