Notes on some *Lethe* species from W. China with description of two new subspecies

(Lepidoptera, Nymphalidae, Satyrinae)

by

SONG-YUN LANG

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Abstract: Some species of the genus *Lethe* Hübner, 1819 from China have been studied in this paper. The taxonomy of the *L. nigrifascia* LEECH, 1890-group is discussed. Two new subspecies, *L. nigrifascia lojishana* subspec. nov. and *L. armandina yanbiana* subspec. nov. from S.W. Sichuan, are described. *Lethe armandina jianqingi* Lang, 2016 is raised to specific status, viz. *L. jianqingi* Lang, 2016 stat. nov. *Zophoessa baoshana* Huang, Wu & Yuan, 2003 is transferred to the genus *Lethe* Hbn., viz. *L. baoshana* (Huang, Wu & Yuan, 2003) comb. nov., and it is the second known record of this poor known species. *Lethe baoshana* (Huang, Wu & Yuan, 2003) comb. nov. and *L. gregoryi* Watkins, 1927 are recorded from the fauna of Sichuan for the first time.

Materials: Materials studied in this paper were mainly collected by the author from his trip to Sichuan Province (Shimian County, Puge County, Yanbian County, Nanjiang County) and S. Shaanxi Province (Ningshan County) in 2016 and are kept in SONG-YUN LANG’s collection, Shuangliu, Chengdu, Sichuan, China (LSY). All type specimens in this study are also deposited in Coll. LSY. Some data in LANG & WANG (2016) and LANG (2016 a), including distributional records and measurement data of androconia, are shared in this paper.

Androconium: In this paper, androconia (figs: 18, 19) were prepared and measured using the methods in Wakeham-Dawson & Kudrna (2000) & Wakeham-Dawson et al. (2007). The androconia from the specimens of the species group were measured, and lengths (AL = Androconium Length), breadths (AB = Androconium Breadth) and shape ratios (RLB = Ratio of AL/AB) are shown in table 1.

Abbreviations:

DFW  Dorsal forewing
DHW  Dorsal hindwing
HT, PT Holotype, paratype
VFW  Ventral forewing
VHW  Ventral hindwing
TL  Type locality

*Lethe luojiani* LANG & WANG, 2016 (figs. 1, 2, 19 b, 20, 24 c) Atalanta 47 (1/2): 225, figs. 1-3, 7, 8f, 9, 13a. TL: Fengxian, Shaanxi.


An additional specimen of this recently described species was collected from Ningshan, south slope of Mts. Qinling, S. Shaanxi in June, and at the same place in late July, the author collected several *L. nigrifascia* LEECH, 1890.

Material: HT ♀ of *Lethe luojiani* LANG & WANG, China: Shaanxi, Fengxian, Jialingjiang-yuan, road to the Mt. top, 2200 m, 3.VII.2009, leg. Chun-Hao Wang, Ex. Jian Luo Coll.; 1 ♀, China, Shaanxi, Ningshan, Xuyangba to Huangguan, 1900 m, 10.VI.2016, leg. SONG-YUN LANG.

Distribution: China (S. Shaanxi, S. Gansu).

*Lethe baoshana* (Huang, Wu & Yuan, 2003) comb. nov. (figs. 3, 4, 19 e, 22, 24 f-g)

Following recent generic arrangement (BOZANO, 1999; HUANG, 2014; LANG, 2016b), *Zophoessa doubleday* [1849] is a subgenus of *Lehte Hrn.*. Thus, *Zophoessa baoshana* HUANG, Wu & Yuan is transferred to the genus *Lehte Hrn.*, viz. *L. baoshana* (Huang, Wu & Yuan) comb. nov. *Lethe baoshana* (Huang, Wu & Yuan) was described basing upon a single ♂ from W. Yunnan, which is kept in the museum of Institute of Zoology, Chinese Academy of Sciences (IZCAS). In this study, this species is recorded from the fauna of Sichuan for the first time, furthermore it is also the second record of this species since its publication. More taxonomic notes will be discussed in the next part of this paper.

Material: 2 ♂♂, China, Sichuan, Yanbian, Gesala, 3000 m, 3-4.VII.2016, legs. Yi LANG & SONG-YUN LANG.

Distribution: China (N.W. Yunnan, S. Sichuan).

*Lethe nigrifascia lojishana* subspec. nov. (figs. 7, 8, 19 d, 23, 24 e)

HT ♂, China, Sichuan: Puge, Mt. Luojishan, 2600 m, 29.VI.2016, leg. SONG-YUN LANG; PT 1 ♀, ditto, 27.VI.2016, leg. Yi LANG. Coll. LSY.
Until now, the following taxa of the Lethe nigrifascia Leech-group are known: L. nigrifascia Leech, 1890, L. nigrifascia ebiana Lang, 2015 (= L. nigrifascia ab. fasciata Seitz, 1907), L. baoshana (Huang, Wu & Yuan), L. luojian Lang & Wang and L. liyufei Huang, 2014 (Huang, 2014; Lang, 2015A; Lang & Wang, 2016). It has been discussed that whether “ebiana Lang” or “fasciata Seitz” is the valid name (Lamas, pers. comm.; Lang & Wang, 2016), therefore, before resolving this problem, the present author still considers “ebiana Lang” as a subspecies of L. nigrifascia Leech for avoiding further possible troubles just like: 1. Considering differences of superflcial appearance, morphology of androconia and genitalia structure, L. nigrifascia ebiana Lang or “fasciata Seitz” is indeed a distinct species against the typical L. nigrifascia Leech, and this species needs a confirmed name in the future. 2. L. baoshana (Huang, Wu & Yuan) is a taxon closely related to L. nigrifascia ebiana Lang and more likely they are conspeciﬁc, if so, according to priority, “ebiana Lang” should be a subspecies of L. baoshana (Huang, Wu & Yuan), or “baoshana Huang, Wu & Yuan” should be a subspecies of “fasciata Seitz”.

There are possibly four species in the Lethe nigrifascia Leech-group, viz. L. nigrifascia Leech, L. liyufei Huang, L. luojian Lang & Wang and the fourth species, viz. L. nigrifascia ebiana Lang (= fasciata Seitz) + L. baoshana (Huang, Wu & Yuan). Furthermore, it is L. luojian Lang & Wang, but not L. nigrifascia Leech nor L. liyufei Huang, which is phylogenetically closer to the fourth species, and L. luojian Lang & Wang is a replacement species of the fourth species in Qin-Ling Mts. (S. Gansu, S. Shaanxi). The range of the fourth species (baoshana + ebiana) extends from W. Yunnan (east bank of Nujiang Valley, TL of “baoshana Huang, Wu & Yuan”) to C. Sichuan (lower Daduhe Valley, habitat of typical “ebiana Lang”), and in this study, three biogeographical populations of the fourth species have been recognised, viz. “baoshana Huang, Wu & Yuan”, “ebiana Lang” as well as an undescribed new taxon, viz. L. nigrifascia lojishana subspec. nov. Specimen of the new taxon was obtained from Puge in S.W. Sichuan which is a place between the ranges of L. nigrifascia ebiana Lang and L. baoshana (Huang, Wu & Yuan), and obviously it is a subspecies of the fourth species. The present author provisionally treats the new taxon as a subspecies of L. nigrifascia Leech, like the arrangement of L. nigrifascia ebiana Lang. Further arrangement will be given after resolving the “ebiana Lang”-“fasciata Seitz” debate. Biogeographically, it is worth to be mentioned that the range of typical L. nigrifascia Leech are not overlapped with the range of the fourth species (baoshana+lojishana+ebiana) (fig. 17 A; table 2).

**Diagnosis**: The new subspecies can be distinguished from L. nigrifascia ebiana Lang (ﬁgs. 5, 6, 19 c, 21, 24 d) and L. baoshana (Huang, Wu & Yuan) by the combination of the following characters:

1. The new subspecies is somewhat larger in size than both L. n. ebiana Lang and L. baoshana (Huang, Wu & Yuan).
2. DFW subapical spots and postdiscal spots beyond the cell are paler than those in L. n. ebiana Lang.
3. VFW postdiscal area is paler than that in L. baoshana (Huang, Wu & Yuan).
4. VHW, violet white irises of postdiscal eyespots are somewhat weakly present, whereas they are more prominent in L. n. ebiana Lang.
5. Tip of valva in dorsal view (ﬁg. 24 e) is protruding and pointed, whereas it is round in L. n. ebiana Lang (ﬁg. 24 d).
6. Tip of valva in dorsal view is weakly serrated along the inner margin as that in L. n. ebiana Lang, whereas it has heavily serrate teeth along the inner margin in L. baoshana (Huang, Wu & Yuan) (ﬁg. 24 f-g).
7. Androconia (ﬁg. 19; table 1) of the new subspecies (AB = 22.60±0.97; RLB = 6.64±0.37) are much narrower in breadth than those of L. n. ebiana Lang (AB = 30.30±4.82; RLB = 5.02±0.68) and L. baoshana (Huang, Wu & Yuan) (AB = 27.15±3.37; RLB = 5.32±0.62).

**Etymology**: The subspeciﬁc name lojishana is named after the TL, Mts. Loji-shan in Puge county.

**Distribution**: China (S.W. Sichuan).

**Lethe jianqingi**, Lang, 2016 stat. nov. (ﬁgs. 12-14, 19 f, 25, 28 A)


**Lethe jianqingi**, Lang, 2016 stat. nov. from N. Yunnan and S.W. Sichuan was described as a geographic subspecies of L. armandina (Obertiur, 1881) from C. Sichuan. However, some clues reveal that this taxon should be a distinct species. First, according to Bozano (pers. comm.), one specimen of L. jianqingi Lang was also collected from Mianning (ﬁg. 17 B), which is a place very near the range of the nominate armandina Obthl. Second, one specimen of L. armandina (Obthl.), without DFW c brand, was collected by the present author together with L. jianqingi Lang from Yanbian, S. Sichuan.

**Material**: HT c of Lethe armandina jianqingi Lang, China, Sichuan, Puge, Mt. Luojishan, 3000 m, 14.VIII.2014, leg. Song-Yun Lang; PT 1 c of Lethe armandina jianqingi Lang, China, Yunnan, Wummian, Gesala, 3000 m, 9.VIII.2014, leg. Song-Yun Lang; 1 c, ditto, 10.VII.2016, leg. Song-Yun Lang.

**Distribution**: China (S.W. Sichuan, N. Yunnan).

**Lethe armandina y an h i a n a subspec. nov.**, (ﬁgs. 9, 10, 26, 28 B)

HT c: China, Sichuan, Yanbian, Gesala, 3000 m, 9.VIII.2014, leg. Song-Yun Lang. Coll. LSY.

As mentioned above, one specimen of Lethe armandina (Obthl.) (ﬁgs. 11, 27, 28 C) was collected together with L. jiaqingi Lang stat. nov. from Yanbian, S. Sichuan, and is described as a new subspecies in this paper.
**Diagnosis:** The new subspecies can be distinguished from the nominate *armandina* Orth. by the combination of the following characters:

1. The new subspecies is smaller in size.
2. DFW postdisal band is very obscure, whereas it is distinguishable in the nominate *armandina* Orth.
3. VFW postdisal band and discal cell bar are obscure, whereas they are creamy white in the nominate *armandina* Orth.

The new subspecies can be distinguished from *Lethe jianqingi* Lang stat. nov. by the combination of the following characters:

1. Ground colours of DFW & DHW are paler than *L. jianqingi* Lang.
2. DFW postdisal band, which is present in *L. jianqingi* Lang, is absent.
3. Tip of valva in dorsal view is more pointed (fig. 28 B), whereas it is round in *L. jianqingi* Lang (fig. 28 A).
4. Dorsal ridge of uncus is thicker than that of *L. jianqingi* Lang.

**Etymology:** The subspecific name *yangbiana* is named after the type locality, Yanbian County in S.W. Sichuan.

**Distribution:** China (S.W. Sichuan).

*Lethe gregoryi* Watkins, 1927 (figs. 15, 16)


According to Lang (2015 b), *Lethe gregoryi* Watkins is a species known from N. Yunnan and with its subspecies *L. gregoryi* *gesangdawai* Huang, 2001 from NW. Yunnan and S.E. Tibet. It is the first confirmed record of this species from C. Sichuan fauna.

**Material:** 1♂, China, Sichuan, Shimian, Menghuo-cheng, 2600-2770 m, 23.VI.2016, leg. SONG-YUN Lang.

**Distribution:** China (N.W. Yunnan, S. Sichuan).

**Acknowledgements:** I express my sincere thanks to Mr. Vadim V. Tshikolovets (Kiev), Dr. Ulf Eitscherber (Marktleuthen), Mr. Gian C. Bozano (Milano), Mr. Huang Hao (Qingdao), Dr. Wang Chun-Hao and Gen. Luo Jian (Beijing), Mrs. Hou Jiang (Chongqing), Mr. Gu Xiao-Dong (Forestry Department of Sichuan Province, Chengdu), Mr. Tang Bo (Liziping National Nature Reserve, Shimian), Mr. Zheng Chao-Yan (Gesala Park, Yanbian) and my father Mr. Lang Yi (Chengdu) for their various help. This study is partly supported by CNBM Project of China Ministry of Environmental Protection and the Excellent Youth Training Project of Chongqing Municipal Culture Commission, the 3rd batch (No. 2016QNWHYC30).

**References**


Table 1. Measurement of Androconia of *Lethe nigrifascia* **Leech**-group. AL = Androconium Length (means ± standard deviation, SD); AB = Androconium Breadth (means ± SD); Shape ratios RLB = Ratio of AL/AB (means ± SD); N = Number of androconia measured for each taxon.

<table>
<thead>
<tr>
<th>Taxon</th>
<th>AL (um)</th>
<th>AB (um)</th>
<th>RLB</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>nigrifascia</em></td>
<td>154.90 ± 7.26</td>
<td>20.85 ± 1.40</td>
<td>7.46 ± 0.55</td>
<td>10</td>
</tr>
<tr>
<td><em>liyufeii</em></td>
<td>204.35 ± 16.46</td>
<td>21.00 ± 2.84</td>
<td>9.92 ± 1.64</td>
<td>10</td>
</tr>
<tr>
<td><em>luojiani</em></td>
<td>163.60 ± 5.55</td>
<td>14.50 ± 1.91</td>
<td>11.50 ± 1.67</td>
<td>10</td>
</tr>
<tr>
<td><em>ebiana</em></td>
<td>149.00 ± 6.91</td>
<td>30.30 ± 4.82</td>
<td>5.02 ± 0.68</td>
<td>10</td>
</tr>
<tr>
<td><em>lojishana</em></td>
<td>149.70 ± 2.32</td>
<td>22.60 ± 0.97</td>
<td>6.64 ± 0.37</td>
<td>5</td>
</tr>
<tr>
<td><em>baoshana</em></td>
<td>142.60 ± 8.15</td>
<td>27.15 ± 3.37</td>
<td>5.32 ± 0.62</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 2. Biology features of *Lethe nigrifascia* **Leech**-group.

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Share habitat with</th>
<th>Flight period</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>nigrifascia</em></td>
<td><em>liyufeii</em>, <em>luojiani</em></td>
<td>late July - August</td>
</tr>
<tr>
<td><em>liyufeii</em></td>
<td><em>nigrifascia</em> and <em>luojiani</em> in S. Shaanxi,</td>
<td>late June - late July</td>
</tr>
<tr>
<td></td>
<td><em>ebiana</em> in C. Sichuan</td>
<td></td>
</tr>
<tr>
<td><em>luojiani</em></td>
<td><em>nigrifascia</em>, <em>liyufeii</em></td>
<td>June - early July</td>
</tr>
<tr>
<td><em>ebiana</em></td>
<td><em>liyufeii</em></td>
<td>June - middle July</td>
</tr>
<tr>
<td><em>lojishana</em></td>
<td>-</td>
<td>June</td>
</tr>
<tr>
<td><em>baoshana</em></td>
<td>-</td>
<td>June - early July</td>
</tr>
</tbody>
</table>

Fig. 1, 2: *Lethe luojiani* LANG & WANG, 2016, ♀, China, Shaanxi, Ningshan, dorsal- and ventral side.
Fig. 3, 4: *Lethe baoshana* (HUANG, WU & YUAN, 2003) comb. nov., ♀, China, Sichuan, Yanbian, dorsal- and ventral side.
Fig. 5: *Lethe nigrifascia ebiana* LANG, 2015, HT ♀, China, Sichuan: Ebian, dorsal- and ventral side.
Fig. 6: *Lethe nigrifascia ebiana* LANG, 2015, †, China, Sichuan: Shimian, dorsal- and ventral side.
Fig. 7, 8: *Lethe nigrifascia luojishana* subsp. nov., HT ♀, China, Sichuan: Puge, dorsal- and ventral side.
Fig. 9, 10: *Lethe armandina yanhiana* subspec. nov., HT ♂, China, Sichuan, Yanbian, dorsal- and ventral side.
Fig. 11: *Lethe armandina* (Oberthür, 1881), ♂, China, Sichuan: Ebian, dorsal- and ventral side.
Fig. 12: *Lethe jianqingi* Lang, 2016 stat. nov., HT ♂, China, Sichuan, Puge, dorsal- and ventral side.
Fig. 13, 14: *Lethe jianqingi* Lang, 2016 stat. nov., ♀, China, Sichuan, Yanbian, dorsal- and ventral side.
Fig. 15, 16: *Lethe gregoryi* Watkins, 1927, ♂, China, Sichuan, Shimian, dorsal- and ventral side.
Fig. 17: Map. A - Distribution map of the *Lethe nigrifascia* Leech, 1890-group; B - Distribution map of *L. armandina* (ÖRTHUR, 1881) and *L. jianqingi* LANG, 2016 stat. nov.
Fig. 18: Androconium of *Lethe nigrifascia* Leech, 1890-group.

Fig. 19: Androonia. a - *Lethe nigrifascia* Leech, 1890, China, Hunan, Guzhang; b - *L. luojiani* Lang & Wang, 2016, China, Shaanxi, Ningshan; c - *L. nigrifascia ebiana* Lang, 2015, PT, China, Sichuan, Ebian; d - *L. nigrifascia lojishana* subspec. nov., HT, China, Sichuan, Puge; e - *L. baoshana* (Huang, Wu & Yuan, 2003) comb. nov., China, Sichuan, Yanbian; f - *L. jianqingi* Lang, 2016 stat. nov., HT, China, Sichuan, Puge.
Fig. 20: ♂ genitalia of *Lethe luojiani* LANG & WANG, 2016 in lateral view with left valva removed, HT, China, Shaanxi, Fengxian.
Fig. 21: ♂ genitalia of *Lethe nigrifascia ebiana* LANG, 2015 in lateral view with left valva removed, HT, China, Sichuan, Ebian.
Fig. 22: ♂ genitalia of *Lethe baoshana* (HUANG, WU & YUAN, 2003) in lateral view with left valva removed, China, Sichuan, Yanbian.
Fig. 23: ♂ genitalia of *Lethe nigrifascia lojishana* subspec. nov. in lateral view with left valva removed, HT, China, Sichuan, Puge.

Fig. 25: ♂ genitalia of *Lethe jianqingi* LANG, 2016 stat. nov. in lateral view with left valva removed, China, Sichuan, Yanbian.
Fig. 26: ♂ genitalia of *Lethe armandina yantiana* subspec. nov. in lateral view with left valva removed, HT, China, Sichuan, Yanbian.
Fig. 27: ♂ genitalia of *Lethe armandina* (OBERTHÜR, 1881) in lateral view with left valva removed, China, Sichuan, Ebian.
Fig. 28: Tip of the ♂ valva in dorsal view. A - *Lethe jianqingi* LANG, 2016 stat. nov., China, Sichuan, Yanbian; B - *Lethe armandina yantiana* subspec. nov., HT, China, Sichuan, Yanbian; C - *Lethe armandina* (OBERTHÜR, 1881), China, Sichuan, Ebian.
Fig. 29: Biotopes and several interesting butterflies collected in 2016. a - Liziping, 2700 m, Shimian, C. Sichuan; b - Menghuo-cheng, 2770 m, Shimian, C. Sichuan; c - Chonala irene Bozano & DeLLa BRUNA, 2006, ♂, in net, Liziping, 2500 m, Shimian, C. Sichuan; d - Mt. Luojishan, 2600 m, Puge, S.W. Sichuan; e - Lethe ramadeva (De Niceville, 1887), ♀, in net, Mt. Luojishan, 2600 m, Puge, S.W. Sichuan; f - Gesala, 3000 m, Yanbian, S.W. Sichuan; g - Lethe gracilis (Oberthur, 1886), ♀, in net, Gesala, 3000 m, Yanbian, S.W. Sichuan; h – South slope of Mts. Qinling, 1900 m, Ningshan, S. Shaanxi; i - South slope of Mts. Dabashan, 1700 m, Nanjiang, N. Sichuan.
Study on *Lethe helle* (Leech, 1891) and *L. uemurai* (Sugiyama, 1994) with description of a new subspecies from S.W. China

(Lepidoptera, Nymphalidae, Satyrinae)

by

**SONG-YUN LANG**

received 26.VIII.2016

Abstract: *Lethe helle* (Leech, 1891) and its closely related species *L. uemurai* (Sugiyama, 1994) are studied in this paper. A new subspecies, *L. helle yi ii subspec. nov.* from S.W. Sichuan Province, China, is described and illustrated. Androconia of *L. uemurai* (Sugiyama, 1994) are studied and illustrated for the first time. A distribution map of the above mentioned taxa is provided.

Introduction: *Lethe* (*Zophoessa*) *helle* (Leech, 1891), with only the nominate subspecies, has been known from Sichuan Province, SW China, and a former subspecies *L. helle gregoryi* Watkins, 1927 (*Watkins, 1927; d’Abrera, 1990; Bozano, 1999*) from N. Yunnan Province was raised to a specific status by Lang (2015 b). The typical form of *L. helle* (Leech) resides in C. Sichuan, an area including Wa-shan, Omei, Ebian and Dayi, and a disjunct population from Gesala, Ynnian, S.W. Sichuan, which is contiguous with N. Yunnan, was mentioned by Lang (2015 b). According to Lang (2015 b), *L. helle* (Leech) from S.W. Sichuan is apparently quite different from *L. gregoryi* Watkins and yet exhibits some subspecific differences from the nominotypical *L. helle* (Leech) from C. Sichuan. In this paper, the author describes the disjunct population of *Lethe helle* (Leech) from S.W. Sichuan as a new subspecies.

*L. uemurai* (Sugiyama, 1994) is superficially very similar to *L. helle* (Leech), but it has visible † brands on veins 1, 2 and 3 on the forewing upperside, which are absent on forewing of *L. helle* (Leech). The † brand is composed of dense androconia, and according to Wakeham-Dawson & Kundrana (2000), androconia are used currently as a morphological indicator of taxonomic status and appears to be relatively consistent in overall size and shape within species. In this paper, the morphology of androconia of *L. uemurai* (Sugiyama) is studied for the first time, but androconia cannot be found on the wings of *L. helle* (Leech), in which a † brand is absent.


*Lethe helle* (Leech, 1891) (figs: 3, 4, 8, 10 b)

*Zophoessa helle* Leech, 1891, Entomologist 24 (Suppl.): 1. Type locality: Wa-shan.

Material: 34♂♂, 1 ♀, China, Sichuan, Ebian, Heizhugou, 1800-3000 m, 21.VI.2014, 14.-18.VII.2014, leg. Yi Lang & Song-Yun Lang; 2♂♂, China, Sichuan, Omei, Leidongping, 2430 m, 6.VIII.2014, leg. Si-Yao Huang; 5♂♂, China, Sichuan, Shimian, Liziping, 2500-2700 m, 22.VI.2016, leg. Song-Yun Lang; 3♂♂, China, Sichuan, Shimian, Menghuo-cheng, 2600-2770 m, 23.VI.2016, leg. SONG-YUN LANG; 1♂, China, Sichuan, Dayi, Xiling Xueshan, 1500 m, 22.VII.2014, leg. Si-Yao Huang.

Distribution: China (C. Sichuan).

*Lethe helle yi ii subspec. nov.* (figs: 1, 2, 7, 10 a)


Diagnosis: The new subspecies can be distinguished from *L. helle* Leech by the combination of the following characters:
1. Both surfaces of the forewing, the yellowish postdiscal spots in spaces 3 and 4 have their inner edges straight, whereas in *L. helle* Leech they form sharp regular angles towards the base.
2. Both surfaces of forewing, the yellowish postdiscal spots in spaces 3 and 4 are fused together, whereas in *L. helle* Leech they are well separated.
3. Under surface of both wings, the ground colours are deeper than those of *L. helle* Leech.
4. Under surface of hindwing, violet lines and markings are deeper than those of *L. helle* Leech.
5. The uncus is thin, whereas in *L. helle* Leech its dorsal ridge is rather swollen.

Etymology: The specific name *yi ii* is named after Mr. Lang Yi, my father, patron and companion of many interesting surveys in W. China.

Habitat: The habitat, alt. 2700-3000 m, is mountainous woodland of tall conifers, rhododendrons, alpine oaks (*Quercus*) and dwarf bamboos, the food plants of larvae of the genus *Lethe* Hubner, 1819. From July to early August, *L. helle yi ii subspec. nov.* flies together with the following congeneric taxa in this habitat, including *L. proce* (Leech),


Lethe uemurai (Sugiyama, 1994) (figs: 5, 6, 9, 10 c, 11)


Androconia (fig: 11): Each androconium of this species consists of three parts, from top down: the apical spines, the lamina and the basal stalk. Apical spines are mostly four and occasionally five in number. The lamina is long and narrow, nearly fusiform shaped.

Material: 1 φ, 1 ♀, China, Shaanxi, Fengxian, 1800-2200 m, 29 VII.2010, leg. YU-FEI LI; 1 φ, China, Shaanxi, Ningshan, 2200-2400 m, 16 VII.2006, leg. YU-FEI LI; 1 ♀, China, Shaanxi, Foping, 16 VII.2014, leg. WEN-HAO SUN; 1 φ, China, Gansu, Tewo, Lazikou, Meilu-gou, 2600 m, 21 VII.2015, leg. GUO-XI XUE; 2 φ♂, China, Gansu, Wenzian, Qijuiba, 2200 m, 5 VII.2015, leg. ZI-HAO LIU; 1 ♀, China, Gansu, Tanchang, Guan-e-gou, 2100 m, 4 IX.2015, leg. SONG-YUN LANG; 1 ♀, China, Sichuan, Jiuzhaigou, Zhangzha, 2210 m, 30 VIII.2015, leg. SONG-YUN LANG.

Distribution: China (S. Shaanxi, S. Sichuan, N. Yunnan).

Discussion: Biogeographically, Sichuan Province shares a similar fauna with S.E. Gansu and S. Shaanxi Provinces, and Sichuan Province shares the same fauna with N. Yunnan Province. The distribution of Lethe helle (EECH) and L. uemurai (SUGIYAMA) also accords with this faunistic pattern. According to the distribution map (fig: 12), L. helle helle (LECH) occurs only in C. Sichuan with its subspecies L. helle yii subspec. nov. from S. Sichuan, while L. uemurai (SUGIYAMA) is a replacement species of L. helle (LECH) in the fauna of N. Sichuan, S.E. Gansu and S. Shaanxi. Moreover, the distribution of L. helle yii subspec. nov. in N. Yunnan is also expected.

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References


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Fig. 1, 2: *Lethe helle yii* subspec. nov., HT ♂, China, Sichuan, Yanbian, dorsal- and ventral side.
Fig. 3, 4: *Lethe helle helle* (Leech, 1891), ♂, China, Sichuan, Ebian, dorsal- and ventral side.
Fig. 5, 6: *Lethe uemurai* (Sugiyama, 1994), ♂, China, Shaanxi, Fengxian, dorsal- and ventral side.
Fig. 7: ♂ genitalia of *Lethe helle yii subsp. nov.*, in lateral view with left valva removed, PT, China, Sichuan, Yanbian.
Fig. 8: ♂ genitalia of *Lethe helle helle* (Leech, 1891) in lateral view with left valva removed, China, Sichuan, Ebian.
Fig. 9: ♂ genitalia of *Lethe uemurai* (SugiYama, 1994) in lateral view with left valva removed, China, Shaanxi, Fengxian.
Fig 10: Tip of the male valva in dorsal view: a: *Lethe helle yii subsp. nov.*, PT, Sichuan, Yanbian; b: *Lethe helle helle* (Leech, 1891), Sichuan, Ebian; c: *Lethe uemurai* (SugiYama, 1994), Shaanxi, Fengxian.

Fig. 11: Androconia of *Lethe uemurai* (SugiYama, 1994). A: Tewo, Gansu; b: Fengxian, Shaanxi.

Fig. 12: Map of S.W. China with distribution records of *Lethe helle* (Leech, 1891) and *Lethe uemurai* (SugiYama, 1994).