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New or little known butterflies from China - 2

(Lepidoptera: Pieridae, Nymphalidae, Lycaenidae et Hesperiidae)

by

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Abstract: *Aporia tayiensis* ***siyaoi*** **subspec. nov.** is described from southern Gansu. *Aporia wolongensis* Yoshino, 1995 **stat. nov.** (= *A. acraea wolongensis* Yoshino, 1995) is raised to full specific rank, with *A. wolongensis koiwayai* Della Bruna et al. **comb. nov.** (= *A. acraea koiwayai* Della Bruna et al., 2003) regarded as its subspecies. *Euaspa* ***zhengi*** **spec. nov.** is described from Motuo, SE Tibet. *Ussuriana fani* ***zihaoi*** **subspec. nov.** is described from Lixian and Heishui, northwestern Sichuan. *Coladenia vitrea* Leech is reported from Shaanxi, with ♀♀ figured for the first time. *Sovia fangi* Huang & Wu, 2003 and *Limenitis dubernardi* Oberthür, 1903 are rediscovered and discussed.

Introduction: Most of the butterflies reported in this paper were collected by the author and his friends from the Chinese Provinces of Sichuan, Yunnan, Tibet, Gansu and Shaanxi in 2014-2015.

Abbrevitions:

BSNU: Biological laboratory of Shanghai Normal University, Shanghai, P.R. China.
CHH: Collection of Hao Huang.
CLYF: Collection of Yu-Fei Li.
HT: Holotype.
IZAS: Institute of Zoology, Chinese Academy of Science, Beijing, P.R. China.
PT: Paratype.
TL: Type locality.

Pieridae

Aporia tayiensis s i y a o i **subspec. nov.** (figs. 1-6, 64-65, 78-79)

Aporia tayiensis, Wu, 2010: 258, partim on material, fig. 115 for ♀ genitalia, pl. 11, fig. 5 for ♀ from Gansu.

HT ♂ (figs. 1-2): China, Gansu Province, Longnan City, Kangxian County, Qinghe-linchang, 1590 m, 17.VI.2015, H. Huang leg., deposited in BSNU.
PTs: Gansu Province: 1 ♂ (figs. 3-4, CHH), same locality as HT, 13.VI.2015, H. Huang leg.; 1 ♀ (figs. 5-6, CHH), same locality as HT, 18.VI.2015, H. Huang leg.

Etymology: This new subspecies is named in honor of Mr. Si-Yao Huang, Beijing.

Diagnosis: This new subspecies can be distinguished from *Aporia tayiensis tayiensis* Yoshino, 1995 from Dayi, Sichuan by the following combination of characters.
Both sexes:
1) Forewing upperside with clearly defined white spot in space 3.
2) Forewing underside with a markedly larger white spot in space 3 than that of *A. t. tayiensis* Yoshino.
3) Forewing with a pair of white streaks extending from discal area of space 1b to termen on both upper and under sides.
4) Forewing underside with marginal and submarginal areas less marked with black patches.
5) Hindwing with discocellular black spot markedly smaller than that of *A. t. tayiensis* Yoshino on both upper and under sides.
6) Hindwing upperside with white spots in spaces 3-5 markedly longer than those of *A. t. tayiensis* Yoshino.

Remarks: Beside the type material, three other ♀♀ specimens collected from Kangxian and Wenxian, Gansu are known in the collection of IZAS, possessing the same diagnostic characters of this new subspecies. The 2 ♂♂ PTs have been dissected (figs. 64-65, 78-79) and show no difference in the genitalia from those of nominotypical subspecies as illustrated by Della Bruna et al. (2013: 61).

After the examination of a good number of specimens of *A. acraea* (Oberthür, 1885) from various localities in Sichuan and Yunnan, the author agreed with Yoshino (2001) and Della Bruna et al. (2013) on that *A. tayiensis* Yoshino is independent from *A. acraea* (Oberthür) with a constantly longer saccus, a longer aedoeagus, and a longer and wider uncus in the ♂ genitalia (figs. 64-65). However, all external characters stated by Della Bruna et al. (2013) cannot be used for a correct identification of *A. tayiensis* Yoshino: the size of *A. acraea* (Oberthür) can be very big in a few

examples; the marginal area of forewing underside can be similarly marked for both species; the hindwing upperside black discocellular spot can be present in a few example of *A. acraea* (Oberthür) or very small in *A. tayiensis* ***siyaoi*** **subspec. nov.** Only the following external character is considered as useful to distinguish these two species: the basal two fifth of vein 5 on hindwing upperside is mostly dusted by a black streak overflowing the vein and clearly dividing white spots in spaces 4 and 5 in *A. tayiensis* Yoshino, but is unmarked or at most outlined by black scales restricted on vein in *A. acraea* (Oberthür).
In ♂ genitalia, *A. tayiensis* Yoshino (figs. 64-65) differs from *A. nishimurai* Koiwaya, 1989 (figs. 67-68) by having a narrower saccus in dorsal view.

Distribution: Gansu (Kangxian and Wenxian).

Aporia wolongensis Yoshino, 1995 **stat. nov.** (figs. 17-21, 66, 82)
Aporia acraea wolongensis Yoshino, 1995, Neo Lepidoptera **1**: 1, figs. 3-4 for ♂ HT; TL: Wenchuan, Sichuan; Della Bruna et al., 2004: 56, figs. for ♀ (mislabeled as ♂) from Wolong; Wu, 2010: 257, pl. 11, fig. 3 for ♂; Della Bruna et al., 2013: 60, figs. for ♂ from Lixian and ♀ from Wolong.

Material: Sichuan Province: 3 ♂♂, Wenchuan County, Wolong Nature Reserve, 1300 m, 3.VIII.2011, H. Huang leg.; 3 ♂♂, Lixian County, Bipenggou, 2400 m, 28.VI.2015, H. Huang leg.; 1 ♂, Lixian, Danzhamugou, 2600 m, 29.VI.2015, H. Huang leg.; 1 ♀, Lixian, Bipenggou, 2500 m, 16.VII.2015, H. Huang leg.

Remarks: The uncus of this taxon (fig. 66) is similar to that of *Aporia wolongensis koiwayai* Della Bruna et. al., 2003 **comb. nov.** (figs. 69, 73), but is constantly wider in lateral view than that of *A. acraea* (Oberthür) (figs. 70-72, 74-77).
The following two taxa have been proved to be junior synonyms of *A. acraea* (Oberthür) (Draeseke, 1924; Watkins, 1927; Della Bruna et. al., 2004 & 2013), thus have no priority over *Aporia wolongensis* Yoshino: *Pieris lotis* Leech, 1890 and *Metaporia acraea funkei* Draeseke, 1924.

Aporia wolongensis koiwayai Della Bruna, Gallo & Sbordoni, 2003 **comb. nov.** (figs. 13-14, 16, 69, 73, 83-84)
Aporia acraea koiwayai Della Bruna et. al., 2003, Fragm. ent. **35** (2): 135, figs. 14-15 for ♂ HT; TL: road Zhongdian-Sanba, NW Yunnan; Della Bruna et al., 2004: 55, figs. for ♂ HT; Della Bruna et al., 2013: 59, partim on ♂ only.
Aporia nishimurai, Wu, 2010: 254, fig. 113 for ♂ genitalia.
Aporia nishimurai ssp., Wu, 2010: 255, pl. 10, fig. 21 for ♂.

Material: Yunnan Province: 3 ♂♂, Zhongdian County, near Baishuitai, 2400 m, 23.VI.2004, H. Huang leg.

Remarks: *Aporia acraea koiwayai* Della Bruna et. al. is restricted to a small area around Baishuitai and Sanba, on the road between Zhongdian and Lijiang, it is surrounded by *A. acraea acraea* (Oberthür, 1885) in distribution; specimens of *A. a. acraea* (Oberthür) have been found in Lijiang, Weixi, Tuguancun of Zhongdian, Dayao of Chuxiong, Luojishan, etc. Though these two taxa are not sympatric in nature, they are immediately neighbored. It should be noted that the ♀ from „N of Lijiang" identified by Della Bruna et al. (2013: 59) as *Aporia acraea koiwayai* Della Bruna et. al. actually belong to *A. acraea acraea* (Oberthür); the author examined a few specimens of both sexes from the same area.
It is unreasonable that *A. acraea* (Oberthür) remains unchanged in external features in a vast area from Kangding and Baoxing in the north to Weixi and Lijiang in the south, but suddenly changes its appearance in two small localities, one of which is even surrounded by the normal forms. A careful examination of both external features and ♂♂ genitalia supports to treat *A. acraea wolongensis* Yoshino and *A. acraea koiwayai* Della Bruna et. al. as a single species distinct from the real *A. acraea* (Oberthür), viz. *A. wolongensis* Yoshino **stat. nov.** Both *A. wolongensis wolongensis* Yoshino and *A. wolongensis koiwayai* Della Bruna et. al. **comb. nov.** have a markedly wider uncus (figs. 66, 69, 73) in lateral view than that of the real *A. acraea* (Oberthür) (figs. 70-72, 74-77).
In wing pattern, some individuals of *A. wolongensis koiwayai* Della Bruna et. al. (figs. 13-14, with ♂ genitalia shown in fig. 69) show a closer similarity to *A. nishimurai* Koiwaya, 1989 (figs. 7-12) than to *A. acraea* (Oberthür); a ♂ collected by the author, figured by Wu (2010: pl. 10, fig. 21) was misidentified by Wu (2010) as *A. nishimurai* Koiwaya, 1989 and quoted by Della Bruna et. al. (2013: 58) as an intermediate form between *A. nishimurai nishimurai* Koiwaya and *A. nishimurai shinnooka* Yoshino, 2001. However in ♂ genitalia, *A. wolongensis* Yoshino (figs. 66, 69, 73) differs from both *A. nishimurai nishimurai* Koiwaya (fig. 67) and *A. nishimurai shinnooka* Yoshino (fig. 68) by having a shorter saccus, a shorter aedoeagus and a shorter uncus.

Lycaenidae

***Euaspa z h e n g i* spec. nov.** (figs. 43, 46, 92-93)

HT ♂ (figs. 43, 46): China, Xizang Autonomous Region, Linzhi Division, Motuo County, Damu village, ca. 2000 m, 27.VII.2015, Y.-B. Li leg., deposited in BSNU.

Etymology: This new species is named in honor of Mr. Zhong-Hua Zheng, Nanjing in gratitude for his help in collecting some interesting butterflies.

Diagnosis (fig. 93): This new species is similar to *Euaspa miyashitai* Koiwaya, 2002 from Darjeeling, *E. pavo* (De Nicéville, 1887) from Bhutan and *E. motokii* Koiwaya, 2002 from Kachin, Myanmar, but can be distinguished from all of them in ♂ by the following combination of characters:

1) Forewing upperside with black marginal border markedly wider than that of *E. pavo* (De Nicéville) in spaces 1a-1b.
2) Hindwing underside with basal and subbasal areas inside of antediscal line more densely suffused with whitish scales than in both *E. miyashitai* Koiwaya and *E. pavo* (De Nicéville).
3) Forewing underside with submarginal area more suffused with whitish scales than in both *E. miyashitai* Koiwaya and *E. pavo* (De Nicéville).
4) Postdiscal line on forewing underside more clearly shifted-in in spaces 2-3 than in *E. motokii* Koiwaya and *E. pavo* (De Nicéville, not forming a smooth curve as in *E. miyashitai* Koiwaya.
5) Postdiscal line on forewing underside remoter from termen than in *E. motokii* Koiwaya.
6) Subbasal dark spot in space 7 of hindwing underside smaller and more widely separated from the dark cell spot and the antediscal line than in *E. motokii* Koiwaya.
7) Distal margin of uncus in dorsal view flat, different from that of *E. miyashitai* Koiwaya, *E. motokii* Koiwaya and *E. pavo* (De Nicéville).
8) Valva in ventral view enlarged near tip as in *E. pavo* (De Nicéville), markedly different from that of *E. miyashitai* Koiwaya and *E. motokii* Koiwaya.
9) Valva in ventral view with inner posterior corner sharply angled as in *E. motokii* Koiwaya, different from that of *E. pavo* (De Nicéville).
10) Valva in ventral view with outline of sacculus rectangular and closer to tip of valva, not sharply pointed as in *E. pavo* (De Nicéville) and *E. motokii* Koiwaya.

Remarks: Possessing the subbasal dark spots on hindwing underside and lacking the reddish or yellowish spot on forewing underside, this new species can be easily distinguished from all the remaining species of *Euaspa* Moore, 1884 (Koiwaya, 2007), including the recently described *E. uedai* Koiwaya, 2014 from Lushan, Sichuan (Koiwaya, 2014).

***Ussuriana fani z i h a o i* subspec. nov.** (figs. 36, 39, 41-42, 44-45, 47-48, 94-95, 97,100, 102)

Ussuriana fani ssp. (new): Koiwaya, 2007, The *Zephyrus* Hairstreaks of the World: 60, pl. 11, figs. 10-13, 10-14.

HT ♂ (fig. 36): China, Sichuan Province, Aba Tibetan and Qiang Autonomous Prefecture, Lixian County, Bipenggou, 2400 m, 16.VII.2015, H. Huang leg., deposited in BSNU.
PTs: Sichuan Province: 2 ♂♂ (figs. 45, 48, CHH), same data as HT; 3 ♂♂ (figs. 41, 44, 47, CHH), 2 ♀♀ (figs. 39, 42, CHH), Aba Prefecture, Heishui County, 2500 m, 1.-6.VIII.2015, H. Huang leg.

Etymology: This new subspecies is named in honor of Mr. Zi-Hao Liu, Anhui.

Diagnosis: This new subspecies from Aba, Sichuan can be distinguished from *U. f. fani* Koiwaya, 1993 (figs. 35, 38) from Shaanxi and *U. f. tateishii* Koiwaya, 2000 (figs. 34, 37, 40) from Zhejiang by the following combination of characters.

Both sexes:

1) Both wings underside ground color more grayish than in both *U. f. fani* Koiwaya and *U. f. tateishii* Koiwaya, with yellow scales more greenish and less orange, dusted by gray scales.
2) Hindwing underside with postdiscal spot in space 7 better marked by orange scales than in *U. f. tateishii* Koiwaya.

Male:

3) Hindwing upperside without orange patch in space 2 which is well marked in *U. f. fani* Koiwaya.

Female:

4) Hindwing upperside with submarginal orange band narrower than in both *U. f. fani* Koiwaya and *U. f. tateishii* Koiwaya.

Remarks: All type specimens of this new subspecies have been dissected and proved to belong to *U. fani* Koiwaya. ♂♂ and ♀♀ of both *U. f. fani* Koiwaya (figs. 35, 38) and *U. f. tateishii* Koiwaya (figs. 34, 37, 40) have been dissected for a comparison. Koiwaya's (2000) previous record for *U. f. tateishii* Koiwaya from E Sichuan has been proved to be a misidentification of *U. michaelis* (Oberthür, 1880) (Koiwaya, 2007). The genital difference between *U. fani* Koiwaya (figs. 94-98, 100-104) and *U. michaelis* (Oberthür) (figs. 99, 105-106) has been found in shape of socius, width and direction of falx in natural shape, length of saccus, length and direction of ampulla in natural shape, the dorsal wall of

aedoeagus near apex, the length of ductus bursae, the length of signum on corpus bursae, the size and shape of lamella antevaginalis, and the details of lamella postvaginalis.

Hesperiidae

Sovia fangi Huang & Wu, 2003 (Figs. 49-51, 107-109)
Neue Ent. Nach. **55**: 133, figs. 32-33 for ♂ genitalia, pl.11, figs. 6-7 for ♂ HT; TL: Pantiange, Weixi, NW Yunnan.

Material: Yunnan Province: 2 ♂♂, Diqing Tibetan Autonomous Prefecture, Deqin County, Mingyong village, 2500 m, 28.VI.2015, H. Huang leg.; 3 ♂♂, Deqin County, Yanmen, South of Cizhong (Tsekou), 2700 m, 2.VII.2015, H. Huang leg.; 2 ♂♂, Lijiang City, Ludian, 2500-2700 m, 4.VII.2015, H. Huang leg..

Remarks: This species was originally described based on a single ♂ from Weixi. Recently a small number of specimens were collected by the author from three more localities which are restricted to the mountains along the Lancang River (the Mekong) and between the Lancang River and the Jinsha River (the Yangtse).

Coladenia vitrea Leech, 1893 (figs. 52-57, 110-112)
Butterflies from China, Japan and Corea, Hesperiidae: 568, pl. 41, fig. 15 for ♂; TL: Tatsienlu (Kangding, Sichuan); Evans, 1949: 118, pl. 19, fig. for valva of ♂ genitalia; Devyatkin, 2008: 280.
Coladenia maeniata, Devyatkin, 2008: cpl. 20, fig. 6 for ♂ HT of *Coladenia vitrea* [publishing or editing error].

Material: Shaanxi Province: 2 ♂♂ (figs. 54-55, CHH), Ningshan County, Guanghuojie, 1300-1700 m, 19.V.2012, Y.-F. Li leg.; 2 ♀♀ (figs. 56-57, CHH), Ningshan County, Guanghuojie, 1300-1700 m, 15.V.2011 and 18.V.2012, Y.-F. Li leg.; 1 ♀ (CHH), Ningshan County, Huoditang, 20.V.2007, H.-L. Shi leg.. Sichuan Province: 1 ♂ (figs. 52-53), Ganzi Tibetan Autonomous Prefecture, Kangding, near Guzan, 1900 m, 15.IV.2015, H. Huang leg..

Remarks: This little known skipper had been known only on the unique ♂ HT from Tatsienlu (Kangding) and three ♂♂ from Sichuan (Evans, 1949) until a series of specimens, including both sexes, were collected by some Chinese collectors from Shaanxi. The hand-drawing of ♂ genitalia illustrated by Evans (1949) is simple and misleading. Thus it is necessary to figure the ♂ genitalia in details herein. A further ♂ from the TL (figs. 52-53) was also collected by the author with ♂ genitalia examined (fig. 112). There is a little variation in size of hindwing cell spot, the length of harpe in ♂ genitalia and the detail of carina edoeagi.

Nymphalidae

Limenitis dubernardi Oberthür, 1903 (figs. 58-61, 113)
Histoire de la missions du Thibet 2: 412, fig. 8 for ♂; TL: Tseku (Cizhong, Deqin, Yunnan); Lang, 2012: 247, pl. 24, figs. 4-6 for ♂; Gallo & Della Bruna, 2013: 18, figs. for ♂.

Material: Yunnan Province: 2 ♂♂, Diqing Tibetan Autonomous Prefecture, Deqin County, Yanmen, South of Cizhong, 2800 m, 1.-3.VII.2014, H. Huang leg.; 1 ♂, Deqin, Mingyong village, 2500 m, 28.VI.2014, H. Huang leg..

Remarks: This very rare species had not been reported over 110 years since it was described on 2 ♂♂ from Tsekou, NW Yunnan. In early 2013, a famous Japanese photographer Junzo Aoyama posted some photos on this mysterious butterfly in his blog (blog.goo.ne.jp/gooaojyun), which were taken at „Meili Snow Mountain“ on 1.VII.2012 and 11.VII.2012. Mr. Wen-Hao Sun and Mr. Zi-Hao Liu recognized that the scene in one of Aoyama's photos belongs to the Mingyong village, Deqin. The author visited this area in the late June of 2014 and successfully collected a ♂ near the Mingyong village; he also collected further 2 ♂♂ in a valley to the south of Tsekou (near the current Cizhong) in early July of 2014.
A dissection of ♂ genitalia proves this species to be more closely related to *Limenitis ciocolatina* Poujade, 1885 (figs. 62-63, 114) than to any other species. These two species are allopatric and have only a few minor differences in length of harpe, length of saccus and details of teeth at apex of valva (figs. 113-114). In distribution, *L. ciocolatina* Poujade had been known from a vast area from Beijing to Sichuan (Gallo & Della Bruna, 2013), it was recently recorded from Dali (W.-H. Sun, personal communication) and Dongzhulin, near Benzilan in the Yangtse valley, NW Yunnan (S.-Y. Lang, personal communication); whilst *L. dubernardi* Oberthür is restricted to the Lancang valley.
Another similar species, *L. populi* (Linnaeus, 1758) (fig. 115) possesses very different genital characters from both, *L. dubernardi* Oberthür and *L. ciocolatina* Poujade. It should be noted that *L. populi (*Linnaeus) is sympatric with either *L. dubernardi* Oberthür or *L. ciocolatina* Poujade.

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Yu-Tang Wang and Mr. Yong-Ren Zhang accompanied the author during his collecting trips to Yunnan.

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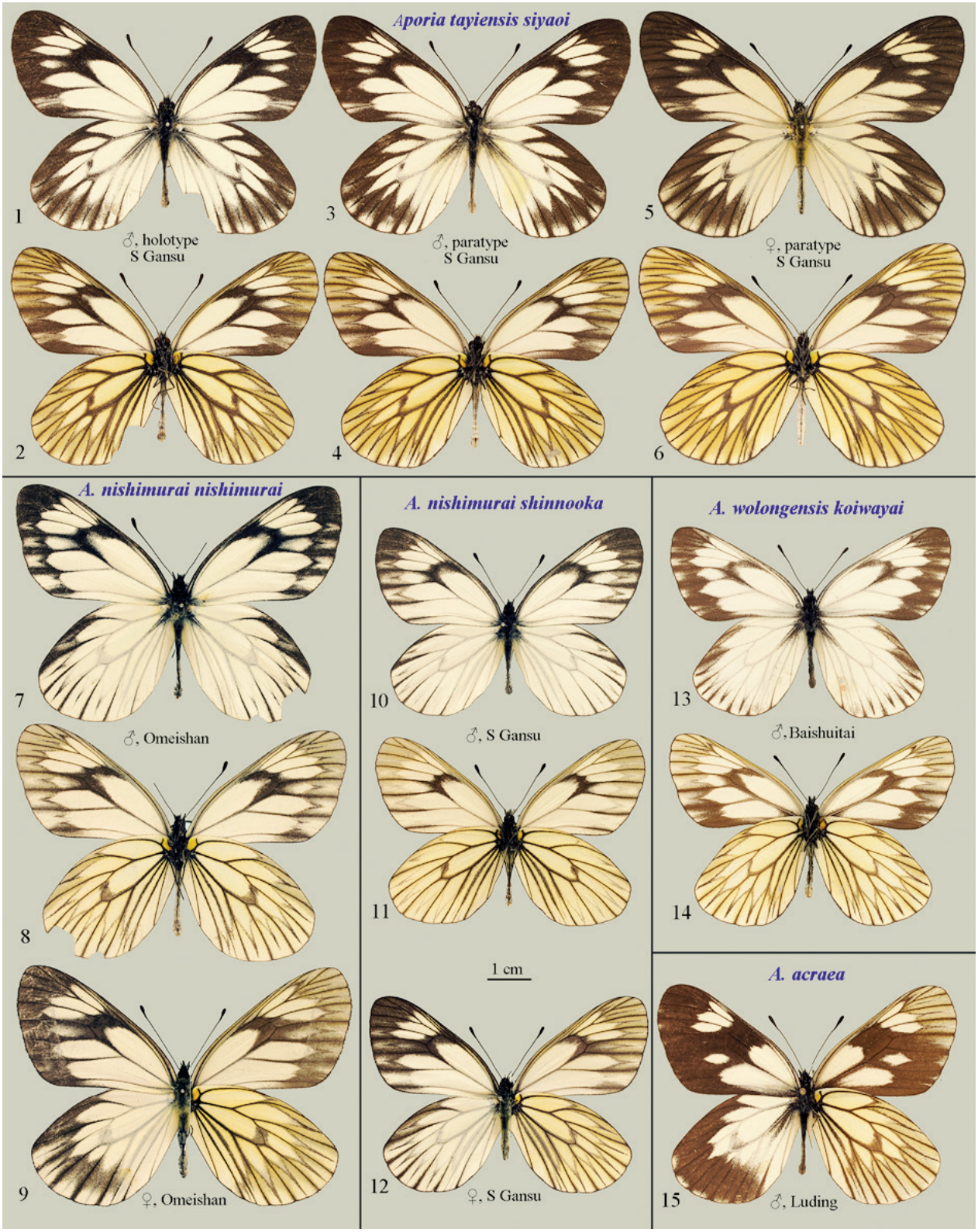
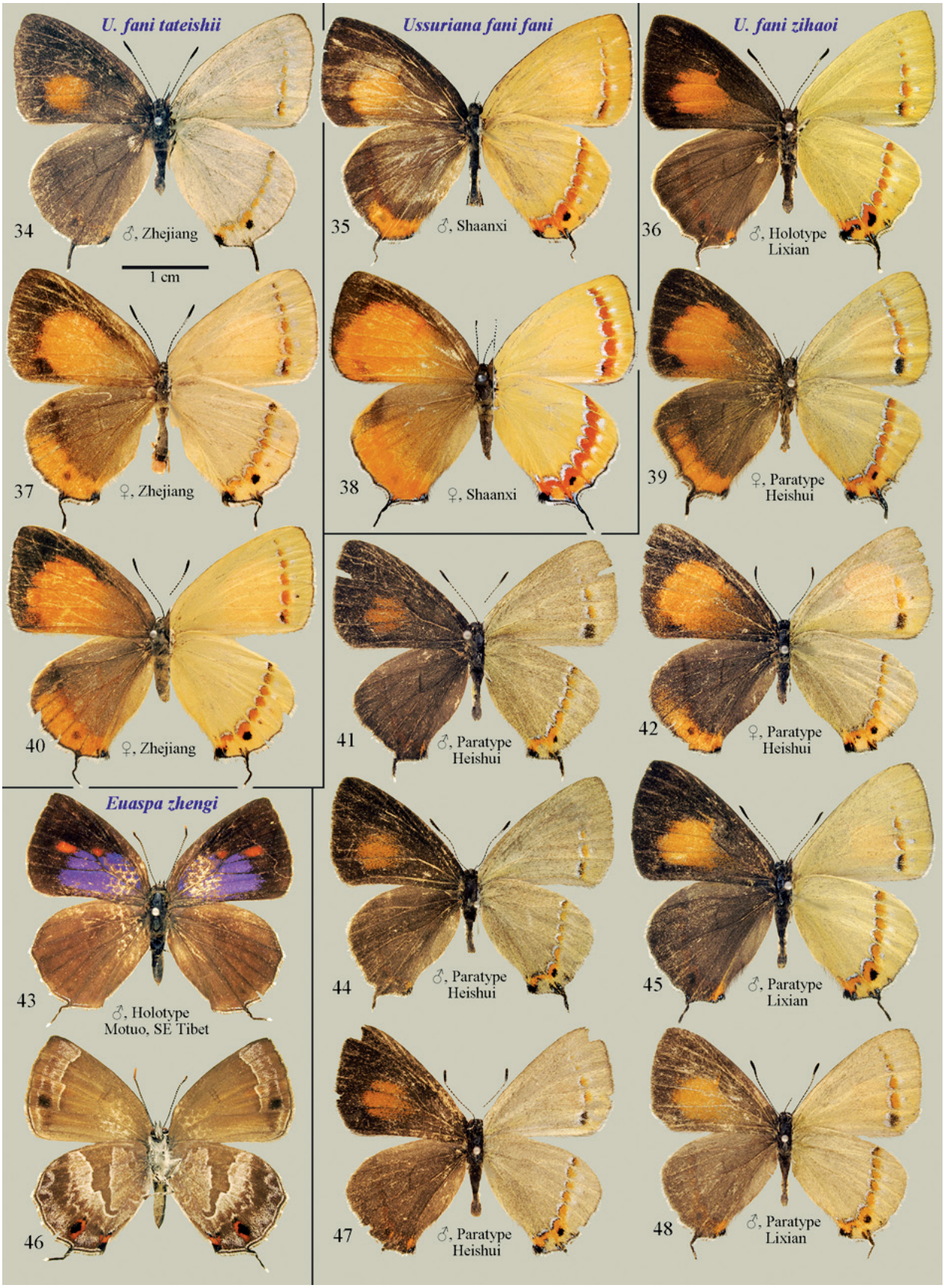
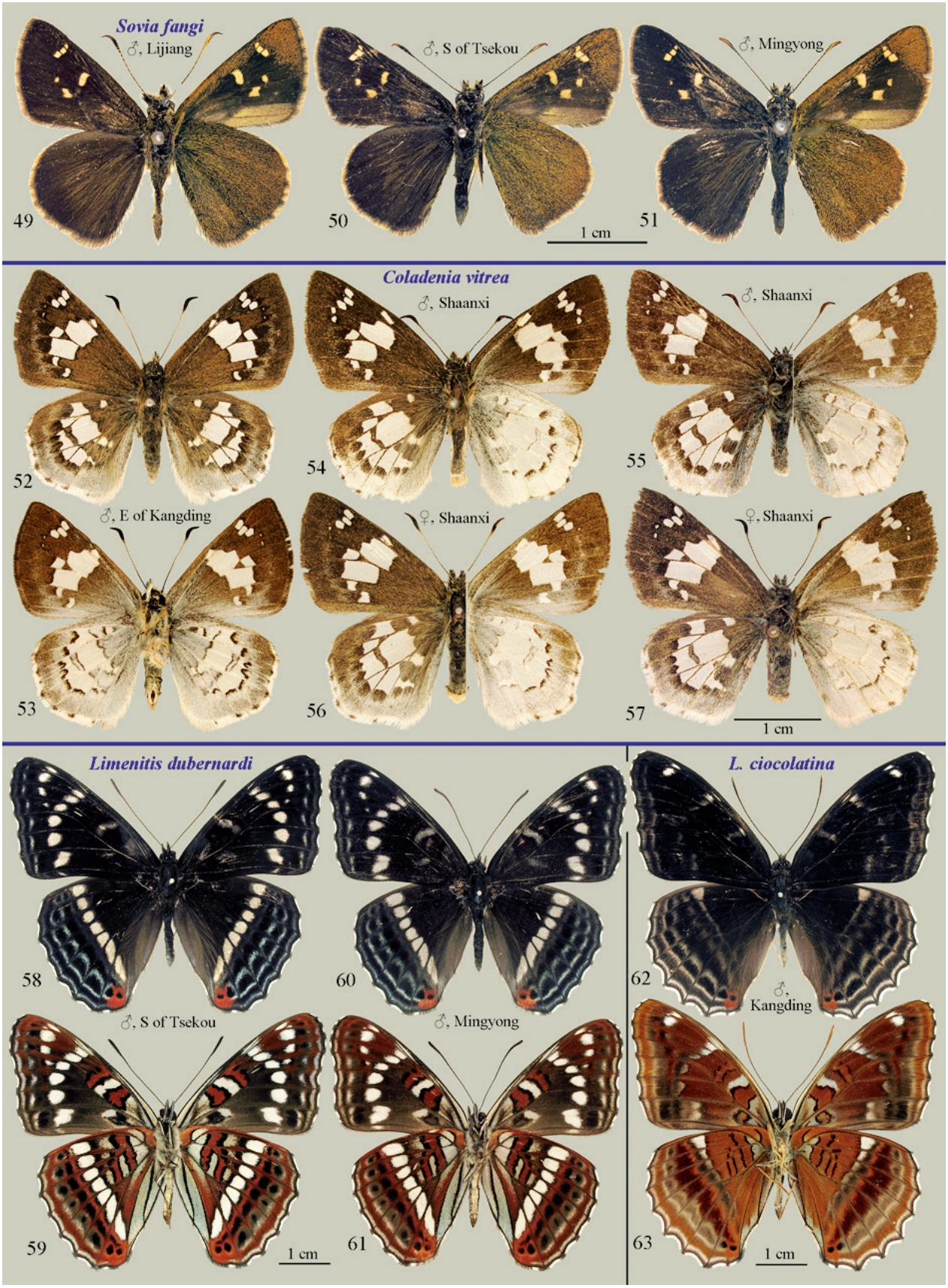


Figs. 1-15: Habitus of *Aporia* taxa under same scale. (1-6) *Aporia tayensis* ***siyaoi*** **subspec. nov.**; (7-9) *Aporia nishimurai nishimurai* Koiwaya, 1989; (10-12) *Aporia nishimurai shinnooka* Yoshino, 2001; (13-14) *Aporia wolongensis koiwayai* Della Bruna, Gallo & Sbordoni, 2003; (15) *Aporia acraea* (Oberthür, 1885). Upperside (1, 3, 5, 7, 9-left, 10, 12-left, 13, 15-left) and underside (2, 4, 6, 8, 9-right, 11, 12-right, 14, 15-right).

Figs. 16-33: Habitus of *Aporia* taxa under same scale. (16) *Aporia wolongensis koiwayai* Della Bruna, Gallo & Sbordoni, 2003; (17-21) *Aporia wolongensis wolongensis* Yoshino, 1995; (22-33) *Aporia acraea* (Oberthür, 1885). Upperside (left half for all) and underside (right half for all).



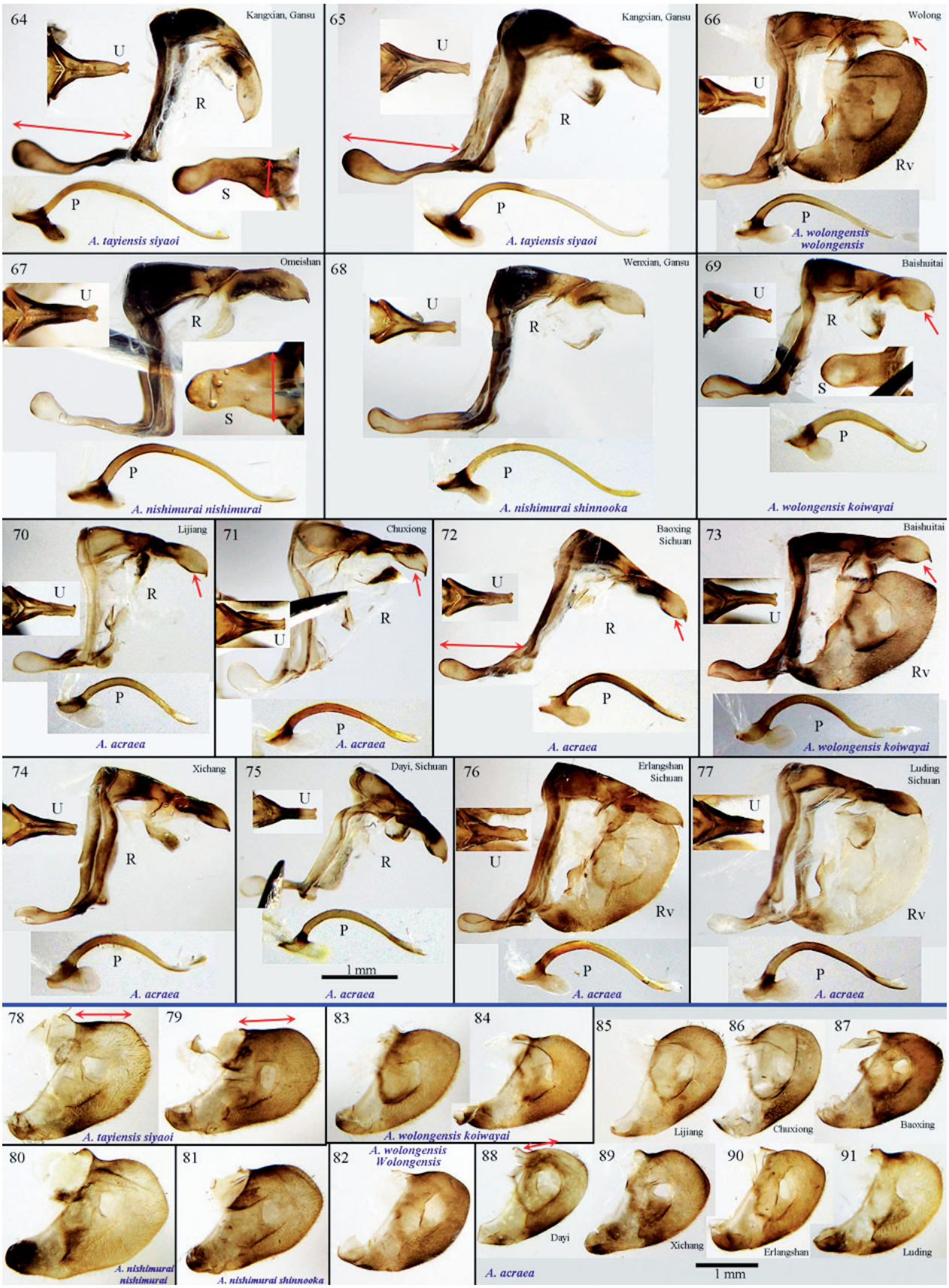
Figs. 34-48: Habitus of Theclini taxa under same scale. (34, 37, 40) *Ussuriana fani tateishii* Koiwaya, 2000; (35, 38) *Ussuriana fani fani* Koiwaya, 1993; (36, 39, 41-42, 44-45, 47-48) *Ussuriana fani* ***zihaoi*** **subspec. nov.**; upperside (left half for all) and underside (right half for all). (43, 46) *Euaspa* ***zhengi*** **spec. nov.**; upperside (43) and underside (46).



Figs. 49-51: Habitus of *Sovia fangi* Huang & Wu, 2003 under same scale. Upperside (left half for all) and underside (right half for all).

Figs. 52-57: Habitus of *Coladenia vitrea* Leech, 1893 under same scale. Upperside (52, 54-left, 55-left, 56-left, 57-left) and underside (53, 54-right, 55-right, 56-right, 57-right).

Figs. 58-63: Habitus of *Limenitis* species under same scale. (58-61) *Limenitis dubernardi* Oberthür, 1903; (62-63) *Limenitis ciocolatina* Poujade, 1885. Upperside (58, 60, 62) and underside (59, 61, 63).



Figs. 64-77: ♂ genitalia of *Aporia* taxa at same scale, consisting of uncus in dorsal view (U), of genitalia with valvae and aedoeagus removed (R), of genitalia with left valva and aedoeagus removed (Rv), of aedoeagus in lateral view (P), and of saccus in dorsal view (S). (64) Specimen shown in figs. 1-2; (65) figs. 3-4; (66) fig. 17; (67) figs. 7-8; (68) figs. 10-11; (69) figs. 13-14; (70) fig. 22; (71) fig. 23; (72) fig. 26; (73) fig. 16; (74) fig. 25; (75) fig. 24; (76) fig. 27; (77) fig. 15.

Figs. 78-91: Right valva of *Aporia* taxa in left lateral view at same scale. (78) Specimen shown in figs. 1-2; (79) figs. 3-4; (80) figs. 7-8; (81) figs. 10-11; (82) fig. 17; (83) figs. 13-14; (84) fig. 16; (85) fig. 22; (86) fig. 23; (87) fig. 26; (88) fig. 24; (89) fig. 25; (90) fig. 27; (91) fig. 15.

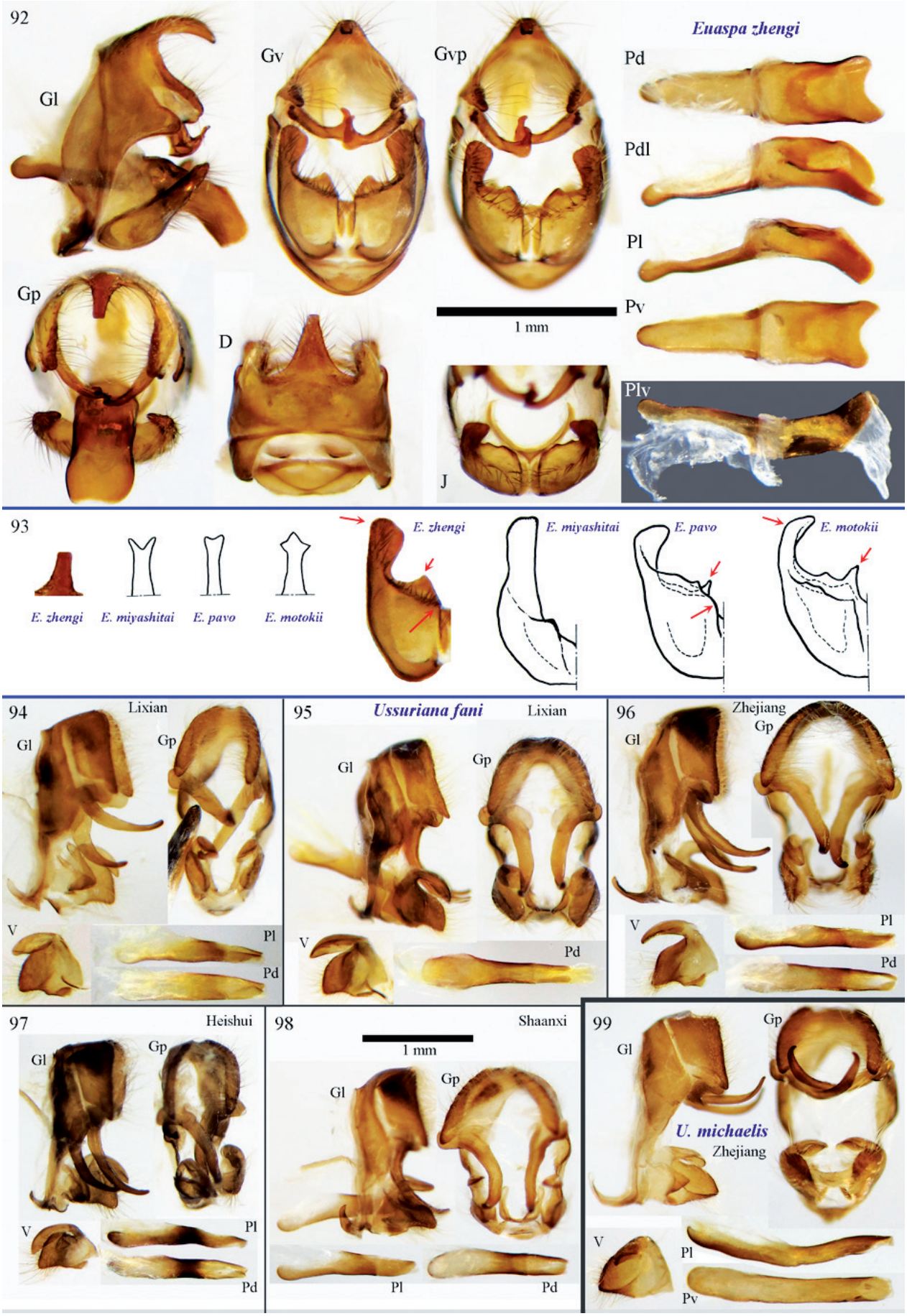


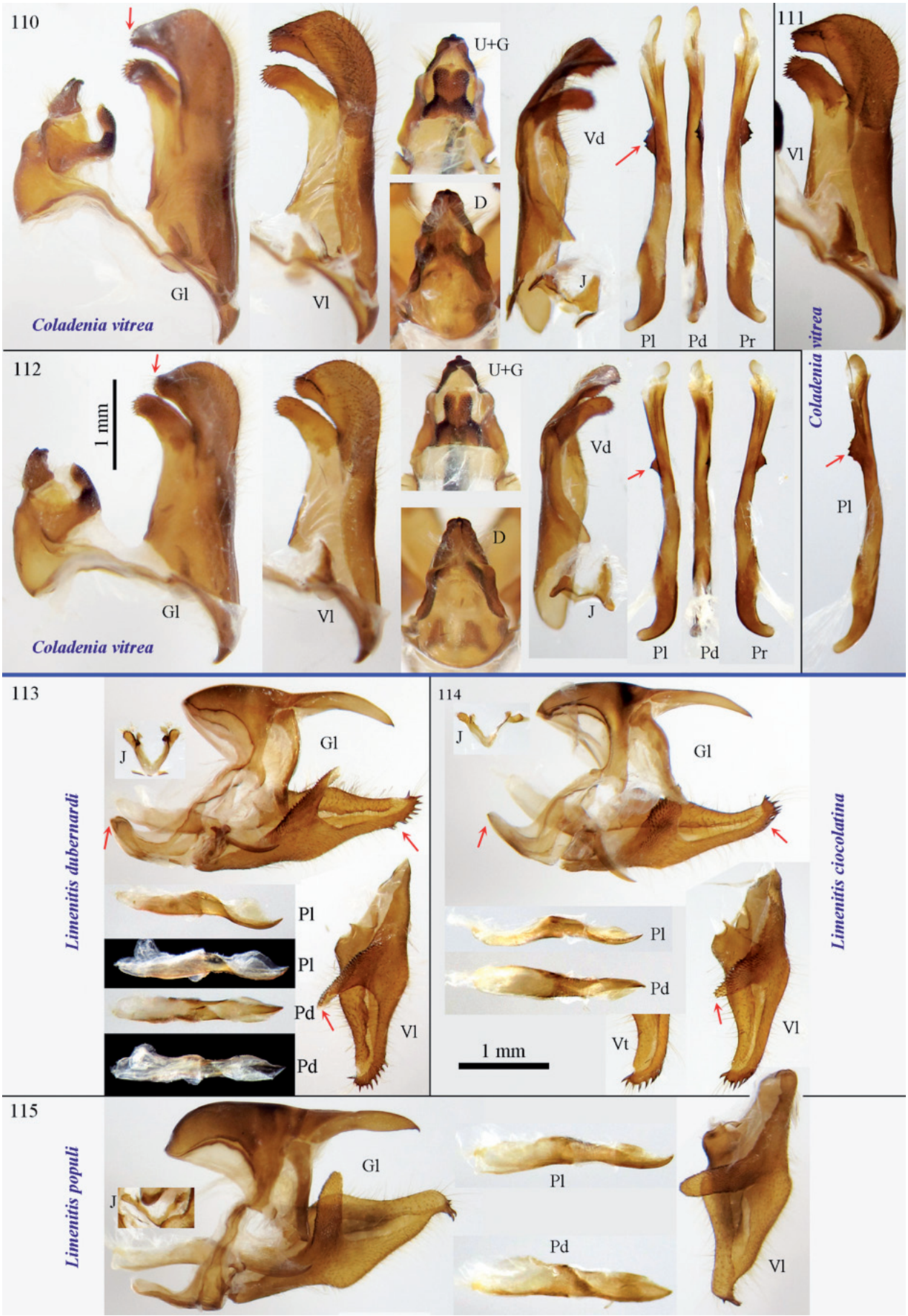
Fig. 92: ♂ genital structures of *Euaspa* ***zhengi*** **spec. nov.** under same scale, consisting of whole genitalia in lateral (Gl) and posterior (Gp) views, of genitalia in ventral (Gv), ventroposterior (Gvp) and dorsal (D) views with aedoeagus removed, of valvae and juxta in posterior view to show juxta (J), of aedoeagus in dorsal (Pd), dorsolateral (Pdl), left lateral (Pl) and ventral (Pv) views, and of aedoeagus in right lateral view with vesica everted (Plv).

Fig. 93: ♂ genital differences in uncus and valva between *Euaspa* ***zhengi*** **spec. nov.**, *Euaspa miyashitai* Koiwaya, 2002, *Euaspa pavo* (De Nicéville, 1887) and *Euaspa motokii* Koiwaya, 2002. All hand-drawings reproduced from Koiwaya (2007).

Figs. 94-99: ♂ genitalia of *Ussuriana* taxa under same scale, consisting of genitalia in lateral (Gl) and posterior (Gp) views (or with phallus removed), of left valva in inner lateral view (V), and of aedoeagus in lateral (Pl), dorsal (Pd) or ventral (Pv) views. (94-98) *Ussuriana fani* Koiwaya, 1993; (94) specimen shown in fig. 36; (95) fig. 45; (96) fig. 34; (97) fig. 41; (98) fig. 35; (99) *Ussuriana michaelis* (Oberthür, 1880), specimen not figured.

Figs. 100-106: ♀ genitalia of *Ussuriana* taxa in lateral (Fl) and ventral (Fv) views under same scale. (100-104) *Ussuriana fani* Koiwaya, 1993; (100) specimen shown in fig. 39; (101) fig. 37; (102) fig. 42; (103) fig. 38; (104) fig. 40; (105-106) *Ussuriana michaelis* (Oberthür, 1880), specimens not figured.

Figs. 107-109: ♂ genitalia of *Sovia fangi* Huang & Wu, 2003 under same scale, consisting of ring in lateral view (R), of juxta in posterior view (J), of dorsum in dorsal view (D), of uncus and gnathos in ventral view (U+G), of aedoeagus in lateral (Pl) and dorsal (Pd) views, of valvae in dorsal view (Vd), of right valva in inner lateral view (Vr), of left valva in inner lateral view (Vl), and of whole genitalia in lateral view (Gl). (107) Specimen shown in fig. 49; (108) fig. 50; (109) fig. 51.



Figs. 110-112: ♂ genitalia of *Coladenia vitrea* Leech, 1893 under same scale, consisting of genitalia in lateral view with aedoeagus removed (Gl), of right valva in lateral view (Vl), of uncus and gnathos in ventral view (U+G), of dorsum in dorsal view (D), of right valva in dorsal view (Vd), of juxta in dorsal view (J), and of aedoeagus in left lateral (Pl), dorsal (Pd) and right lateral (Pr) views. (110) Specimen shown in fig. 54; (111) fig. 55; (112) figs. 52-53.

Figs. 113-115: ♂ genitalia of *Limenitis* species under same scale, consisting of genitalia in lateral view (Gl), of juxta in posterior view (J), of aedoeagus in lateral (Pl) and dorsal (Pd) views, of left valva in inner lateral view (Vl), and of tip of valva in full-face view (Vt). (113) *Limenitis dubernardi* Oberthür, 1903, shown in figs. 58-59; (114) *Limenitis ciocolatina* Poujade, 1885, shown in figs. 62-63; (115) *Limenitis populi* (Linnaeus, 1758), specimen from NW Yunnan, not figured.