A review of the Euthalia strephon GROSE-SMITH, 1893 complex in China

(Lepidoptera: Nymphalidae)

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Abstract: *Euthalia strephon* GROSE-SMITH, 1893 and its relatives in China are reviewed, with σ and \circ genitalia examined and figured. Two new species are described: *E. minyueensis* H. HUANG, M.-Y. WU & Z.-J. WU spec. nov. from Fujian and Guangdong, and *E. wangweii* H. HUANG & S.-Y. HUANG spec. nov. from upper Nujiang valley, NW Yunnan.

Introduction: *Euthalia strephon* GROSE-SMITH, 1893 and its relatives were reviewed and included by T. YOKOCHI (2012) into the Type B of the *Euthalia patala* (KOLLAR, 1844) group, called the *Euthalia strephon* GROSE-SMITH complex in this work. Due to the lack of materials, YOKOCHI (2012) was unable to establish a classification on the stable σ genitalia characters and the 9 wing-characters at the time. Our knowledge of this complex has been improved by many collectors during the last years. Additional important specimens were figured by Y. INAYOSHI in his comprehensive website on butterflies from Indo-China. Also a good number of specimens were collected by various Chinese collectors from S & SW China, gathered and studied by the authors in this paper. This study was undertaken chiefly by the senior author except for the following works. The second and third authors collected nearly all specimens from Fujian and dissected the major part of the collection from Fujian. The fourth author purchased a pair of *E. shinkaii* YOKOCHI, 2004 from Vietnam and dissected the σ specimen, traced and dissected a σ specimen of *E. brevifasciata* CHOU & GU in SYSBM, and collected a part of the type material of *Euthalia wangweii* spec. nov..

Abbreviations:

| IZCA: | Institute of Zoology, Chinese Academy of Science, Beijing, China. |
|--------|---|
| CHH: | Collection of HAO HUANG, Qingdao, Shandong. |
| CHSY: | Collection of SI-YAO HUANG, Zhuhai, Guangdong. |
| CMWW: | Collection of WEI-WEI MAO, Shanghai. |
| CTY: | Collection of TAKASHI YOKOCHI, Aichi, Japan. |
| CWMJ: | Collection of MIN-JIN WU, Sanming, Fujian. |
| CWZJ: | Collection of ZHEN-JUN WU, Fuzhou, Fujian. |
| CZJQ: | Collection of JIAN-QING ZHU, Shanghai. |
| KMNH: | Kitakyushu Museum of Natural History & Human History, Fukuoka, Japan. |
| SYSBM: | The Museum of Biology, Sun Yat-sen University, Guangzhou. |
| TL: | Type locality. |

Taxonomic accounts

Nymphalidae

Euthalia strephon GROSE-SMITH complex

Species delimitation. Species of this complex were considered to be allopatric with slight morphological differences. YOKOCHI (2012) separated this complex into a series of species on account of some slight differences in σ genitalia, however the stability and importance of the σ genital characters were not tested by sufficient sampling.

YOKOCHI (2012) and INAYOSHI (2022-2023) revealed that *E. haradai* YOKOCHI, 1996 has a range overlapping with that of *E. shinkaii* YOKOCHI, 2004 in N Vietnam and with that of *E. lao* YOKOCHI, 2012 in N Laos. However, the σ genitalia of *E. lao* YOKOCHI are in common with those of *E. haradai* YOKOCHI taken from the specimen from N Vietnam (YOKOCHI, 2004 & 2012); *E. lao* YOKOCHI should be a synonym of *E. haradai* YOKOCHI. Nevertheless, *E. haradai* YOKOCHI and *E. shinkaii* YOKOCHI have overlapping ranges in N Vietnam though strict sympatric record has not been reported. These two species are different at apex of valva in σ genitalia: broad and smooth in *E. shinkaii* YOKOCHI versus protruding and serrate in *E. haradai* YOKOCHI.

A similar pattern is found in C Fujian, SE China: *E. strephon* GROSE-SMITH and *E. minyueensis* **spec. nov.** are sympatric at Sanming County (specifically, Dayoushan) and are constantly different in apex of valva. These two species were encountered at different elevations: *E. strephon* GROSE-SMITH prefers higher altitude above 850 m, whilst *E. minyueensis* **spec. nov.** prefers lower altitude below 600 m. It is noteworthy that the two species may have natural hybrids as very few specimens have an intermediate form in σ genitalia (fig. 7-SM1).

By such distributional pattern and difference in altitude of habitat, these sympatric species with genital difference are accepted as separate species with reproductive isolation. Only two possible natural hybrids were observed in the vast sympatric area of these species. These sympatric species are constantly different in some wing-characters of \circ . Therefore the species delimitation in this group can be established on genital differences and \circ external differences, consulting the distance between those sympatric species in the group.

 \circ genital characters. All the Chinese taxa have been examined in this work. The \circ genitalia of this complex are rather uniform, varying little between species: papilla analis oblong in shape without marked difference between species; apophyses posterioris a little longer than papilla analis; apophyses anterioris absent; a pair of e-mail copulatory pouches developed in cavity between papilla analis and ostium bursae (such copulatory pouches are used to receive valvae when copulating); ostium bursae e-mail, without large sclerites around ostium; lamella antevaginalis absent; lamella postvaginalis obsolete as a small oblong sclerite in most species but as a pair of rounded sclerites in *E. zhaxidunzhui* HUANG; antrum not pigmented, longer than wide, with ductus seminalis attached at its cephalic end; ductus bursae e-mail and not pigmented; corpus bursae oval and e-mail, without signum.

The only remarkable difference is found between *E. zhaxidunzhui* HUANG and all of the remaining species in lamella postvaginalis, suggesting that *E. zhaxidunzhui* HUANG is widely separated from all other species in systematics.

 \Im wing-characters. The constant difference found in external features of \Im may be important in taxonomy. \Im belonging to different species in sympatry are constantly different whilst \Im of same species vary little.

The following characters are found useful in taxonomy.

D- White discal band of forewing: narrower in space 3 (D1); wider in space 3 (D2).

E-White discal band of forewing: rather even in width throughout (E1): wider at costa and tapered toward tornus (E2).

F-Whitish discal spots in spaces 4-7 on hindwing underside: complete (F1); incomplete, with some part absent (F2).

G-Black submarginal fascia on hindwing underside: obscure or ill-defined (G1); clearly defined (G2).

♂ genital characters. The reliable differences in ♂ genitalia are only found in valva. And the following characters are proved useful on good numbers of specimens.

A-Harpe: long (A1); moderately long (A2); short (A3).

B-Apical teeth of ampulla: absent or hardly seen (B1); distinct but small or short (B2); fully developed and long (B3).

C-Ventral margin of harpe: abruptly bent near apex (C1); rather evenly curved throughout (C2).

Thus the *c*^a genitalia of these species can be classified into the following main forms:

Group i (A1+2, B2+3, C2): E. strephon GROSE-SMITH, E. haradai YOKOCHI (= E. lao YOKOCHI), E. wangweii spec. nov..

Group ii (A1+2+3, B1+2, C1): E. shinkaii YOKOCHI, E. strephonida MONASTYRSKII, 2005, E. minyueensis spec. nov..

Group iii (A1+2, B3, C1): E. zhaxidunzhui HUANG, 1998; E. zhaxidunzhui ssp. (Kachin, N Myanmar).

Group iv (A3, B2, C2): E. brevifasciata CHOU & GU, 1994.

Whether these groups are natural groups requires a further research in future. Species belonging to different groups can be well accepted as separate species, due to the above-mentioned sympatry or the difference in \Im genitalia. Species belonging to same group are formed by allopatric speciation, thus the species boundaries among the same group are mainly based on discontinuous character states in \Im genitalia and \Im wing-pattern.

In Group ii, *E. strephonida* MONASTYRSKII was accepted as separate from *E. shinkaii* YOKOCHI (both belonging to Group ii) by σ having a much shorter valva and a much browner and darker ground color on forewing upper side with a less pronounced pale postdiscal suffusion. These two species are also different in φ , of which the whitish discal spots in spaces 4-7 on hindwing underside are complete in *E. strephonida* MONASTYRSKII but are incomplete in *E. shinkaii* YOKOCHI (INAYOSHI, 2022). Of the same group, *E. minyueensis* **spec. nov.** has an identical valva with that of *E. strephonida* MONASTYRSKII but the two species are widely separated in distribution by *E. shinkaii* YOKOCHI. Moreover, the φ of *E. minyueensis* **spec. nov.** is different from that of *E. strephonida* MONASTYRSKII and *E. shinkaii* YOKOCHI by having an uniform (in width) forewing discal band. Such discontinuity in σ genitalia and φ wing-pattern support the separations between *E. shinkaii* YOKOCHI, *E. strephonida* MONASTYRSKII and *E. minyueensis* **spec. nov.** at species level.

The case in Group i is different. All the three species have no structural difference in σ genitalia from one another, but they are constantly (as far as we know) different in \circ wing-pattern. Both *E. haradai* YOKOCHI and *E. wangweii* spec. nov. are constantly different from *E. strephon* GROSE-SMITH also by σ wing-pattern having a darker appearance on upper side of both wings and a narrower hindwing band. The distance in wing-patterns of both sexes matches with that found between groups. Moreover, *E. wangweii* spec. nov. has a much shorter sacculus in σ genitalia than *E. haradai* YOKOCHI. Therefore it is at best to treat both *E. haradai* YOKOCHI and *E. wangweii* spec. nov. as independent from *E. strephon* GROSE-SMITH tentatively.

E. brevifasciata CHOU & GU, 1994 in group iv requires a further study in future. It is well isolated from all other species in distribution and is characterized by its peculiar σ genitalia. The \circ of this species has a longer dorsum of hindwing than in all other species.

Key to species. The following key is used for a better understanding of specific division, not for an identification of specimens, as the most important characters in σ genitalia are used at first, being not practically useful for an identification in wing-pattern.

- 1. Ventral margin of harpe abruptly bent near apex......2
- -. Ventral margin of harpe rather evenly curved throughout5

- 3. White discal band of forewing in 9 even in width throughout......E. minyueensis spec. nov.

- -. Whitish discal spots in spaces 4-7 on hindwing underside of \circ incomplete, with spot in space 4 obsolete and not whitish; ground color of forewing upper side of σ paler and greener, with pale postdiscal suffusion more or less better marked; valva of σ genitalia longer with apical serration always present and larger*E. shinkaii* YOKOCHI
- 5. Harpe of S valva markedly shorter; hindwing dorsum of 9 markedly longer......E. brevifasciata CHOU & GU

-. Yellow discal fascia on hindwing upper side of ♂ thinner and incomplete, ill-defined in space 2; whitish discal band on forewing upper side of ♀ markedly wider..........7

- 7. White discal band on forewing of ♀ even in width throughout; Black submarginal fascia on hindwing underside obscure or illdefined; ♂ genitalia smaller in size, with a markedly shorter sacculus of valva.....*E. wangweii* **spec. nov.**
- -. White discal band on forewing of ♀ wider at costa and tapered toward tornus; Black submarginal fascia on hindwing underside clearly defined; ♂ genitalia larger in size, with a markedly longer sacculus of valva......*E. haradai* YOKOCHI

Euthalia strephon GROSE-SMITH, 1893

Euthalia strephon GROSE-SMITH, 1893: 216 (TL: Omei-shan); OBERTHÜR, 1907: 260, description of ♀; TONG et al., 1993: 39, pl. 34, figs. 309-310 for ♂ from Taishun, Zhejiang; CHOU, 1994: 492, figs. for ♂♂ from Zhejiang; LIU et al., 2009: 129, fig. for ♂ from Wuyuan, Jiangxi; YOKOCHI, 2010: pl. 22, fig. 94 for ♂ syntype; LANG, 2012: 229, pl. XXI, figs. 13-14 for ♂♂, records from Lushan, Sichuan and Simianshan, Chongqing, fig. 268 for ♂ genitalia; YOKOCHI, 2012: 26, fig. 422 for ♂ genitalia taken from syntype, figs. 512-513, 515-516 for ♂♂ & ♀♀ from Qionglaishan and Wuyishan, 41- records from Jiulong, Miyi, Wulianfeng (Yongshan, Zhaotong, NE Yunnan), Zhongdian (requiring confirmation) & Wuyishan; WANG & TANG, 2012: 29, pl. 75, figs. 5-6 for ♂ from Maoershan, Guangxi; WANG et al., 2015: 135-136, figs. for ♂ from Daiyunshan, Fujian; LI, 2021: 5, 49- fig. 139 for ♂ from Shunhuangshan, Hunan; WEN, 2022: 215, figs. for living ♂♂ & ♀ from Tianbaoyan, Yong'an, Fujian.

Bassarona strephon: D'ABRERA, 1993: 364, figs. for d'd' from Siao Lou.

Euthalia shinkaii: Yokocнi, 2012: pl. 84, figs. 526a-b for ♀ from Dayaoshan, Guangxi. Misidentification

Material. Sichuan: 1 ♂ (IZCA), Ya'an, Lushan County, 2007, no further data; 1 ♀ (CZJQ), Ya'an, Tianquan County, Lianglu, 1450 m, 3.IX.2010, J.-Q. ZHU leg. Chongqing: 1 ♂ (CHH), Simianshan, Chaqishan, 1500-2000 m, 15.VII.2007, L.-J. WANG leg., ex coll. He-Li Deng; 1 ♂ (CHH), Simianshan, Dawopu, 8.VII.2015, G.-X. XUE leg. Zhejiang: 2 ♂♂, 1 ♀ (CMWW), Lishui City, Longquan, Fengyangshan Nature Reserve, Longquan-shan, 1450 m, 11.VII.2023, W.-W. MAo leg. Fujian: 7 ♂♂ 3 ♀ (CWZJ), Nanping City, Wuyishan, Wuyishan Nature Reserve, Guwangkeng and Masu, 900-1300 m, 17.VI. & 24.VII. 2020, Z.-J. WU leg.; 1 ♂, 1 ♀ (CWMJ), Sanming City, Hutoushan, 850 m, 25.VI.2000, M.-J. WU leg.; 1 ♂ (CWMJ), Sanming City, Dayoushan, 1000 m, 8.VII.2018, M.-J. WU leg.; 1 ♂ (hybrid), Sanming City, Luobading, 1300 m, 20.VII.2017; 1 ♂ (hybrid), Sanming City, Daopaiyan, no further data. 9 ♂♂ dissected.

Remarks. 4 \mathfrak{S} were figured in literature and seven further \mathfrak{S} were examined by the authors. The \mathfrak{S} of this species is rather constant in the following wing-characters: 1) forewing discal band even in width from costa to tornus; 2) forewing discal band narrow; 3) submarginal black line on hindwing underside obscure, not clearly defined. By such experience, the \mathfrak{S} specimen from Dayaoshan, figured and identified by YOKOCHI (2012; fig. 526) as *E. shinkaii* YOKOCHI actually belongs to *E. strephon* GROSE-SMITH.

YOKOCHI (2012) recorded this species from Zhongdian, NW Yunnan, but gave no detailed data nor habitus of specimens. This record requires a confirmation in future, as no specimen of *E. strephon* GROSE-SMITH has been collected from NW Yunnan by any Chinese collectors yet.

Euthalia haradai Yokochi, 1996

Euthalia strephon haradai YOKOCHI, 1996: 14 (TL: Fang, North Thailand), figs. 1-2 for ♂ holotype; YOKOCHI, 2004: pl. 2, Nos. 5-10 for ♂♂ and (1st) ♀ from Vietnam, No. 11-12 for ♂ genitalia taken from specimen from Vietnam; YOKOCHI, 2010: pl. 9, fig. 40 for ♂ holotype.

Euthalia strephon: NAKAMURA & WAKAHARA, 2012: 46, pl. 6, figs. Ny-141 for 3 from Phou Pan, Laos.

- *Euthalia shinkaii*: NAKAMURA & WAKAHARA, 2012: 46, pl. 6, figs. Ny-142 for ♂ (holotype of *E. lao* YOKCOHI) from Phou Samsoum, Laos. *Euthalia haradai*: YOKOCHI, 2012: 27, partim (excluding specimens from Kachin), figs. 517, 519-520 for ♂♂ and (1st) ♀ from Thailand and Vietnam; MONASTYRSKII, 2019: pl. 73, figs. 2a-b for ♂ from Lao Cai, N Vietnam, 2c-d for (2nd) ♀ from Quang Nam, C Vietnam; INAYOSHI, 2022: records from Thailand, Laos & Vietnam, figs. for ♂♂ and (3rd) ♀ from Laos and Vietnam.
- Euthalia lao YOKOCHI, 2012: 28 (TL: Phou Samsoum, 12 km East of Ban Nah Mouang, Xiang Khoang, Laos), fig. 527 for holotype, fig. 427 for genitalia taken from paratype from TL; INAYOSHI, 2023: figs. for from Xiang Khouang, Laos. Possible synonym

Material. None.

Remarks. A big problem is that YOKOCHI (1996-2012) never figured the σ genitalia taken from the specimen from the TL in Thailand. He (YOKOCHI, 2004) figured the σ genitalia taken from a specimen from Sapa, Lao Cai, N Vietnam and then (YOKOCHI, 2012) a specimen from Kachin, N Myanmar. The genitalia of these two specimens are different in some important character, being applicable to the above-mentioned Group i and Group iii respectively. The authors believed that the specimens from Vietnam and Laos belong to *E. haradai* YOKOCHI whilst the specimens from Kachin belong to an unnamed subspecies of *E. zhaxidunzhui* HUANG, because of the following points. 1). σ specimens from Vietnam and Laos have a rather vertical discal spot in space 4 on forewing underside as those from Thailand, whereas those from Kachin have a horizontal discal spot in space 4 on forewing underside. 2) The butterfly fauna of N Thailand is very similar to that of N Laos, whereas that of Kachin, N Myanmar is close to that of SE Tibet and NE India.

The σ genitalia of *E. lao* YOKOCHI taken from a paratype (YOKOCHI, 2012) are not different from those of *E. haradai* YOKOCHI taken from the specimen from Vietnam (YOKOCHI, 2004). *E. lao* YOKOCHI seems to be restricted to Phou Samsoum, Laos, characterized by σ having paler discal spots in spaces 3, 5 & 6 on forewing upper side and abruptly contracted discal fascia in space 4 on hindwing upper side. However, a σ specimen of *E. haradai* YOKOCHI from Lao Cai, N Vietnam, figured by MONASTYRSKII (2019: pl. 73, figs. 2a-b), is hardly different from *E. lao* YOKOCHI. In conclusion, *E. lao* YOKOCHI could be a morphological form of *E. haradai* YOKOCHI, with no difference in σ genitalia.

It is highly possible that this species distributes into Wenshan Pref., SE Yunnan which has not been thoroughly investigated by the authors.

Euthalia w a n g w e i i H. HUANG & S.-Y. HUANG spec. nov.

Type data. Yunnan Province: Holotype: 1 of (SHNU), Nujiang Pref., Gongshan County, Bingzhongluo, Qiunatong, 2300 m, 8.VIII.2023, H. HUANG leg.; **Paratypes:** 4 of (CHH), north of Bingzhongluo, 2000 m, 3-13.VIII.2023, H. HUANG leg.; 1 of (CHH), north of Bingzhongluo, 2000 m, 19.VIII.2023, H. HUANG leg.; 1 of (CHSY), Bingzhongluo, Qiunatong, 2300 m, 28.VII.2021, S.-Y. HUANG leg.; 2 of (CHH, CHSY), Gongshan County, on path between Gazu and Qiqi, 1800-2000 m, 6-7.VIII.2021, S.-Y. HUANG leg.; 1 of (CHH), Bingzhongluo, Wuli village, 1800 m, 20.VII.2022, Z. YAO leg.; 1 of (CWJZ), Gongshan, on path between Gazu and Qiqi, 1800-2000 m, VII.2019, Z.-J. Wu leg. 7 of dissected.

Etymology. This new species is named in honor of Mr. WEI WANG, Quzhou.

Diagnosis. This new species is close to E. haradai YOKOCHI, but can be distinguished from the latter by the following combination

of characters:

1) Size of *s* smaller, with a forewing-length of 32-35 mm against 36-42 mm in *E. haradai* Yokochi.

2) Sacculus of valva in *d* genitalia shorter than in *E. haradai* Yoкochi.

3) Forewing discal band of \circ even in width from costa to tornus (wider at costa and tapered toward tornus in *E. haradai* YOKOCHI). 4) Submarginal black fascia on hindwing underside of \circ obscure or ill-defined (clearly defined in *E. haradai* YOKOCHI).

Remarks. This new species belongs to Group i (see above) by having an evenly curved ventral margin of harpe in σ genitalia. It is accepted as separate species from *E. haradai* YOKOCHI by having a markedly different \Im . It is rather isolated from the range of *E. haradai* YOKOCHI. On the other hand, it is close to an unnamed population of *E. zhaxidunzhui* HUANG in distribution. As only 3 \Im are known for *E. haradai* YOKOCHI and only 1 \Im is known for the new species, further investigations are still necessary.

Euthalia shinkaii Yokochi, 2004

Euthalia shinkaii YOKOCHI, 2004: 5 (TL: Tamdao, Vinh Phu, Northern Vietnam), pl. 2, No. 1-2 for σ holotype, No. 3-4 for φ paratype, No. 11-12 for σ genitalia taken from paratype; YOKOCHI, 2010: pl. 21, fig. 89 for σ holotype; YOKOCHI, 2012: 28, partim (excluding specimen from Guangxi), figs. 523-526 for $\sigma\sigma$ & $\varphi\phi$ from Vietnam, fig. 425 for σ genitalia taken from another paratype; MONASTYRSKII, 2019: pl. 73, figs. 1a-b for σ holotype; INAYOSHI, 2022: figs. for $\sigma\sigma$ & $\varphi\phi$ from Thua Thien Hue and Gia Lai, Vietnam, records from Vietnam.

Euthalia haradai: MONASTYRSKII, 2019: partim on fig. 92 D for & genitalia copied from YOKOCHI (2012) (error in editing)

Material. C Vietnam: 1 °, 1 9 (CHH), Gia Lai, V.2022, local catcher leg., purchased by S.-Y. HUANG from eBay, ex coll. S.-Y. HUANG. All dissected.

Remarks. This is the largest species in the complex, possessing the similar \circ genitalia to *E. strephonida* MONA. and *E. minyueensis* **spec. nov.** Records in literature suggest that this species is probably sympatric with *E. haradai* YOKOCHI in N & C Vietnam. The \circ of this species is rather similar to that of the "sympatric" *E. haradai* YOKOCHI, but may be separable from the latter by having a frequently larger size and the less blackish submarginal fascia on hindwing underside.

The previous record of this species from Dayaoshan, Guangxi by YOKOCHI (2012) is a misidentification of *E. strephon* GROSE-SMITH. Thus this species is still restricted to Vietnam.

Euthalia strephonida MONASTYRSKII, 2005

Euthalia strephonida MONASTYRSKII, 2005: 156-158 (TL: C Vietnam, Khanh Hoa, Dien Khanh district, Hon Ba N.R.), cpl. 8, figs. 5-6 for \circ holotype, fig. 8A for \circ genitalia; Yokochi, 2010: pl. 22, fig. 95 for \circ holotype; Yokochi, 2012: 28, fig. 426 for \circ genitalia taken from holotype; MONASTYRSKII, 2019: 140, 141- fig. 92 A for \circ genitalia, pl. 74, figs. 1a-b for \circ holotype; INAYOSHI, 2022: figs. for $\circ \circ$ from Khanh Hoa, Vietnam and $\circ \circ$ from Dak Lak, Vietnam.

Material. None.

Remarks. Though the σ genitalia are similar to those of *E. shinkaii* YOKOCHI, the wing-patterns in both sexes are distinguishable from those of *E. shinkaii* YOKOCHI.

Euthalia minyueensis H. HUANG, M.-J. WU & Z.-J. WU spec. nov.

Euthalia strephon: YOKOCHI, 2012: partim, fig. 514 for & from Sanming; Gu et al., 2018: 99, figs. for living & from Nanling, Guangdong; Wu et al., 2021: 92, partim, fig. for living & from Longqishan, Fujian.

Type data. Fujian province: Holotype: 1 ° (SHNU), Fuzhou City, Shoushan, 400 m, 21.VI.2014, Z.-J WU leg.; **Paratypes**: 1 ° (CWZJ), Fuzhou, Shoushan, 400 m, 14.VI.2014, Z.-J. WU leg.; 1 ° (CHH), Jian'ou, Wanmulin, 500 m, VIII.1990, S.-G. SHEN leg.; 1 ° (CWMJ), Sanming City, Geshikao, 450 m, 26.V.2016, M.-J. WU leg.; 4 ° ° (CWZJ), Sanming City, Geshikao, 450 m, 17.VI.2015 & 31.V.2017, Z.-J. WU leg.; 1 ° (CWMJ), Sanming City, Zhushan Canyon, 200 m, 29.V.2017, M.-J. WU leg.; 1 ° (CWMJ), Sanming City, Youxi, Jiugaoshan, 500 m, larva collected on 23.IV.2018 and reared by Y.-C. ZHENG, emerged in V.2018; 1 ° (CWZJ), Sanming City, Youxi, Jiugaoshan, 500 m, 7.VIII.2017, Z.-J. WU leg.; ♀ (CWMJ), Sanming City, Dayoushan, 8.VII.2018, M.-J. WU leg. **Guangdong province**: **Paratype**: 1 ° (CHH), Nanling Nature Reserve, VIII.1995, S.-G. SHEN leg. 5 ° ° and 1 ° dissected.

Etymology. This new species is named after its distributional range, Fujian (called Min) and Guangdong (called Yue).

Diagnosis. This new species is close to *E. shinkaii* YOKOCHI, but can be distinguished from the latter by the following combination of characters:

1) Size in both sexes smaller, with a forewing-length of 35-37.5 mm in ♂ and of 44-45 mm in ♀ (forewing-length of *E. haradai* YOKOCHI 42-45 mm in ♂ and 50-56 mm in ♀).

2) Forewing discal band of 9 even in width throughout, not tapered from costa to tornus as in *E. shinkaii* YOKOCHI.

3) White discal spots in spaces 4-7 on hindwing underside of \circ rather complete.

4) Dark submarginal fascia on hindwing underside of 9 blacker and more heavily marked.

5) Apical teeth of ampulla in σ genitalia smaller, sometimes entirely absent.

This new species is in common with *Euthalia strephonida* MONA. from C Vietnam in σ genitalia, but can be distinguished from the latter by having a more greenish ground color and a better pronounced pale discal suffusion on forewing upper side of σ , and a more uniform (in width) forewing discal band of φ . These two species are widely separated by the range of *E. shinkaii* YOKOCHI.

Remarks. This new species is sympatric with *E. strephon* GROSE-SMITH in Sanming area of Fujian. The two species have constant difference in appearance of discal fascia on hindwing upper side of σ and width of forewing discal band of φ . The constant difference in σ genitalia strongly support that these two species are isolated in reproduction with only very few hybrids found. The two species prefer different habitats in altitude.

This new species is close to the nearby *E. shinkaii* YOKOCHI in σ genitalia and to the nearby *E. brevifasciata* CHOU & GU in σ wingpattern, but is separable from both of them by the different wing-pattern of \circ . The σ differs from that of *E. brevifasciata* CHOU & GU also by having smaller discal spots in spaces 5-6 near costa on forewing upper side and a longer harpe in valva of genitalia.

Euthalia zhaxidunzhui HUANG, 1998

Euthalia zhaxidunzhui HUANG, 1998: 227 (TL: Laohuzui, on path between Hanmi and Beibeng, Motuo, SE Tibet), pl. 5, figs. 3a, 3b, 4a, 4b for d's, fig. 9d for d' genitalia taken from paratype; YOKOCHI, 2010: pl. 67, fig. 115 for d' paratype; YOKOCHI, 2012: 27, fig. 521 for d' paratype.

Material. SE Tibet: ♂ holotype (IZCA), 4 ♂♂ paratypes (CHH, CTY, KMNH), Linzhi Pref., Motuo County, on path between Hanmi and Arniqiao, Laohuzui, 1100-1300 m, 21-29.VII.1996, H. HUANG leg.; 1 ♀ (CHH), Motuo, on path between Arniqiao and Hanmi, 1100-1400 m, 11.VIII.2015, J.-Y. WANG leg.

Remarks. The \Im genitalia of this species differ from those of other species by having a transverse pair of sclerites behind ostium bursae, instead of an longitudinal lamella postvaginalis in other species. The forewing discal band of \Im is rather even in width throughout as in *E. strephon* GROSE-SMITH, and is wider than that of *E. strephon* GROSE-SMITH but narrower than that of other species.

Euthalia zhaxidunzhui subspec.

Euthalia strephon haradai: YOKOCHI, 2000: pl. 8, figs. 39-40 for d' from Kachin, N Myanmar.

Euthalia shinkaii Yokochi, 2004: partim on pl. 2, No. 5-6 for non-type o' from Kachin (not dissected)

Euthalia haradai: YOKOCHI, 2012: 27, partim (specimens from Kachin), 63, fig. 423 for *d* genitalia taken from specimen from Kachin, pl. 82, figs. 518a-b for *d* from Kachin.

Euthalia zhaxidunzhui: Yoкocнi, 2012: pl. 83, fig. 522 for *d* from Kachin.

Euthalia shinkaii: MONASTYRSKII, 2019: 141, partim on fig. 92 С for σ genitalia copied from YOKOCHI (2012) (error in editing).

Material. Myanmar: 1 d' (CHH), Kachin state, 9.VI.1996, ex coll. T. YOKOCHI.

Remarks. This population was misidentified by YOKOCHI (2000, 2004 & 2012) as *E. haradai* YOKOCHI. The σ genitalia match with those of *E. zhaxidunzhui* HUANG from SE Tibet.

Euthalia brevifasciata CHOU & GU, 1994

Euthalia strephon brevifasciata CHOU & GU, 1994: 492, 763 (TL: Jianfengling, Hainan), figs. for ° holotype; GU & CHEN, 1997: 186, figs. for ° holotype; LANG, 2012: 230, pl. XXI, fig. 15 for °, fig. 269 for ° genitalia.

Euthalia brevifasciata: Yoкocнi, 2012: 27.

Euthalia nara hainanana Gu, 1994: 488, 762 (TL: Tongshi, Hainan), figs. for 9 holotype; Yokochi, 2012: 27, synonymy for *E. brevifasciata* Снои & Gu.

Euthalia nara hainana (sic!): GU & CHEN, 1997: 189, 188- figs. for 9 holotype.

Material. Hainan: 1 ° (IZCA), on top of the Jianfengling peak, 1400 m, 4.VII.1983, M.-B. Gu leg.; 1 m (SYSBM), Hainan Island, XII.1982, no further data. All dissected.

Remarks. The σ genitalia of this species differ from those of all other species by having a shorter valva with evenly curved ventral margin of harpe. The only known \circ has a longer hindwing-dorsum than in all other species.

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Fig. 1: Habitus of *Euthalia* species d'd' under same scale - Upper side.



Fig. 2: Habitus of *Euthalia* species d'd' under same scale - Underside.



Fig. 3: Habitus of *Euthalia* species ♀♀ under same scale - Upper side. Fig. 4: Habitus of *Euthalia* species ♂♂ under same scale - Upper side.



Fig. 5: Habitus of *Euthalia* species ♀♀ under same scale - Underside. Fig. 6: Habitus of *Euthalia* species ♂♂ under same scale - Underside.



Fig. 7: σ valva in lateral view under same scale. Scale bar = 1 mm. Red arrows directing to character states interpreted in text. Colored spots referring to groups interpreted in text, with the colors corresponding to those used in distributional map.



Fig. 8: o^{*} genitalia in lateral view under same scale (except SH2 and L1). Scale bar = 1 mm. Colored spots referring to groups interpreted in text, with the colors corresponding to those used in distributional map.



Fig. 9: σ genitalia under same scale. Scale bar = 1 mm.

Fig. 10: Apex of ampulla in σ genitalia under same scale. Scale bar = 1 mm.





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Fig. 11: \circ genitalia under same scale. Scale bar = 1 mm.



Fig. 12: Distribution of Euthalia strephon GROSE-SMITH complex.

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