

New or little known butterflies from China

(Lepidoptera: Nymphalidae et Lycaenidae)

by

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received 11.IV.2014

Abstract: *Lethe liyufei* spec. nov. is described from western Sichuan, Shaanxi and Henan. *Lethe lisuae* (HUANG, 2002) comb. nov. (= *Zophoessa lisuae* HUANG, 2002) is rediscovered and confirmed to be a good species, with 5 ♂♂ more, collected from Gongshan area, NW Yunnan. *Lethe neofasciata* LEE, 1985 is discovered from Luojishan, Xichang area, southern Sichuan. *Lethe ocellata* POUJADE, 1885 is discovered from southeastern Yunnan, with *Lethe ocellata mon* YOSHINO, 2008 considered as a new junior synonym. *Lethe yoshikoe* (KOIWAYA, 2011) comb. nov. (= *Zophoessa yoshikoe* KOIWAYA, 2011) is rediscovered from West Tianmushan, Zhejiang Province, with 6 ♂♂ collected. *Zophoessa zhang* HUANG, WU & YUAN, 2003 is considered as a new junior synonym of *Lethe lee* ZHAO & WANG, 2000 stat. nov. (= *Lethe helle lee* ZHAO & WANG, 2000). *Lethe yunnana bozanoi* subspec. nov. is described from Shaanxi Province. *Minois pauper liuyei* subspec. nov. is described from Lijiang, NW Yunnan. *Polycaena matuta shii* subspec. nov. is described from central Tibet.

Introduction: Most of the butterflies reported in this paper were collected by the author from the Provinces of Zhejiang, Hubei, Shaanxi, Sichuan, and Yunnan in 2004-2013; the others were collected by some friends of the author.

Abbreviations:

BSNU	Biological laboratory of Shanghai Normal University, Shanghai, P.R. China.
CGB	Collection of G. Bozano.
CHH	Collection of Hao Huang.
CLSY	Collection of Song-Yun Lang.
CLYF	Collection of Yu-Fei Li.
CXGX	Collection of Guo-Xi Xue
CZJQ	Collection of Jian-Qing Zhu.
HT	Holotype
ICZN	International Code of Zoological Nomenclature, Fourth Edition.
IZAS	Institute of Zoology, Chinese Academy of Science, Beijing, P.R. China.
PT	Paratype

Nymphalidae

Lethe liyufei spec. nov.

Lethe nigrifascia ab. *fasciata* SEITZ, 1909: 86, plate 31 d. Infrasubspecific.

Lethe nigrifascia var. *fasciata*: GAEDE, 1931: 302, catalogue.

Lethe nigrifascia f. *fasciata*: D'ABRERA, 1990: 122.

Lethe nigrifascia: D'ABRERA, 1990: 123, figure for verso surface of ♂; CHOU & al., 1994: 334, figures for ♂ and ♀ from Henan; HUANG, 1999: 129-131, figs. 1b for genitalia, figs. 2b, 3b for ♂♂ from Henan; WANG & ZHAO, 2000: 61, partim, figures for ♂ from Shaanxi.

Zophoessa nigrifascia: HUANG, WU & YUAN, 2003: 148, partim for specimens from Henan, figs. 3, 4 for ♂ genitalia, fig. 11G for androconia, colour plate 12, fig. 2 for ♂.

Zophoessa nigrifascia f. *fasciata*: HUANG, WU & YUAN, 2003: 148.

HT ♂ (fig. 1, BSNU): China, Sichuan Province, Ganzi Tibetan Autonomous Prefecture, Moxi Town, Hailuoguo, 2000m, 15.VII.2011, HAO HUANG leg.

PTs: Henan: 4 ♂♂ (fig. 2, CHH), Luan-chuan, Y. Niu leg.; Shaanxi: 1 ♂ (CLSY), Ningshan County, Guang-huo-jie, 1300-1700 m, 14.VII.2012, Y.-F. Li leg.; 1 ♂ (fig. 4, CLYF), Ningshan County, Guang-huo-jie, 1300-1700 m, 16.VII.2006, Y.-F. Li leg.; 1 ♂ (CLYF), Ningshan County, Xunyangba, 16.VI.2012, Y.-F. Li leg.; 3 ♂♂, 4 ♀♀ (figs. 3, 9, CLYF, CHH), Fengxian County, head waters of Jia-ling River, 5.VII.2009 and 27.-29.VII.2010, Y.-F. Li leg.; 1 ♂, 1 ♀ (CLYF), Taibai County, Da-ling-yun-hai, 2.VIII.2010, Y.-F. Li leg.; 2 ♂♂, 2 ♀♀ (CLYF), Chang-an County, Qin-ling-liang, 16.VII.1995 and 6.VII.2013, Y.-F. Li leg.; 1 ♀ (fig. 10, CLYF), Huxian, Zhuque Forest Park, 30.VI.2009, Y.-F. Li leg.

Etymology: This new species is named in honour of Mr. YU-FEI LI, whose marvelous butterfly collection makes the research on this new species possible.

Diagnosis: This new species can be distinguished from *Lethe nigrifascia* LEECH, 1890 by the following combination of characters.

1. ♂-brand constantly narrower.
2. Androconia (fig. 33) in ♂-brand constantly longer and less transparent than in *L. nigrifascia* LEECH (fig. 33).

3. Tip of valva in dorsal view (fig. 34) with clear teeth along the inner margin, not smooth as in *L. nigrifascia* LEECH (fig. 35).
4. Aedeagus in lateral view (fig. 36) with dorsal ridge concaved just before caudal end, not flat as in *L. nigrifascia* LEECH (fig. 37).
5. Size of ♂ genitalia (fig. 38) usually larger than that of *L. nigrifascia* LEECH (fig. 39).
6. Hindwing underside of ♀ (figs. 9-10) with basal and discal areas browner and less yellowish in ground colour, and with the two waved subbasal lines broader than in *L. nigrifascia* LEECH (figs. 11-12).

Discussion: This new species had been identified as *L. nigrifascia* LEECH for a long time; some authors (SEITZ, 1909; D'ABRERA, 1990; HUANG & al., 2003) regarded it as an aberration or a form of *L. nigrifascia* LEECH. HUANG & al. (2003) found that the androconia in specimens of *f. fasciata* are constantly longer and narrower than those in “normal” specimens of *L. nigrifascia* LEECH with broad ♂-brand, but such observations are confined to very few specimens. An examination of more specimens from various localities confirmed such difference in androconia between the new species and *L. nigrifascia* LEECH to be constant, and there are also constant differences in the ♂ genitalia between them (figs. 34-37). Moreover, Mr. Y.-F. LI collected both species from a locality at Shaanxi Province, “Guang-huo-jie” of Ningshan County, and found that the two species are different in flight period in this locality: the new species flies from mid June to mid July, whilst *L. nigrifascia* LEECH flies only in mid August. Several ♂♂ specimens of both species from this sympatric locality (Guang-huo-jie) have been examined in characters of androconia (fig. 33) and ♂ genitalia (figs. 34-37), showing the two species are clearly separable in these characters.

The type specimens of *L. nigrifascia* LEECH, consisting of 2 ♂♂, 1 ♀ (LEECH, 1890), are all from Changyang, Hubei. LEECH (1892) illustrated a pair of *L. nigrifascia* LEECH, of which the ♂ possesses a broad ♂-brand on the forewing upperside whilst the ♀ has a very yellow ground colour on the hindwing underside; these characters in Leech's illustrations fit the taxon, *L. nigrifascia* LEECH in our sense. SOUTH (1902) located only two type specimens of *L. nigrifascia* LEECH in LEECH's collection, both from Changyang, i.e. “Type. i. ♂” and “Type. j. ♀”. These two syntypes are now kept in the BMNH and of both of them were taken photos and published by D'ABRERA (1990); they fit LEECH's (1892) figures and also fit the taxon, *L. nigrifascia* LEECH in our sense. Since all the syntypes of *L. nigrifascia* LEECH are collected from Changyang, Hubei and proved to be the same species, there is no necessity to make a lectotype designation at present. Hitherto the new species has not been found from the area around Changyang and Shennongjia, Hubei.

Nomenclature: According to Article 45.6.2 of ICZN, the name *fasciata* in *Lethe nigrifascia* ab. *fasciata* SEITZ (1909) is infrasubspecific. According to Article 45.5.1 of ICZN, this infrasubspecific name cannot be made available from its original publication by any subsequent action (such as “elevation in rank”) except by a ruling of the Commission. Article 45.5.1 also states that when a subsequent author applies the same word to a species or subspecies in a manner that makes it an available name [Articles 11-18 of ICZN], even if he or she attributes authorship of the name to the author of its publication as an infrasubspecific name, that subsequent author thereby establishes a new name with its own authorship and date. The name *fasciata* was subsequently stated as *Lethe nigrifascia* var. *fasciata* GAEDE, 1931 in his catalogue by GAEDE (1931), without any description or discussion; this action is at most an “elevation in rank”, not making an available name under Articles 11-18 of ICZN. Therefore GAEDE (1931) did not make the name *fasciata* available. All the later authors (D'ABRERA, 1990; HUANG & al., 2003), involved in this name, did not make this name available under Articles 11-18 of ICZN, and they used “f.” or “form” in their statement and their actions were after 1960.

Distribution: The following specimens of *L. nigrifascia* LEECH have been examined: 2 ♂♂, 2 ♀♀ from Shennongjia Nature Reserve, Hubei Province; 3 ♂♂ from Guanghuojie, Ningshan, Shaanxi Province; 1 ♂ from Hanyin, Shaanxi Province; 1 ♂ from Sangzhi, Hunan Province; 1 ♂ from Mt. Fanjingshan, Guizhou Province.

The new species seems to be widely distributed from southern Henan through southern Shaanxi to western Sichuan, whilst *L. nigrifascia* LEECH is distributed in northeastern Guizhou, northern Hunan, Hubei, southern Shaanxi and northern Sichuan [1 ♂ of *L. nigrifascia* LEECH was recorded and illustrated from Maowen by BOZANO (1999)]. These two species are sympatric in southern Shaanxi and probably also in Sichuan, but seem to be allopatric in other Provinces (Hubei, Hunan and Henan).

Generic classification: There is no evidence to prove that the genus *Zophoessa* is basal on the phylogenetic tree of the species of both genera *Zophoessa*, and *Lethe*, thus it is more reasonable to use the genus *Lethe* to include all species of *Zophoessa*, though the genus *Zophoessa* is most likely monophyletic.

Lethe ocellata POUJADE, 1885

Lethe ocellata POUJADE, 1885: 10, Mou-pin (Baoting); DRAESEKE, 1925: 52, Wa-ssu-kou (Wasigou).

Lethe simulans LEECH, 1890: 23, Omei-shan, Pu-tsu-fong (now Xinxing).

Zophoessa ocellata: DE LESSE, 1957: 78; HUANG & al., 2003: 145, Panzhihua, S. Sichuan.

Lethe ocellata mon YOSHINO, 2008 **syn. nov.**: 10, Sapa, North Vietnam.

Only the literature with new localities recorded are cited above. Two ♂♂ (fig. 13) were collected by the author from Fenshuiling Nature Reserve, Jinping County in the extreme southeast of Yunnan in early June, 2011. This population is very close in geography to the population of *L. ocellata mon* YOSHINO, 2008 **syn. nov.** from northern Vietnam. However, the population from Vietnam, as illustrated by Yoshino (2008), is not separable from the populations from western Sichuan, and the taxon does not merit being retained in taxonomy. The specimen illustrated by Yoshino (2008) from Sichuan is a pale form. Some ♂ specimens from Omeishan, Sichuan (fig. 14), in the author's collection, are not separable from the specimens from southeastern Yunnan (fig. 13) and Vietnam. The author has examined 14 ♂♂ from Omeishan collected by himself in August, 2011 and 2012, and 1 ♀ from Tianquan, in addition to 2 ♂♂ collected from

Panzhihua, southern Sichuan. The androconia (fig. 33) and the ♂ genitalia of the specimens from southeastern Yunnan have been examined and show no difference from those from western Sichuan.

***Lethe yoshikoe* (Koiwaya, 2011) comb. nov.**

Zophoessa yoshikoe Koiwaya, 2011: 41, type locality: Dayaoshan, Guangxi, figs. 1,2,7,8,13, 16.

6 ♂♂ (fig. 16) were collected by the author from W. Tianmu-shan, Zhejiang in July-August, 2007 and 2008. The ♂ genitalia (fig. 40) have been examined and fit the original description and figure of *L. yoshikoe* (Koiwaya). 1 ♂ of *L. labyrinthea* Lee, 1890 collected from Shennongjia, Hubei (figs. 15, 41), was examined for a comparison. The differences between the two species in ♂-brand, underside ground colour, width of postdiscal band on the hindwing underside and the outer cell stripe on the forewing underside are variable and not constant. The most useful diagnostic character is the shape of the postdiscal band on hindwing underside, which is bent at a right angle in space m2 in *L. labyrinthea* Lee but at an obtuse angle in *L. yoshikoe* (Koiwaya).

***Lethe lee* Zhao & Wang, 2000 stat. nov.**

Lethe helle lee Zhao & Wang, in Wang & Zhao, 2000: 44, Ningshan, Shaanxi, figs. for ♂ HT.

Zophoessa zhang Huang, Wu & Yuan, 2003 syn. nov.: 151, Lixian, Sichuan, fig. 2 for ♂ genitalia, fig. 11J for androconia, colour plate 12, figs. 7, 8 for HT.

Huang & al. (2003), when publishing the new species, overlooked the publication by Wang & Zhao (2000). Mr. YU-FEI LEE collected several ♂♂ from Ningshan County, Shaanxi Province, and kindly sent the 1 ♂ to the author. The examination of these newly collected specimens from Shaanxi confirmed that the diagnostic characters described by Huang & al. (2003) are constant for this little known species.

***Lethe yunnana bozanoi* subspec. nov.**

Lethe yunnana: Bozano, 1999: 45, figs. for ♂, ♀ and ♂ genitalia, Xinglong, S. Gansu.

HT ♂ (fig. 18, BSNU): China, Shaanxi Province, Baoji City, Meixian County, Tangyu, Taibaishan Forest Park, Kaitianguan, 1800 m, 21.V.2008, HAO HUANG leg..

PTs: Shaanxi: 2 ♂♂ (CHH), same data as HT; 1 ♂ (CHH), Taibaishan, VI.1990, SHUI-GEN SHEN leg.; 2 ♂♂ (fig. 21, CXGX), Ningshan County, Xunyangba, Qiligou, 19.V.2011, GUO-XI. XUE leg.; 7 ♂♂ (CLYF, CLSY), Fengxian County, head waters of Jia-ling River, 19.VI.2010, Y.-F. LI leg.; 1 ♂ (CLYF), Huxian County, Laoyu, 6.VI.2009, Y.-F. LI leg.; 4 ♂♂ (CLYF), Ningshan County, Xunyangba, 19.V.2011 and 20.V.2012, Y.-F. LI leg.; 1 ♂ (CLYF), Ningshan County, Guang-huo-jie, VI.2012, Y.-F. LI leg.; 2 ♂♂ (CLYF), Chang-an County, Dayu, 14.VI.2009, Y.-F. LI leg.; 4 ♂♂, 1 ♀ (CGB), Fengxian County, head waters of Jia-ling River, N34°12'175" E106°51'002", 1.VI.2009. Gansu: 1 ♂, 1 ♀ (CGB), 50 km south of Tianshui, Xinglong, 1600 m, 2.VI.1991; 1 ♂ (CGB), 70 km west of Wudu, Minshan, 2700 m, 15.VI.2005. Sichuan: 1 ♂ (CGB, fig. 20), Jiuzhaigou, N 33°19'00" E 103°48'50", 2200 m, 19.VI.2004.

Etymology: This new subspecies is named in honor of Mr. GIAN CRISTOFFERO BOZANO, Italy, the editor of "Guide to the butterflies of the Palaearctic Region", who illustrated specimens of this taxon for the first time.

Diagnosis: This new subspecies (figs. 19-21) can be distinguished from the nominotypical subspecies of *Lethe yunnana* D'ABRERA, 1990 from Yunnan (figs. 17, 18) by the following combination of characters.

1. Hindwing with a shorter tail at vein M3.
2. Ciliae of both wings shorter, those of the forewing less whitish on the upperside.
3. Discocellular bar on the hindwing underside constantly longer.
4. Submarginal area in spaces m2-cu1 on the hindwing underside not suffused with whitish scales.
5. Postdiscal eyespots in spaces m3-cu2 on the hindwing underside closer to the outer margin of the hindwing.
6. Gnathos of ♂ genitalia (fig. 43) less swollen in the middle, with shorter irregular teeth along the dorsal ridge (fig. 42).

Discussion: The distribution of *L. yunnana* D'ABRERA jumps from northern Yunnan directly into the area around the borders between Shaanxi, Gansu and Sichuan. And the two taxa are well separated in several external characters and also in the gnathos of the ♂ genitalia. The true relationship between them needs a further investigation. On the other hand, specimens of *L. y. bozanoi* subspec. nov. from northern Sichuan already show some transitional characters to *L. y. yunnana* D'ABRERA, such as smaller and well separated eyespots on the hindwing underside.

***Lethe neofasciata* Lee, 1985**

Lethe neofasciata Lee, 1985: 193, plate 2, figs. 11, 12.

Lethe nujiangensis Yoshino, 1997: 2, figs. 34, 35, 58, 60; Huang, 2002: 365.

Zophoessa neofasciata: Huang, 2002: 365, plate 21, figs. 2, 6; Huang, 2003: 91, figs. 134, 135; Huang et al., 2003: 150, figs. 9, 11A, colour plate 12, figs. 3, 4 for type specimens; Koiwaya & Shizuya, 2011: 31, record for Kachin, Myanmar, figs. 3, 4.

1 ♂ (fig. 22) was collected by the author from Mt. Luojishan, Xichang, southern Sichuan in June 2012. The ♂ genitalia (fig. 46) and the androconia (fig. 33) are in common with those of specimens from Lushui in the Nujiang valley. This is the first record of this species from Sichuan.

***Lethe lisuae* (HUANG, 2002) comb. nov.**

Zophoessa lisuae HUANG, 2002: 365, plate 21, figs. 1, 5; Huang, 2003: 91, fig. 137 for ♂ genitalia; HUANG & al., 2003: 150, fig. 11B for androconia.

Lethe nujiangensis: SHIZUYA & al., 2005: 30, record from “Mt. Imaw Bum, Kachin, Myanmar, 35, figs. for ♂. Misidentification.

5 ♂♂ (figs. 23-24) were collected by Mr. JIAN-QING ZHU from the type locality (Gongshan area, northwestern Yunnan) in June, 2009. Two ♂♂ were dissected and their genitalia (figs. 44-45) are as in the HT. Thus the genital differences between *L. lisuae* HUANG and *L. neofasciata* LEE stated in the original description are constant and useful in distinguishing the species. The androconia (fig. 33) of these newly collected specimens were also investigated, some of them are identical to those of the HT, with a small basal process, but the others are identical to those of *Lethe neofasciata* LEE. Thus the androconia of these two species are not differentiated. The external differences between *L. lisuae* HUANG and *L. neofasciata* LEE are rather variable, and several characters should be used together for a sure identification as follows:

1. ♂-brand of *L. lisuae* HUANG is rather uniform among all the specimens examined, it is always complete (not interrupted or reduced), broad and clearly marked in sharp contrast with the brown ground colour of the forewing upperside; but ♂-brand of *L. neofasciata* LEE is rather variable in appearance, usually narrower than but occasionally as broad as that of *L. lisuae* HUANG, usually obscure in appearance but occasionally in sharp contrast with the ground colour.
2. Pale band between ante- and postdiscal bands in costal half of the hindwing underside is often suffused with violet scales in *L. neofasciata* LEE, but is never suffused with violet in *L. lisuae* HUANG.
3. Pale band between ante- and postdiscal bands in costal half of hindwing underside is always wider (counting the widest portion) in *L. lisuae* HUANG than in *L. neofasciata* LEE.
4. Ante- or postdiscal bands in costal half of hindwing underside can be markedly widened towards costa of hindwing in *L. neofasciata* LEE, but are rather even in width throughout in *L. lisuae* HUANG.
5. Black rings in submarginal eyespots on the hindwing underside are all clearly marked in *L. lisuae* HUANG, but can be partly obsolete or obscure in *L. neofasciata* LEE.

The unique holotype of *L. nujiangensis* YOSHINO, 1997 **syn. nov.** possesses the above-mentioned characters 1-5 for *L. neofasciata* LEE, thus it must be a synonym of *L. neofasciata* LEE. The ♂ specimen illustrated and identified by SHIZUYA & al. (2005) as *L. nujiangensis* YOSHINO possesses all the diagnostic characters for *L. lisuae* HUANG, thus this should be the first record of *L. lisuae* HUANG for the butterfly fauna of Myanmar.

The shape of the ♂-brand of *L. lisuae* HUANG is identical to that of *Lethe akibai* KOIWAYA & SHIZUYA, 2011 **comb. nov.** (= *Zophoessa akibai* KOIWAYA & SHIZUYA, 2011) from northern Myanmar. The length and the shape of the valva and the length of the uncus in the ♂ genitalia are similar to those of *L. akibai* KOIWAYA & SHIZUYA, 2011 **comb. nov.** However the tip of the uncus of *L. akibai* KOIWAYA & SHIZUYA, 2011 **comb. nov.** is broader and not sharply pointed as in *L. lisuae* HUANG. In wing-pattern, *L. akibai* KOIWAYA & SHIZUYA, 2011 **comb. nov.** has the postdiscal band of the hindwing underside markedly bent in space m1, whereas *L. lisuae* HUANG and *L. neofasciata* LEE have this band rather straight above vein Cu1. The ♂-brand of *L. neofasciata* LEE is very variable both individually and geographically, thus cannot be used as a good character to distinguish the species from its allies.

***Minois paupera liuyei* subsp. nov.**

HT ♂ (figs. 25, 26, BSNU): China, Yunnan Province, Lijiang, Yulongxueshan Mts., ca. 2500 m, 2.VIII.1992, HAO HUANG leg..

Etymology: This new subspecies is named in honor of Mr. YE LIU, Beijing who helped the author to collect many interesting butterflies.

Diagnosis: LANG (2013) just published a complete checklist of all the previously known subspecies of *Minois paupera* (ALPHERAKY, 1888), with the type localities clarified. The true taxonomic position of *Minois aurata* (OBERTHÜR, 1909) still needs a further research, and it is treated as a subspecies of *Minois paupera* (ALPH.) in this work, considering its allopatric distribution with all other taxa conspecific. The new subspecies from Lijiang, NW Yunnan, though based upon a1 ♂ only (figs. 25-26), is very peculiar in the wing-pattern. The author decided to describe it as new because the new material seems not to be easily collected in the near future and because this population is distributed far and away from all other subspecies and well isolated. It can be easily distinguished from all the previously known subspecies by the following combination of characters.

1. Yellow rings of the two large ocelli on the forewing underside broadly conjoined.
2. A broad, waved white band well marked on the hindwing underside.
3. A short white costal smudge is clearly marked in space r1 inside of the white discal band on the hindwing underside.

Remarks: The HT (figs. 25, 26) measures 30 mm in the forewing length, being intermediate among the known subspecies. The ♂ genitalia (fig. 49) are not different from those of all other subspecies illustrated in SUGIYAMA (1999) and LANG (2013). In addition for comparison, 1 ♂ of *M. paupera* (ALPH.) from Da-tong-shan, Qinghai (figs. 27, 47), and 1 ♂ of an undescribed subspecies from Chaya, eastern Tibet (figs. 28 & 48) are dissected.

Lycanidae

***Polycaena matuta shii* subsp. nov.**

HT ♀ (fig. 31, BSNU): China, Xizang, Linzhi (Nyingchi Prefecture), East of Mila Pass, Songduo Army Station, 4380 m, 2.VIII.1992, HAO HUANG leg..

PT: 1 ♀ (fig. 32, CHH), China, Xizang, east of Lhasa, Mozhugongka County, west of Riduo Village, on road of G318, 4512k (GPS: N29.70263, E92.21152), 4341 m, HONG-LIANG SHI leg.

Etymology: This new subspecies is named in honor of Dr. HONG-LIANG SHI, Beijing who helped the author to collect many interesting butterflies including a paratype of this new taxon.

Diagnosis: This new subspecies from the area around the border of Lhasa and Linzhi Prefecture, Tibet is well isolated from the nominotypical subspecies of *P. matuta* LEECH, 1893 from Kangding area, western Sichuan. It can be easily distinguished from the latter by the following combination of characters.

1. The upperside submarginal black spots remoter from the outer margins of both wings, causing the submarginal yellow bands much broader than in *P. m. matuta* LEECH.
2. All black markings on the upperside of both wings more or less smaller and less conjoined, leaving the areas in orange-yellow ground colour more extensive than in *P. m. matuta* LEECH.
3. Marginal black markings on the underside of both wings interrupted by white markings in each space, not conjoined into a continuous black band as in *P. m. matuta* LEECH; similarly the submarginal orange spots on hindwing underside interrupted by pale yellow ground colour on each vein, not conjoined into a continuous and waved orange band as in *P. m. matuta* LEECH.
4. All basal, subbasal and discal black spots on the hindwing underside clearly separated, not conjoined into a single marking as in *P. m. matuta* LEECH.
5. Pale ground colour of the hindwing underside more yellowish and less whitish than in *P. m. matuta* LEECH.

Remarks: The ♂ of this new subspecies is still unknown. Both subspecies have not been examined in the ♂ genitalia; the taxonomic relationship between them needs a further research when the ♂♂ are available.

Acknowledgements: Mr. JIAN-QING ZHU helped the author to collect the new material of *Lethe lisuae* HUANG from Yunnan. Mr. GIAN CRISTOFORO BOZANO, Italy allowed the author to check his collection of *Lethe yunnana* D'ABRERA from Gansu and Sichuan. Dr. HONG-LIANG SHI and Mr. YE LIU helped to collect the specimen of *Polycaena matuta* LEE from Tibet. Mr. YU-FEI LI, Dr. SONG-YUN LANG and Dr. GUO-XI XUE allowed the author to check their collections. Dr. YU-FENG HSU kindly sent the author a copy of WANG & ZHAO's book for his research.

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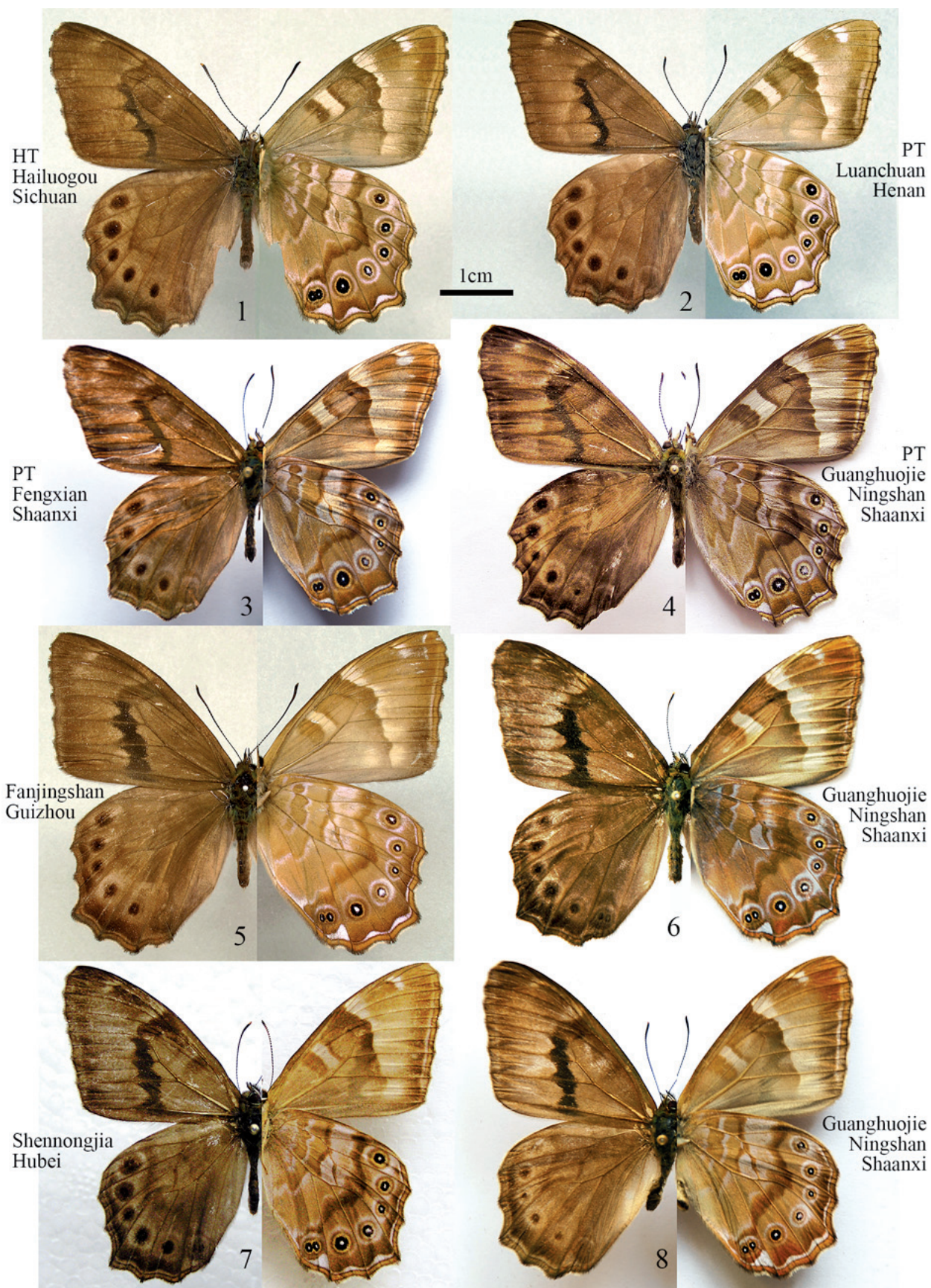
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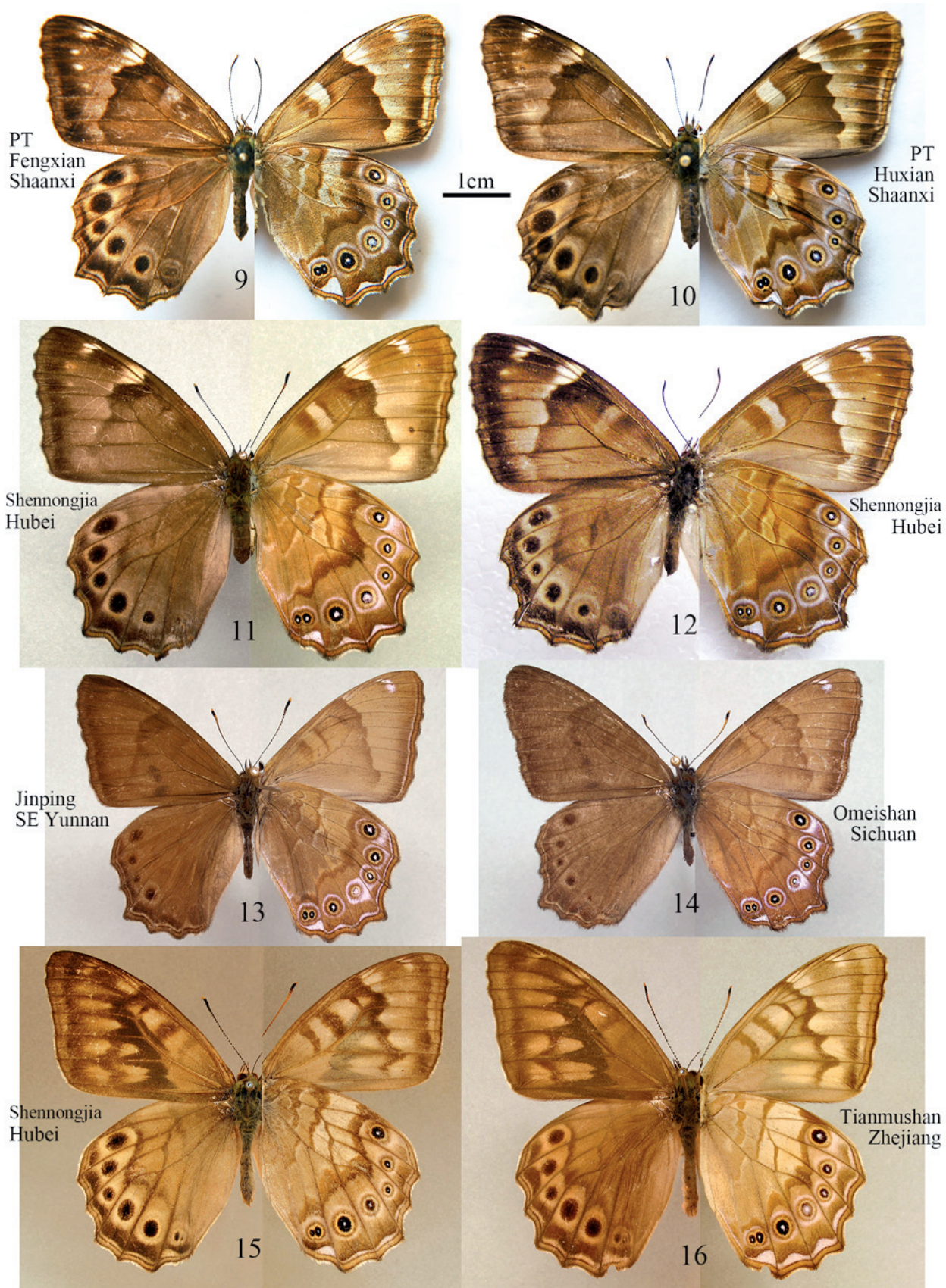
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Figs. 1-4: *Lethe liyufei* spec. nov., ♂♂, upper- (left half) and underside (right half).
Figs. 5-8: *Lethe liyufei* spec. nov., ♂♂, upper- (left half) and underside (right half).



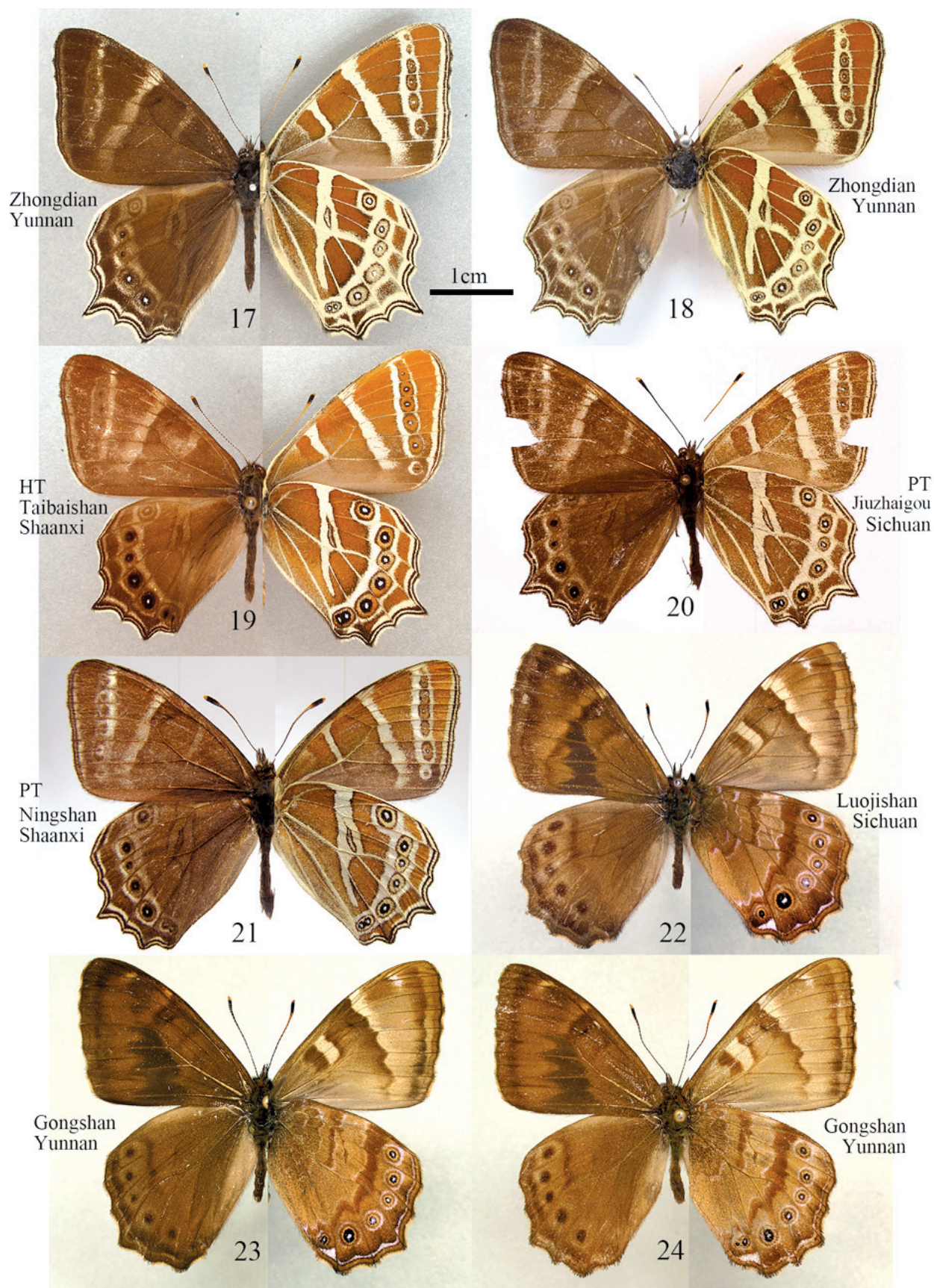
Figs. 9, 10: *Lethe liyufei* **spec. nov.**, ♀♀, upper- (left half) and underside (right half).

Figs. 11, 12: *Lethe nigrifascia* LEECH, 1890, ♀♀.

Figs. 13, 14: *Lethe ocellata* POUJADE, 1885, ♂♂.

Figs 15: *L. labyrinthica* LEECH, 1890, ♂.

Fig. 16: *Lethe yoshikoe* (Koiwaya, 2011) **comb. nov.**, ♂.

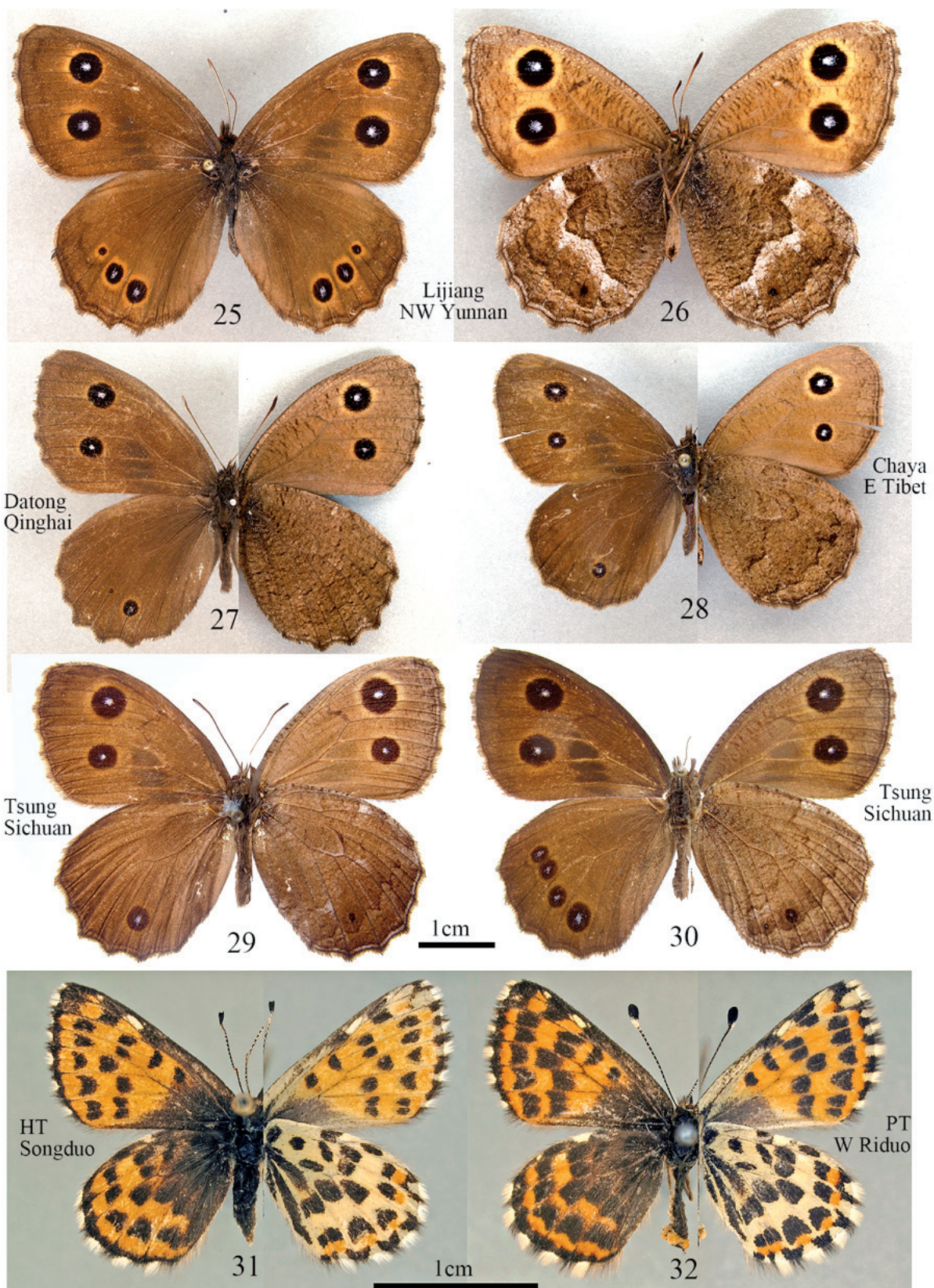


Figs. 17, 18: *Lethe yunnana yunnana* D'ABRERA, 1990, ♂♂, upper- (left half) and underside (right half).

Figs. 19-21: *Lethe yunnana bozanoides* subsp. nov., ♂♂.

Fig. 22: *Lethe neofasciata* LEE, 1985, ♂.

Figs. 23, 24: *Lethe lisuae* HUANG, 2002, ♂♂.



Figs. 25, 26: *Minois paupera liuyei* subsp. nov., HT ♂, upper- and underside.
 Fig. 27: *Minois paupera paupera* (ALPHERAKY, 1888), ♂, upper- (left half) and underside (right half).
 Fig. 28: *Minois paupera* subsp. incert., ♂.
 Figs. 29, 30: *Minois paupera astraea* (LEECH, 1892), ♂♂.
 Figs. 31, 32: *Polycaena matuta shii* subsp. nov., ♂♂, upper- (left half) and underside (right half).

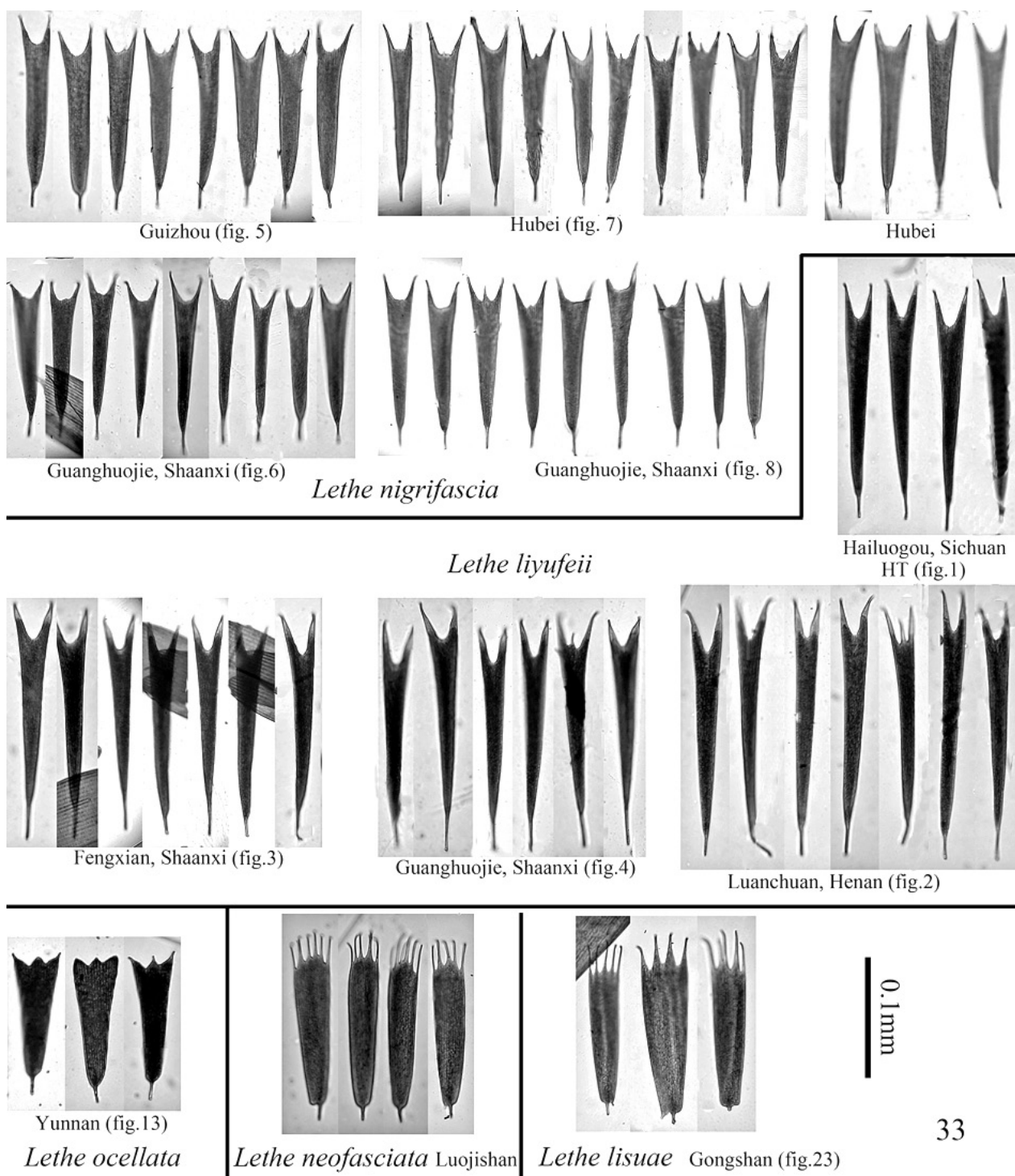
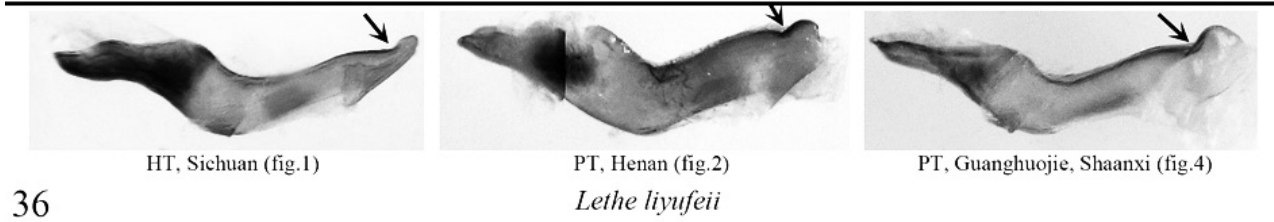
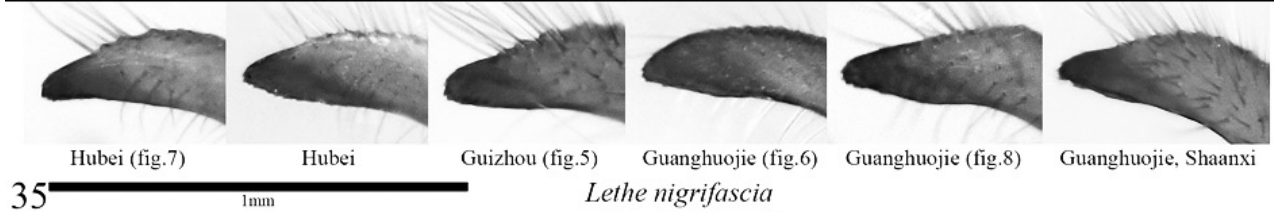
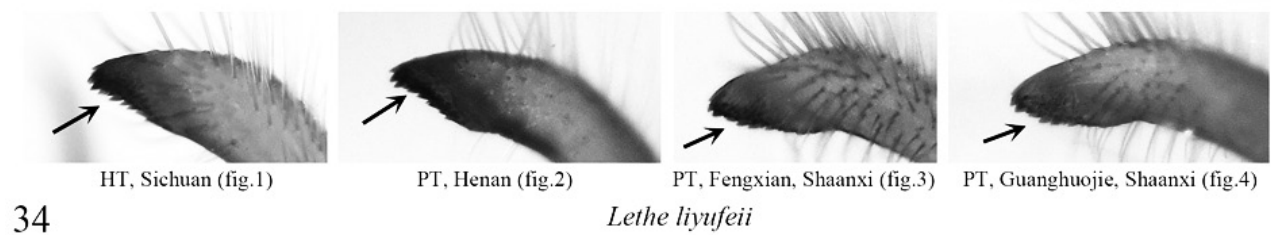


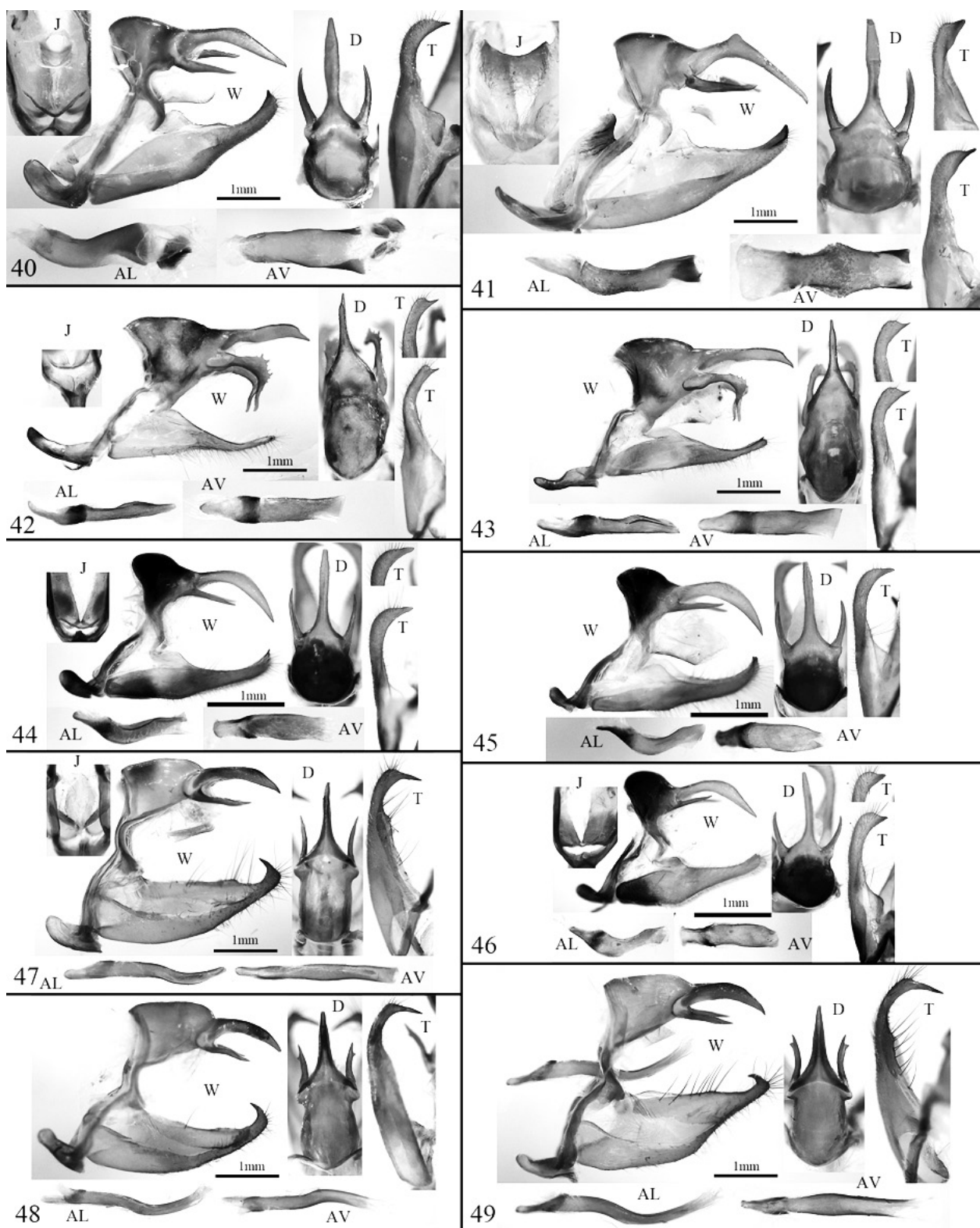
Fig. 33: Androconia of *Lethe* species under the same scale.



Figs. 34, 35: Tip of the right σ valva in dorsal view under the same scale, arrows directed to the difference between species. (34) *Lethe liyufei* spec. nov.; (35) *Lethe nigrifascia* LEECH, 1890.

Figs. 36, 37: Aedeagus in lateral view under the same scale, arrows directed to the difference between species. (36) *Lethe liyufei* spec. nov.; (37) *Lethe nigrifascia* LEECH, 1890.

Figs. 38, 39: σ genitalia in lateral view under the same scale, usually with aedeagus and left valva removed. (38) *Lethe liyufei* spec. nov.; (39) *Lethe nigrifascia* LEECH, 1890.



Figs. 40-49: ♂ genitalia consisting of the whole genitalia in lateral view (W), dorsum in dorsal view (D), juxta in posterior view (J), aedeagus in lateral view (AL) and in ventral view (AV), and tip of right valva in dorsal or dorso-anterior view (T). (40) *Lethe yoshikoe* (Koiwaya, 2011) **comb. nov.**, Zhejiang (fig.16); (41) *Lethe labyrinthea* Leech, 1890, Hubei (fig.15); (42) *Lethe yunnana yunnana* D'Abbrera, 1990 (fig.17); (43) *Lethe yunnana bozanoi* subsp. nov. (HT, fig.19); (44-45) *Lethe lisuae* Huang, 2002 (figs. 23-24); (46) *Lethe neofasciata* Lee, 1985 (fig.22); (47) *Minois paupera paupera* (Alpheraky, 1888) (fig.27); (48) *Minois paupera* subsp. incert. (fig.28); (49) *Minois paupera liuyei* subsp. nov. (HT, figs.25-26).

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