

Study on some nymphalid butterflies from China

(Lepidoptera, Nymphalidae)

by

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Abstract: 4 new subspecies of nymphalid butterflies from China (Tibet, Qinghai and Hainan) are described and illustrated, on the basis of material deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS): *Fabriciana adippe milina* LANG **subspec. nov.**, *Mesoacidalia clara menba* LANG **subspec. nov.**, *M. clara tongtianensis* LANG **subspec. nov.** and *Euthalia hoa isolata* LANG **subspec. nov.** *Mesoacidalia clara neoclara* CHOU, YUAN, YIN, ZHANG et CHEN, 2002 **syn. nov.** is found to be a new synonym of *M. clara clarina* (STAUDINGER, 1901). *Symbrenthia silana* DE NICÉVILLE, 1885 is recorded from China for the first time. *Euthalia anosia recta* MIYATA et HANAFUSA, 1989 is a secondary homonym of *Euthalia recta* (DE NICÉVILLE, 1886). *Euthalia anosia yao* YOSHINO, 1997 **stat. nov.** is raised to species status and its ♂ is formally described here for the first time.

All type specimens in this study are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS).

Abbreviations: FW - forewing; HW - hindwing; TL - type locality.

Fabriciana adippe milina LANG **subspec. nov.** (colour plate 7: 1, 2)

Holotype ♂: Tibet: Milin County, Namula Pass, 3800 m, 23.VII.1983, coll. HAN YINHENG (IZCAS). Paratypes: 1 ♂, data same as holotype (IZCAS); 1 ♂, Tibet: Linzhi County, 3800 m, 24.VIII.1983, coll. HAN YINHENG (IZCAS).

Description ♂: FW length (base to apex): 32-35 mm. Wing pattern: Dorsal surface with ground colour and black marks as in *F. a. taliana* (REUSS, 1922) from Yunnan and *F. a. ornatissima* (LEECH, 1892) from Sichuan; FW with two strong brands respectively on veins 2 and 3, brand on vein 3 short and about one half the length of brand on vein 2. Ventral surface with light ground colour; HW basal half light yellowish green; silver spots on basal half, discal and submarginal area of HW with their black edging weakly expressed, submarginal crescent silver spots partly replaced by the ground colour.

Diagnosis: The new subspecies can be easily distinguished from previously known subspecies of *F. adippe* (ROTTEMBERG, 1775) from adjacent areas by the following combination of characters:

1. The ♂ brand on vein 3 of dorsal FW is distinctly shorter than in other subspecies, except *F. a. chayuensis* HUANG, 2001 from nearby Chayu, SE. Tibet whose brand on vein 3 is almost absent.
2. Ventral surface is more similar to *F. a. vorax* (BUTLER, 1871) from NE. and E. China: Colour is light; basal half of HW is yellowish green, whereas in *F. a. taliana* (REUSS) and *F. a. chayuensis* HUANG they are strongly brownish coloured; black edges of silver spots on HW are weak and indistinct, whereas they are always distinct in *F. a. taliana* (REUSS), *F. a. ornatissima* (LEECH) and *F. a. chayuensis* HUANG.

The new subspecies also can be easily distinguished from the sympatric taxon *F. xipe gyala* (TYTLER, 1940) by its ♂ brand on vein 3 of dorsal FW, whereas this brand is completely absent in *F. xipe gyala* (TYTLER).

Etymology: The subspecific name *milina* is after the TL, Milin.

Mesoacidalia clara menba LANG **subspec. nov.** (colour plate 7: 3, 4)

Holotype ♂: Tibet, Milin County, Namula Pass, 3800 m, 28.VII.1983, coll. HAN YINHENG (IZCAS). Paratypes: 91 ♂♂, 34 ♀♀, Tibet, Milin to Motuo, Namula Pass, 3000-3800 m, 28.VII.-8.VIII.1983, coll. HAN YINHENG (IZCAS); 1 ♂, 1 ♀, Tibet, Milin County, Pai, 2800 m, 28.VIII.1983, coll. HAN YINHENG (IZCAS); 1 ♂, 1 ♀, Tibet, Bomi County, 2700 m, 3.IX.1983, coll. HAN YINHENG (IZCAS).

Mesoacidalia clara (BLANCHARD, 1844) is an alpine species which is distributed along the southern and eastern fringes of the Qinghai-Tibet Plateau. Until now, 3 subspecies are known; they are *M. c. clara* BLANCHARD, 1844 from Kashmir and NW. India, *M. c. manis* (FRUHSTORFER, 1903) (= *claudia* (FAWCETT, 1904)) from Sikkim and adjacent S. Tibet (Yadong, Gangba) and *M. clara clarina* (STAUDINGER, 1901) (= *M. clara neoclara* CHOU, YUAN, YIN, ZHANG et CHEN, 2002: 53, figs. 10a-d. TL: Gansu, **syn. nov.**) from E. Qinghai, SW. Gansu, W. Sichuan and E. Tibet. CHOU et al. (2002) described *M. c. neoclara* CHOU et al. from the TL area of *M. c. clarina* (STGR.), therefore *M. clara neoclara* CHOU et al. is apparently a junior synonym of *M. c. clarina* (STGR.). The geographic subspecies of W. Sichuan (Kangding, Batang) and E. Tibet (Basu) is somewhat different from typical *M. c. clarina* (STGR.) from E. Qinghai and SW. Gansu, but it is still provisionally designated as *M. c. clarina* (STGR.) in this paper. Two other quite distinct geographic subspecies from Namjagbarwa Region of SE. Tibet and Tongtian River basin of Central Qinghai are described here as new.

Description ♂: FW length: 23-26 mm. Wing shape: FW apex round. Wing pattern: Dorsal surface with ground colour orange yellow; HW postdiscal spots weak, incomplete, only represented in spaces 2, 3, 5 and 6, with the spot in space 6 almost always absent. Ventral surface with a light ground colour; silver spots and stripes without any black edging; HW ground colour light yellowish green.

♀, FW length: 25-26 mm. The same as in ♂.

Diagnosis: The new subspecies can be distinguished from all previously known subspecies *M. c. clara* BLANCH. by the following combination of characters:

1. Postdiscal spots of dorsal HW are extremely weak and incomplete, whereas in other subspecies they are distinct and always complete from spaces 2 to 6.
2. Dorsal surface ground colour of ♀ is same as in ♂, whereas in the *M. c. clara* BLANCH., it is almost entirely overlaid with dark bronzy greenish or grey scales, or these bronzy scales are restricted to the basal areas, and the outer areas are either greyish black or deep greyish purple.
3. FW apex of ♂ is round, whereas in *M. c. clara* BLANCH. it is somewhat acute.
4. Silver spots of ventral surface are without any black edging which are present in other subspecies.
5. It is medium in size, whereas *M. c. manis* (FRUHST.) is small.

Etymology: The new subspecific name *menba* is named after the Menba which are a primitive tribe from Motuo County of SE. Tibet. Living on the south slope of the Namjagbarwa Region

for generations, the Menba people can only reach the inland part of Tibet by crossing several alpine passes of the great Himalayas with average altitude more than 4500 m during summer.

Mesoacidalia clara tongtianensis LANG **subspec. nov.** (colour plate 7: 5, 6)

Holotype ♂: Qinghai, Qumalai County, Chuhuier River, 4500 m, 19.VII.2001, coll. Zhang Yanzhou (IZCAS). Paratypes, 5 males, data same as holotype (IZCAS).

Description ♂: FW length: 18-21 mm. Wing shape: FW apex round. Wing pattern: Dorsal surface with ground colour orange yellow; HW postdiscal spots large, but spot in space 4 tiny or absent. Ventral surface with ground colour dark with additional black scales; silver spots weak and mostly replaced by ground colour on FW and on discal and submarginal areas of HW; submarginal yellowish spots of HW oval and circled by thick blackish edging.

Diagnosis: The new subspecies can be easily distinguished from the others by the following combination of characters:

1. It is small in size, as in *M. c. manis* (FRUHST.), whereas other subspecies are larger.
2. Silver marks of ventral surface are almost entirely replaced by ground colour on distal half of wings, whereas they are well developed and distinct in other subspecies.
3. Submarginal spots of ventral HW are yellowish and oval, whereas in other subspecies they are silver and triangular.

Etymology: The new subspecific name *tongtianensis* is named after the TL, the basin of Tongtian River which is the upper water of the Yangtse River.

Symbrenthia silana DE NICÉVILLE, 1885 (colour plate 7: 7-10)

First record from China (SE. Tibet and Hainan Island).

Material: 1 ♂, Hainan: Mt. Bawangling, Dongyi Linchang, 800-1000 m, 9.IV.2008, coll. LANG SONGYUN (IZCAS); 5 ♂♂, Tibet: Motuo County, Xigong Lake, 1450 m, 10.V.1983, colls. HAN YINHENG and LIN ZAI (IZCAS).

Symbrenthia silana DE NICÉVILLE, 1885 has been previously only known from the southern slope of E. Himalayas (Sikkim, Bhutan and Assam). Motuo of SE. Tibet also belongs to the southern slope of E. Himalayas, so recording this species from this area is not surprising. Hainan Island is far from the previously known distributional range of *S. silana* DE NICÉVILLE therefore the discovery of the insular population of this species is a new contribution to the knowledge of butterfly fauna of the Oriental Region.

HUANG (2000) established the genus *Brensymthia* for *Symbrenthia niphanda* MOORE, 1872 (genotype of *Brensymthia*) from Himalayas, *S. sinoides* HALL, 1935 from W. Sichuan and *S. silana* DE NICÉVILLE mainly based upon features of the ♂ genitalia. HUANG (2000) and HUANG & XUE (2004) both figured ♂ genitalia of Chinese species of *Symbrenthia* and *Brensymthia* in detail, but the ♂ genitalia of *S. silana* DE NICÉVILLE was not included in these two papers. However, the ♂ genitalia of *S. silana* DE NICÉVILLE (fig. 3) is quite different from that of *S. niphanda* MOORE (fig. 2) and *S. sinoides* HALL (fig. 1). In this paper, *S. silana* DE NICÉVILLE is still arranged in the genus *Symbrenthia*, despite its ♂ genitalia also being quite different from other Chinese species of *Symbrenthia*. Now, the question is that, excluding species which are arranged in *Brensymthia*, is *Symbrenthia* still a natural grouping?

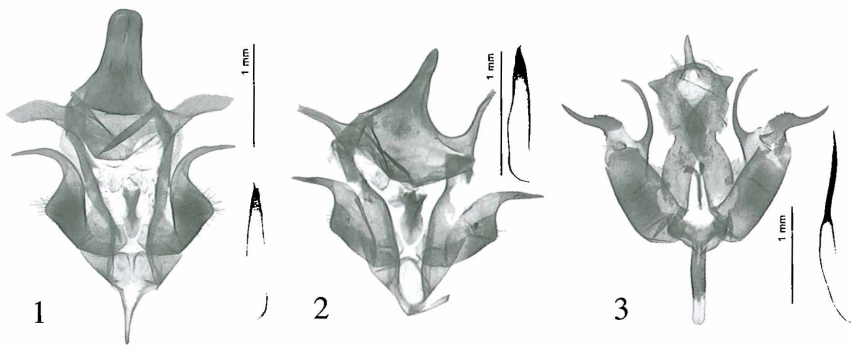


Fig. 1: ♂ genitalia of *Symbrenthia sinoides* HALL, 1935 from Lushan County, Sichuan.

Fig. 2: ♂ genitalia of *Symbrenthia niphanda* MOORE, 1872 from Bomri County, Tibet.

Fig. 3: ♂ genitalia of *Symbrenthia silana* DE NICÉVILLE, 1885 from Motuo County, Tibet.

Euthalia hoa isolata LANG **subspec. nov.** (colour plate 9: 1, 2)

Holotype ♂: Hainan, Ledong County, Mt. Jianfengling, Tianchi Lake, 828 m, 20.V.2009, coll. CHEN FUQIANG (IZCAS)

Euthalia hoa MONASTYRSKII, 2005 was described from Central Vietnam. This species belongs to the *duda* group (HUANG, 2002) or the *thibetana* complex (MORISHITA, 1991) which is composed of those species with a white discal band through both wings in the subgenus *Limbusa* MOORE, 1896. The members of the *duda* group are distributed from the southern slope of the Himalayas eastwards to SE. China, viz. the northern border of the Oriental Region. So far, *E. hoa* MONASTYRSKII is the southern-most species of the *duda* group. GU (1997) first recorded species of the *duda* group from Hainan Island, but he misidentified the insular subspecies as *E. thibetana insulae* HALL, 1930 which is an endemic of Taiwan Island. HUANG (2002) considered this insular subspecies from Hainan as an unnamed one of the continental species *E. yasuyukii* YOSHINO, 1998, but he did not see the material of this insular subspecies (pers. comm.). Recently, a ♂ specimen of this insular population was collected from Hainan. Both its external and ♂ genital features are closer to *E. hoa* MONASTYRSKII but not *E. yasuyukii* YOSHINO, so it appears to be a new subspecies of *E. hoa* MONASTYRSKII.

Description ♂: FW length: 44 mm. Wing pattern: Dorsal FW with ground colour olive-drab; discal band creamy, broad and interrupted only by veins, spot in space 4 short and angled outwards, spot in space 5 slightly longer than the spot in space 6; subapical spots in spaces 6 and 7 creamy. Dorsal HW with ground colour as in FW; discal band creamy, broad, and with its outer margin waved and edged by a row of black lunules; a slender greyish blue band bordering outside of discal band, but it is creamy in spaces 6 and 7. Ventral surface with ground colour pale green; discal bands and FW subapical spots white. ♂ genitalia (fig. 5): Same as in *E. hoa* MONASTYRSKII. Apex of valva twisted nearly 90 degrees and serrated, it being round from a dorsal view.

Diagnosis: Compared with the nominate subspecies *E. hoa* MONASTYRSKII from Central Vietnam, the new subspecies can be recognised by the following characters:

1. Discal band of dorsal FW is creamy, whereas in the nominate subspecies it is yellowish.
2. FW discal spot in space 4 is shorter than spot in space 5, whereas in the nominate subspecies spot in space 4 is equal in width with spot in space 5.
3. HW discal band with its inner edge almost straight, whereas in the nominate subspecies it is concave distally.
4. Discal band of dorsal HW is margined by a greyish blue edge at the outside which is absent in the nominate subspecies.
5. Ventral surface is without yellow tinge, whereas the nominate subspecies has a very slight yellowish tinge in marginal and submarginal areas.

The new subspecies also can be easily distinguished from *E. yasuyukii* YOSHINO by the following characters: Discal bands of both wings are obviously wider than *E. yasuyukii* YOSHINO; valva of *E. yasuyukii* YOSHINO (fig. 4) is larger and longer, its apex also being broader.

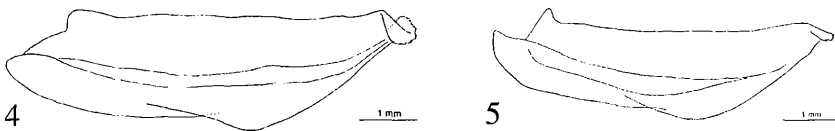


Fig. 4: Valva of *Euthalia yasuyukii* YOSHINO, 1998 from Mt. Tianmushan, Zhejiang.

Fig. 5: Valva of *Euthalia hoa isolata* LANG **subspec. nov.** from Mt. Jianfengling, Hainan.

Etymology: The new subspecific name *isolata* means isolated from the continent.

***Euthalia yao* YOSHINO, 1997 stat. nov.** (colour plate 9: 3, 4)

Euthalia [sic] *asonia* [sic] *yao* YOSHINO, 1997, *Neo Lepidoptera* 2 (2): 4, figs. 33, 34. TL: Longsheng, Guangxi.

Euthalia anosia recta MIYATA & HANAFUSA, 1989, *Futao* 2: 1, pl. 2: 9, 10. TL: Wuyishan, Fujian. secondary homonym of *Euthalia recta* (DE NICÉVILLE, 1886).

Euthalia anosia: TONG, 1993, *Butt. Fauna Zhejiang*: 39, figs. 304–306.

Euthalia anosia anosia: CHOU (nec MOORE), 1994, *Monograph. Rhop. Sin.*: 486.

Material: 1 ♂, Fujian: Jiangle County, Lishan Dianzhan, 800 m, 18.IX.1990, coll. LI HONGXING (IZCAS); 1 ♂, Hubei: Mt. Shennongjia, Jiuchong Wanjiagou, 870-900 m, 19.VII.1998, coll. ZHOU HONGZHANG (IZCAS).

The nominate *Euthalia a. anosia* (MOORE, 1858) is distributed from Sikkim eastwards to northern Indo-China including S. Yunnan. MIYATA & HANAFUSA (1989) first recorded this species from SE. China and described the quite different eastern population as *E. anosia recta* MIYATA & HANAFUSA, 1989 basing upon a single ♀ collected from Mt. Wuyishan, Fujian. TONG (1993) recorded this eastern subspecies from Zhejiang with photographs of both ♂ and ♀, but he misidentified it as the nominate subspecies of *E. anosia* (MOORE). CHOU (1994) followed TONG's opinion to believe that this eastern subspecies belongs to the nomino-typical one. YOSHINO (1997) noticed this subspecies again and gave it another name, i.e. *E. anosia yao* YOSHINO, 1997, based upon a single ♀ from Guangxi. Since the *E. recta* (DE NICÉVILLE) from NE. India first occupied the name "recta" in this genus, the name *E. anosia recta* MIYATA & HANAFUSA should be an invalid junior

secondary homonym. Therefore, *Euthalia yao* YOSHINO, 1997 **stat. nov.** can replace *E. anosia recta* MIYATA & HANAFUSA, 1989 to be the valid name of the eastern subspecies. However, both external and ♂ genital features of *Euthalia yao* YOSHINO, 1997 **stat. nov.** are quite different from the typical *E. anosia* (MOORE), so it appears to be a distinct species. In this study, the ♂ description of *E. yao* YOSHINO is given for the first time.

♂ Description: Antenna black dorsally, orange ventrally. FW length: 32-35 mm. Wing shape: FW apex acute and slightly elongated. HW termen round; tornus pointed. Wing pattern: Similar to that of *E. anosia* (MOORE). Dorsal FW with ground colour dark brown; subbasal black circular marks decorated with grey scales; outer half excluding apical area densely scattered with grey scales. Dorsal HW with ground colour as in FW; black circular mark at discocellular rounded by dense grey scales; another black oblong mark in cell; postdiscal area from spaces 1b to 5 densely scattered with grey scales; postdiscal row of black small spots extending from spaces 1b to 7. Ventral FW with ground colour grey; basal half black marks same as dorsal surface but slender; oblique dark postdiscal band narrow and blurred. Ventral HW with ground colour as in FW; basal half with weak irregularly circular marks; postdiscal row of black small spots as on dorsal surface. ♂ Genitalia (fig. 6): Uncus tapering towards tip. Gnathos slender and joined apically. Juxta with a pair of well developed lateral lobes, each being boomerang-shaped with their dorsal edges bending upwards and arranged with a row of strong teeth. Saccus long and robust. Valva slightly narrower towards tip, apical end round and smooth. Aedeagus wide and long, cornuti absent from vesica.

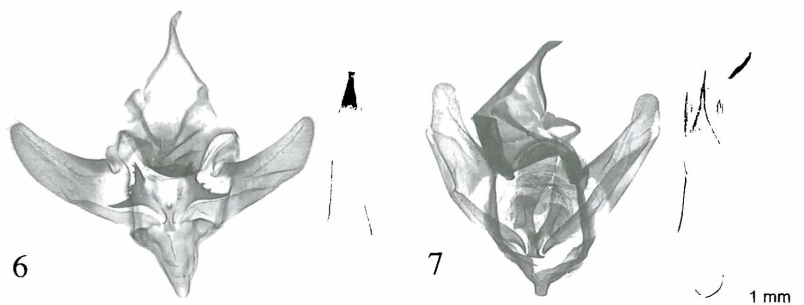


Fig. 6: ♂ genitalia of *Euthalia yao* YOSHINO, 1997 **stat. nov.** from Mt. Shennongjia, Hubei.

Fig. 7: ♂ genitalia of *Euthalia anosia* (MOORE, 1858) from Xishuangbanna, Yunnan.

Diagnosis. *E. yao* YOSHINO can be easily distinguished from *E. anosia* (MOORE) by the following characters:

1. FW apex is only slightly elongated, whereas in *E. anosia* (MOORE) it is strongly elongated.
2. Ground colour of ventral surface is darker than *E. anosia* (MOORE).
3. Lateral lobes of juxta are quite different from *E. anosia* (MOORE): Each of the lateral lobes of *E. yao* is boomerang-shaped with its upper edge curving upwards and arranged with a row of strong teeth, whereas in *E. anosia* (MOORE) it is tongue-shaped and extending upwards, with its upper apex round and edged by a row of dense and tiny teeth.
4. Saccus is long and robust, whereas in *E. anosia* (MOORE) it is very short and slender.
5. Cornuti are absent from vesica, whereas in *E. anosia* (MOORE) they are present.

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Colour plate 9/ Farbtafel 9

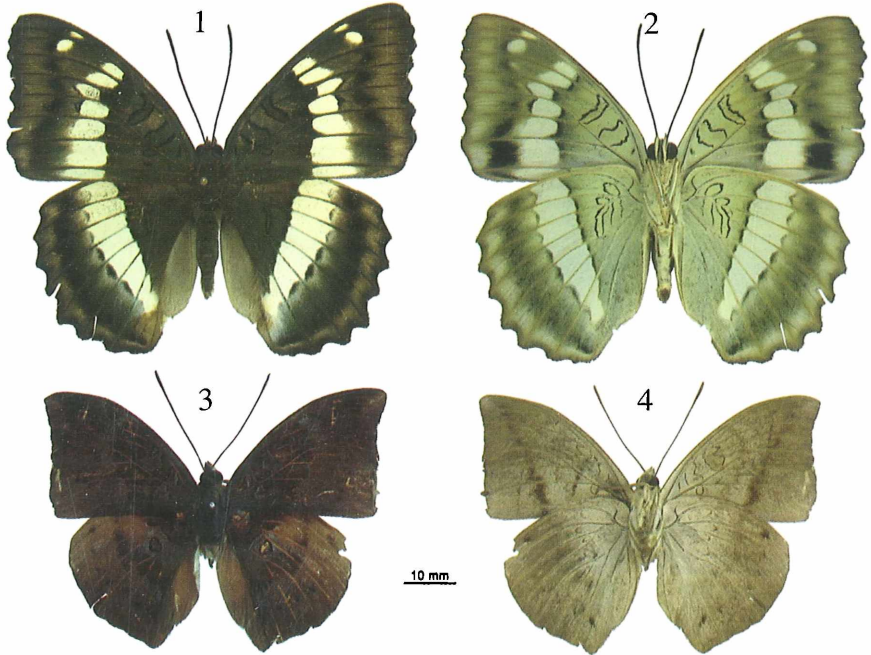


Fig. 1, 2: *Euthalia hoa isolata* LANG **subspec. nov.**, holotype ♂, Mt. Jianfengling, Hainan, dorsal, ventral.
Fig. 3, 4: *Euthalia yao* YOSHINO, 1997 **stat. nov.**, ♂, Mt. Shennongjia, Hubei, dorsal, ventral.

Colour plate 9a/ Farbtafel 9a



Abb. 2: *Issoria lathonia* (LINNAEUS, 1758), aberrativer Falter; Schweiz, Kanton Schaffhausen, Amtsbezirk Reiat, 8236 Büttenhardt, Flurbezirk Langärgete, Halbtrockenrasen, 615 m, 20.IX.2006.

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