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STUDY ON THE TRIBE CHALINGINI MORISHITA, 1996 (LEPIDOPTERA, NYMPHALIDAE, LIMENITINAE)

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The small tribe Chalingini Morishita, 1996 (Nymphalidae, Limenitinae) is studied in this paper. Three new synonyms are proposed: *Chalinga* Moore, 1898 = *Seokia* Sibatani, 1943, **syn. n.**, = *Eolimenitis* Kurentzov, 1950, **syn. n.**, = *Ussuriensia* Nekrutenko, 1960, **syn. n.** *Seokia pratti* (Leech, 1890) is transferred to the genus *Chalinga* as a new combination: *Ch. pratti* (Leech), **comb. n.** Tribal position of the genera *Auzakia* Moore, 1898 and *Bhagadatta* Moore, 1898 from Oriental region and the genus *Hamanumida* Hübner, 1819 sensu lato from Afrotropical region is discussed.

KEY WORDS: Nymphalidae, Limenitinae, Chalingini, new synonym, new combination, *Chalinga*, *Seokia*, *Eolimenitis*, *Ussuriensia*.

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Статья посвящена небольшой трибе Chalingini Morishita, 1996 (Nymphalidae, Limenitinae). Три названия сведены в синонимы: *Chalinga* Moore, 1898 = *Seokia* Sibatani, 1943, **syn. n.**, = *Eolimenitis* Kurentzov, 1950 **syn. n.**, = *Ussuriensia* Nekrutenko, 1960, **syn. n.** Вид *Seokia pratti* (Leech, 1890) перенесен в род *Chalinga*, в силу чего предложена новая комбинация: *Ch. pratti* (Leech), **comb. n.** Обсуж-

дается принадлежность к той или иной трибе ориентальных родов *Auzakia* Moore, 1898 и *Bhagadatta* Moore, 1898, а также афротропического рода *Hamanumida* Hübner, 1819 sensu lato.

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INTRODUCTION

For a long time *Chalinga* Moore, 1898 with species *Chalinga elwesi* (Oberthür, 1883) and *Seokia* Sibatani, 1943 (= *Eolimenitis* Kurentzov, 1950; *Ussuriensia* Nekrutenko, 1960) with species *Seokia pratti* (Leech, 1890) did not considered as related taxa. Chermock (1950) revised the tribe Limenitini on the generic level. However, the tribe Limenitini in Chermock's work is equivalent to the subfamily Limenitinae in current system of Nymphalidae (Ackery, 1984; de Jong et al., 1996; Ackery et al., 1999; Freitas & Brown, 2004). Judging from the unique structure of *Chalinga elwesi*, Chermock (1950) pointed out that it had been impossible to associate *Ch. elwesi* with any of the known tribes of Nymphalinae (equivalent to subfamilies Limenitinae, Heliconiinae and Nymphalinae in the current treatment). Basing upon the study of male genitalia, Morishita (1996) first mentioned the similarity between the two genera *Chalinga* and *Seokia*, and established the tribe Chalingini (Nymphalidae, Limenitinae) for these two monotypic genera. Ignoring those foundational and particular diagnostic characters of the tribe, Chou (1998) mistakenly added other two unrelated monotypical genera of Limenitinae, *Auzakia* Moore, 1898 and *Bhagadatta* Moore, 1898, in Chalingini. Recently, Wahlberg (www.nymphalidae.net/Classification/Higher_class.htm) worked out a system of Limenitinae in his higher classification of Nymphalidae. In this system of Limenitinae mentioned above, there is no status for Chalingini, meanwhile, *Chalinga* and *Eolimenitis* are listed as synonyms of *Limenitis* Fabricius, 1807, and *Seokia* is a synonym of *Neptis* Fabricius, 1807. It should be mentioned that Chalingini has some unique diagnostic characters of male genitalia, and this taxon could to play an important role for understanding the evolution and phylogeny of Limenitinae.

In this study, features of female genitalia of *Chalinga* and *Seokia* have been added. Structures of both the male and female genitalia of *Chalinga* and *Seokia* reveal their highly close relationship. Taking into account this factor, the author can make the conclusion that *Chalinga* and *Seokia* are congeneric. According to nomenclature and priority, *Seokia* and its junior synonyms *Eolimenitis* and *Ussuriensia* are all new junior synonyms of *Chalinga*. At the same time, the status of Chalingini in Limenitinae is enhanced again. At last, the possible close relationship between Chalingini and tropical African limenitid genus *Hamanumida* Hübner, 1819 sensu lato (Chermock, 1950) is discussed. Materials in this study are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS).

TAXONOMY

Tribe Chalingini Morishita, 1996

Chalingini Morishita, 1996, Butterflies 13: 41. Type genus: *Chalinga* Moore, 1898.

Genus *Chalinga* Moore, 1898

Chalinga Moore, 1898, Lep. ind. 3: 146. Type species: *Limenitis elwesi* Oberthür, 1883.

Seokia Sibatani, 1943, Trans. Kansai ent. Soc. 13(2): 21, **syn. n.** Type species: *Limenitis pratti* Leech, 1890.

Eolimenitis Kurentzov, 1950, Byull. mosk. Obshch. Isp. Prir. (Ser. boil.) 55: 37, **syn. n.** Type species: *Limenitis eximia* Moltrecht, 1909.

Ussuriensia Nekrutenko, 1960, Zool. Anz. Leipzig 165: 438, **syn. n.** Type species: *Ussuriensia jeftremovi* Nekrutenko, 1960.

DESCRIPTION. Medium-sized. Body robust. Antenna with its tip clubbed. Compound eyes naked or hairy. Labial palpus with its terminal segment tiny. Wing shape: Forewing triangular. Hindwing oval. Venation: Forewing: Vein 11 arising before the end of the cell; vein 7 anastomosed to vein 10; cell closed. Hindwing: humeral vein curved outwards with a right-angle, it arising at the point of separation of veins 7 and 8; cell closed. Wing pattern: Variable in colour and maculation. Forewing: two light bands present in cell (Figs 7, 8: a); postdiscal bands divided into three short sections, and the three parts oblique and nearly parallel with each other (Figs 7, 8: b). Hindwing: Three darkish spots present in middle cell (Figs 7, 8: c); discal band extending from costa to dorsum.

MALE GENITALIA. Tegumen short in length. Uncus long and strongly bifurcate to the base. Gnathos reduced. Juxta simple, shield-shaped, with its lower part acute. Vinculum broad. Saccus tubiform. Valva simple, its surface unornamented. Aedeagus straight and long; cornuti of the vesica present as two rows of sclerotized spines.

FEMALE GENITALIA. Ostium bursae small, located in a shallow pouch on middle 8th sternum; margin of the pouch on the sternum forming an oblong sclerotized ring, and the ring semicircularly protruding at its middle posterior edge. Ductus bursae wide, coriaceous or membranous. Corpus bursae with signum weakly present or absent.

DISTRIBUTION. Continental E Asia, from SW China northeastwards to Ussuri and Korea.

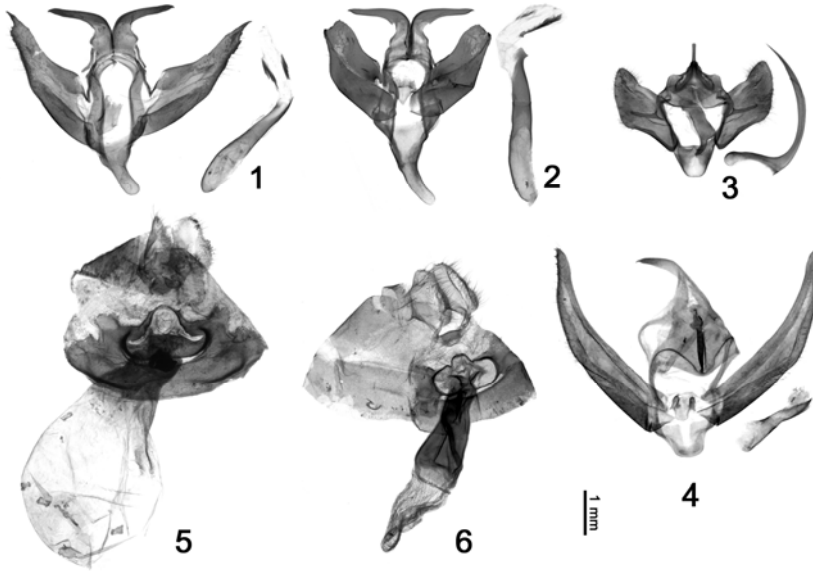
Chalinga elwesi (Oberthür, 1883)

Figs 1, 5, 7.

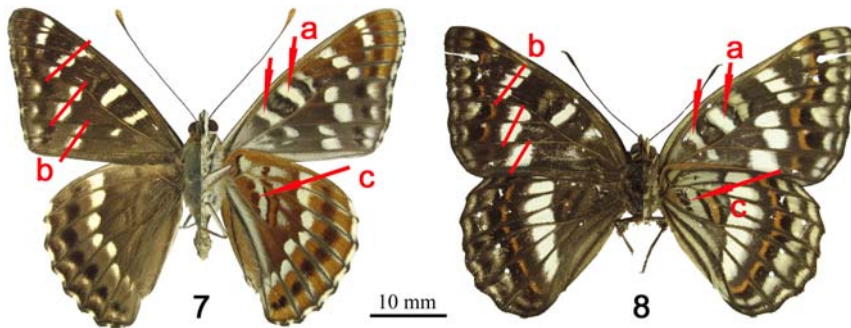
Limenitis elwesi Oberthür, 1883, Bull. Soc. ent. Fr. 1883: 128 (type locality: Tseku); Leech, 1892, Butt. China 1: 179; Stichel, 1909, in Seitz, Macrolepid. World 1: 183, pl. 57: d; D'Abbrera, 1993, Butt. Hol. Region 3: 342.

Chalinga elwesi: Moore, 1898, Lep. ind. 3: 173; Chou, 1994, Monograph. Rhop. Sin. 2: 529; Morishita, 1996, Butterflies 13: 39, figs. 10-12.

HEAD. Antenna long, about three quarters the length of forewing. Compound eyes naked.



Figs 1-4. Male genitalia. 1) *Chalinga elwesi* (Oberthür) from Xishuangbanna, Yunnan; 2) *Ch. pratti* (Leech) from Ningshan, Shaanxi; 3) *Bhagadatta austenia* (Moore) from Jinxiu, Guangxi; 4) *Auzakia danava* (Moore) from Medog, SE. Tibet. Figs. 5-6. Female genitalia. 5) *Chalinga elwesi* (Oberthür) from Anning, Yunnan; 6) *Ch. pratti* (Leech) from Pingding, Shanxi.



Figs 7-8. Adults. 7) *Chalinga elwesi* (Oberthür), ♂ (Miyi, S. Sichuan), dorsal (left), ventral (right); 8) *Ch. pratti* (Leech), ♀ (Pingding, Shanxi), dorsal (left), ventral (right).

MALE GENITALIA. Gnathos shorter. Valva narrowing outwards; distal half bent upwards; apex sharply pointed; distal third of ventral margin serrated. Aedeagus with its apex acute and unornamented; two rows of cornuti equally developed.

FEMALE GENITALIA. Ductus bursae membranous, very short, but wide. Signa weakly present as a pair of small scobinate bands on corpus bursae.

MATERIAL. CHINA, Sichuan: Miyi, 2000 m, 30.VI 1982, 2 ♂; Yunnan: Deqin, 2030 m, 13.V 1979, 2 ♂; Yunnan: Anning, 1900 m, 3.VI 1980, 1 ♀; Yunnan: E'shan, 1500 m, 16.X 1982, 1 ♂; Yunnan: Longling, 1450 m, 21.VI 1956, 1 ♂; Yunnan: Lincang, 1130 m, 24.VI 1980, 1 ♂; Yunnan: Lanping, 2600 m, 2.VII 1979, 1 ♂; Yunnan: Shiping, 800 m, 7.VII 1979, 1 ♂; Yunnan: Yongde, 1600 m, 28.VI 1980, 1 ♂; Yunnan: Menghai, 18.IV 1982, 1 ♂.

DISTRIBUTION. China (SW Sichuan, NW Yunnan, E Tibet).

***Chalinga pratti* (Leech, 1890), comb. n.**

Figs 2, 6, 8.

Limenitis pratti Leech, 1890, Entomologist 23: 34 (type locality: Changyang); Leech, 1892, Butt. China 1: 187, pl. 16: 7; Stichel, 1909, in Seitz, Macrolepid. World 1: 183, pl. 56: d; D'Abbrera, 1993, Butt. Hol. Region 3: 342.

Najas prattii: Moore, 1898, Lep. ind. 3: 172.

Limenitis eximia Moltrecht, 1909, Ent. Z., Frankf. a. M. 22: 184 (type locality: Amur), **syn. n.**

Limenitis pratti coreana Matsumura, 1927, Ins. Matsum. 1: 165 (type locality: Korea); Sugitani, 1936, Zephyrus 6 (3/4): 172, pl. 9: 13, 14.

Seokia pratti: Sibatani, 1943, Trans. Kansai ent. Soc. 13(2): 21; Chou, 1994, Monograph. Rhop. Sin. 2: 529; Morishita, 1996, Butterflies 13: 35, figs. 3-5; Murzin, 2000, In: Tuzov et al., Guide butt. Russia 2: 20.

Eolimenitis eximia: Kurentzov, 1950, Byull. mosk. Obshch. Isp. Prir. (Ser. biol.) 55: 37.

Ussuriensia jefremovi Nekrutenko, 1960, Zool. Anz. Leipzig 165: 438, figs. 1-5 (type locality: Ussuri), **syn. n.**

HEAD. Antenna about half the length of forewing. Compound eyes hairy.

MALE GENITALIA. Gnathos longer. Distal half of valva bent upwards; apex cut off. Aedeagus with a small cone-shaped projection attached on its dorsal surface caudally; one row of cornuti weak with spines slender, another row developed with spines thick.

FEMALE GENITALIA. Ductus bursae coriaceous, longer and robust built. Signum absent.

MATERIAL. CHINA, Shanxi: Pingding, 1 ♀; Shaanxi: Ningshan, 1580-1650 m, 26-30.VI 1999, 3 ♂; Shaanxi: Liuba, 1500-1650 m, 22.VII 1998, 1 ♀; Gansu: Yongdeng, 2280 m, VII 1991, 1 ♀.

DISTRIBUTION. China (Jilin, Shanxi, Shaanxi, Gansu, Zhejiang, Hubei, Guangxi, Sichuan); Korea, Russia (Ussuri).

DISCUSSION

Omelko & Omelko (1978), and Harada & Ichikawa (1999) reported the early stages of *Chalinga pratti*. The features of its early stages confirm that Chalingini belongs to Limenitinae, though the early stages of *Ch. elwesi* are still unknown. Uncommonly, the larva of *Ch. pratti* feeds on needle leaves of *Pinus* spp., but generally angiosperm plants serve as the food plants of most nymphalid larvae.

Chou (1998) treated two monotypical genera, *Auzakia* and *Bhagadatta*, as members of Chalingini. However, the male genitalia features of *Auzakia danava* (Moore, 1857) (Fig. 4) and *Bhagadatta austenia* (Moore, 1872) (Fig. 3) are quite different from those of Chalingini. Judging from features of genitalia, *Auzakia danava* should belong to Adoliadini Doubleday, 1845. The position of *Bhagadatta austenia* in Limenitinae is hardly to be deduced, because of its unique genitalia in this subfamily. Maybe *B. austenia* deserves a new tribe.

Chermock (1950) in his revision of Limenitini treated several distinct tropical African genera accepted by many authors as one genus, *Hamanumida* Hübner, 1819 sensu lato. In his work, Chermock pointed out that although the male genitalia vary with the species, two structures are diagnostic of *Hamanumida* sensu lato, namely the strongly bifurcate uncus and the reduced gnathos. *Hamanumida* sensu lato includes following genera: *Hamanumida* sensu stricto (= *Canopus* Felder 1861, *Leucotricha* Rothschild & Jordan 1903, *Metacrenis* Butler 1895), *Aterica* Boisduval 1833, *Pseudargynnus* Karsch 1892, *Cynandra* Schatz 1887, *Euryphura* Staudinger 1891 (= *Crenidomimas* Karsch 1894) and *Diestogyna* Karsch 1893. In Wahlberg's higher classification of Limenitinae, all these genera mentioned above belong to Adoliadini. Actually, the features of male genitalia of *Hamanumida* sensu lato are quite different from those of true Adoliadini, but are more closely related to those of Chalingini. Though they have quite different superficial characters, Chalingini from eastern Asia and *Hamanumida* sensu lato from tropical Africa can be distinguished from other taxa of Limenitinae by their unique characters of male genitalia, the bifurcate uncus and the reduced gnathos. Hence, I deduce that *Hamanumida* sensu lato should be a member of Chalingini.

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