

Artopoetes wangi spec. nov. from Gansu, China

(Lepidoptera, Lycaenidae)

by

HAO HUANG

received 30.VIII.2016

Abstract: *Artopoetes wangi* spec. nov. (Theclinae: Theclini) is described from Gansu, China. It is closely related to *A. praetextatus* (FUJIOKA, 1992) and is allopatric with the latter. Its food plant is suspected to be some species of *Syringa* LINNAEUS (Oleaceae), which is abundant at the type locality. A new junior synonym is recognized: *Artopoetes pryeri cheni* KOIWAYA, 2014 syn. nov. (= *Artopoetes pryeri zhaoi* YUAN, 2005).

Introduction: A strange ♀ of the genus *Artopoetes* CHAPMAN, 1909 (type species: *Lycaena pryeri* MURRAY, 1873) was unexpectedly collected by Mr. CHUN-HAO WANG from a subalpine broadleaf forest mixed with the *Syringa* trees in the Bailongjiang Valley, southern Gansu during a collecting trip in summer of 2014. It was identified by the author as an undescribed species of *Artopoetes* CHAPMAN, possessing some peculiar characters in the wing-pattern. With the help of Mr. CHUN-HAO WANG in the detailed information of the collecting locality, the author successfully collected a good number of additional specimens in both sexes. A careful study of both, ♂ and ♀ genitalia, proves this species to be new for science, representing the third known species of the genus *Artopoetes* CHAPMAN.

Abbreviations

BSNU: Biological laboratory of Shanghai Normal University, Shanghai, P.R. China.

CHH: Collection of HAO HUANG.

CLP: Collection of PENG LI.

CWCH: Collection of CHUN-HAO WANG.

HT Holotype.

PT Paratype.

TL Type locality.

Artopoetes wangi spec. nov. (figs. 1-12)

HT ♂ (figs. 1, 11): China, Gansu Province, Gannan Tibetan Autonomous Prefecture, Diebu County, 2200-2350 m, 2.-4.VII.2016, H. HUANG & P. LI leg., deposited in BSNU.

PTs: 11 ♂♂, 8 ♀♀ (CHH, CLP, CWCH), same data as the HT.

Etymology: This new species is named in honor of Mr. CHUN-HAO WANG, Beijing, who discovered this new species and gave the author the opportunity to describe it.

Field observations: All of the type specimens were collected on the slopes at elevations between 2200 m and 2350 m, where *Quercus* trees (Fagaceae) and *Syringa* trees (Oleaceae) were abundant. Some adults of the new species were observed perching on the *Syringa* trees or the plants near the *Syringa* trees. The new species flew together with *Artopoetes pryeri* (MURRAY, 1873), with a weaker and slower flight than that of the latter.

Diagnosis: This new species is similar to *A. praetextatus* (FUJIOKA, 1992), but can be easily distinguished from the latter by the following combination of characters.

Both sexes:

- 1) Both wings underside ground color grayish brown, not warm reddish brown as in *A. praetextatus* (FUJIOKA).
- 2) Postdiscal black spots on both wings underside more rounded in shape, associated with less whitish markings at the inner side, and closer to the termen than in *A. praetextatus* (FUJIOKA).
- 3) Submarginal blue markings on both wings underside associated with black dashes at the outer side, not at costal and anal sides as in *A. praetextatus* (FUJIOKA).
- 4) Submarginal blue markings on both wings underside not surrounded by red ground color as in *A. praetextatus* (FUJIOKA).
- 5) Submarginal blue markings on both wings underside closer to the postdiscal spots than in *A. praetextatus* (FUJIOKA).
- 6) Ciliae on both sides of both wings uniform white except for anal half of hindwing, not darkened at all vein-ends as in *A. praetextatus* (FUJIOKA).

♂ genitalia:

- 7) Saccus markedly shorter than in *A. praetextatus* (FUJIOKA) (BOZANO et al., 1995).

- 8) Uncus broader and more rounded at posterior end, with posterior margin more concave than in *A. praetextatus*

(FUJIOKA) (BOZANO et al., 1995).

♀ genitalia:

9) Lamella postvaginalis with a markedly larger breach at middle than in *A. praetextatus* (FUJIOKA) (FUJIOKA, 1992).

10) Antrum markedly longer than in *A. praetextatus* (FUJIOKA) (FUJIOKA, 1992).

Remark: This new species shares with *A. praetextatus* (FUJIOKA) more morphological characters than with *A. pryeri* (MURRAY), such as the stouter ring and the more apically pointed valvae in ♂ genitalia, and the longer ductus bursae and the less developed lateral lamellae in ♀ genitalia. It is sympatric with *A. pryeri* (MURRAY). Therefore there is no doubt that the new species is closest to *A. praetextatus* (FUJIOKA) in phylogeny. The genitalic morphology of the new species is very similar to that of *A. praetextatus* (FUJIOKA), thus the discovery of the new species does not change the diagnostic characters for the genus as discussed by BOZANO et al. (1995).

Checklist of the *Artopoetes* taxa and their distributions

For the synonyms, the following checklist mainly follows FUJIOKA (1975) and BOZANO et al. (1995). Both *A. pryeri zhaoui* YUAN, 2005 and *A. pryeri cheni* KOIWAYA, 2014 are described from Beijing, thus the latter is considered herein as a new junior synonym of the former. KOIWAYA (2014) totally overlooked YUAN's (2005) work. The record of *A. pryeri choui* KOIWAYA, 2011 from N Shaanxi comes from YUAN's (2005) work in which a ♀ of *A. pryeri choui* KOIWAYA from Qingquangou, Ganquan, N Shaanxi is figured.

- 1a. *Artopoetes pryeri pryeri* (MURRAY, 1873) - Japan, Korea, Far East Russia, NE China
 - = *Artopoetes pryeri nakamurai* KANDA & KATO, 1931 (synonym)
 - = *Artopoetes pryeri shokokuana* OKUBO, 1935 (synonym)
 - = *Artopoetes pryeri yezoensis* NAKAHARA, 1951 (synonym)
 - = *Artopoetes pryeri jezoensis* SHIRÔZU, 1952 (synonym)
 - = *Artopoetes pryeri continentalis* SHIRÔZU, 1952 (synonym)
 - = *Artopoetes pryeri yatsugabakenis* MURAYAMA, 1954 (synonym)
 - = *Artopoetes pryeri isurugiae* OKANO, 1968 (synonym)
- 1b. *Artopoetes pryeri zhaoui* YUAN, 2005 - Beijing
 - = *Artopoetes pryeri cheni* KOIWAYA, 2014 **syn. nov.**
- 1c. *Artopoetes pryeri choui* KOIWAYA, 2011 - S Gansu, N Shaanxi (YUAN, 2005)
2. *Artopoetes praetextatus* (FUJIOKA, 1992) - Shanxi, Beijing, Hebei, Shaanxi, Sichuan
 - = *Laeosopis hoenei* D'ABRERA, 1993 (synonym)
3. *Artopoetes wangi* HUANG **spec. nov.** - S Gansu

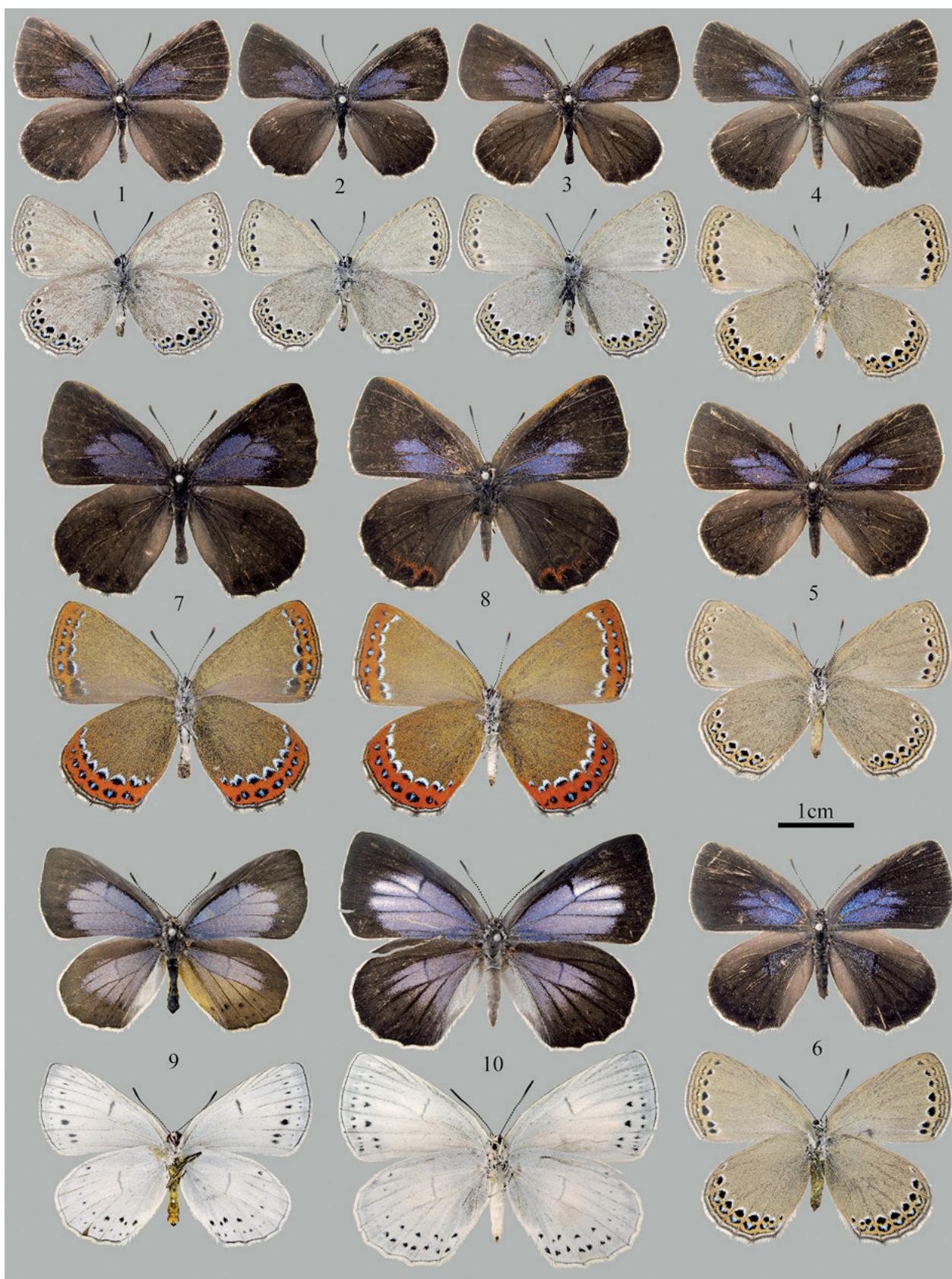
Acknowledgements: Mr. CHUN-HAO WANG (Beijing) kindly shared his information with the author. Mr. PENG LI accompanied the author in his collecting trip to Diebu, southern Gansu.

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Figs. 1-10: Habitus of *Artopoetes* species under same scale, upperside (upper half) and underside (lower half). (1-6) *Artopoetes wangi* spec. nov.; (1) HT ♂; (2-3) PTs ♂♂; (4-6) PTs ♀♀; (7-8) *Artopoetes praetextatus* (ФУЛОКА); (7) ♂, Jiuzhaigou, Sichuan, VI.2016; (8) ♀, Jiuzhaigou, VI.2016; (9-10) *Artopoetes pryori choui* KOIWAYA; (9) ♂, Diebu, Gansu, VII.2016; (10) ♀, Diebu, VII.2016.

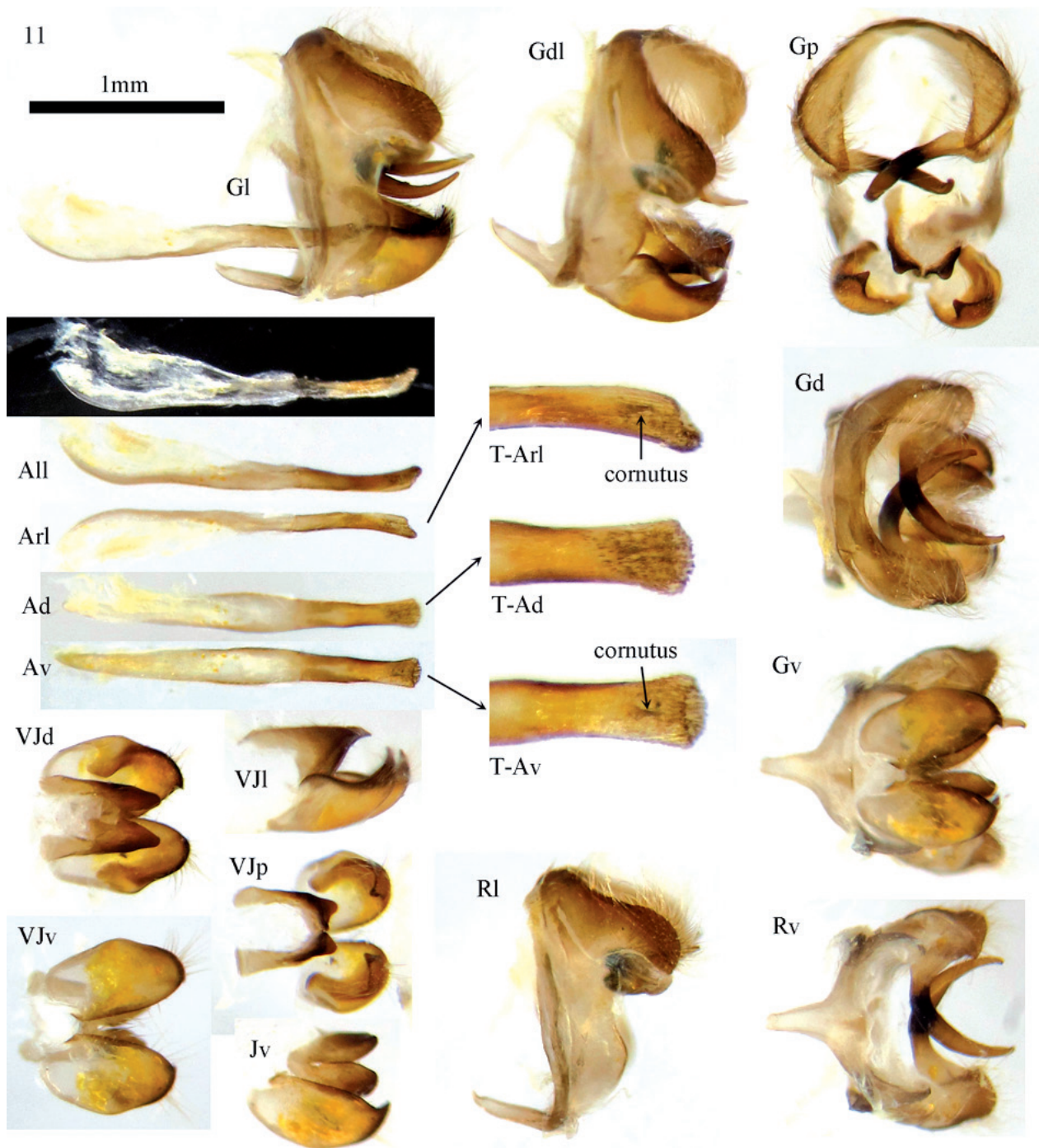


Fig. 11: ♂ genitalia of *Artopoetes wangi* spec. nov. at same scale (except for T-Arl, T-Ad and T-Av), taken from HT. Gl = genitalia in lateral view; Gdl = genitalia in dorsolateral view; Gp = genitalia in posterior view; Gd = genitalia in dorsal view; Gv = genitalia in ventral view; Rl = ring in lateral view; Rv = ring in ventral view; VJd = valva plus juxta in dorsal view; VJv = valva plus juxta in ventral view; VJl = valva plus juxta in lateral view; VJp = valva plus juxta in posterior view; Jv = juxta in ventral view, with left valva removed; All = aedoeagus in left lateral view; Arl = aedoeagus in right lateral view; Ad = aedoeagus in dorsal view; Av = aedoeagus in ventral view; T-Arl = enlarged tip of aedoeagus in right lateral view; T-Ad = enlarged tip of aedoeagus in dorsal view; T-Av = enlarged tip of aedoeagus in ventral view.

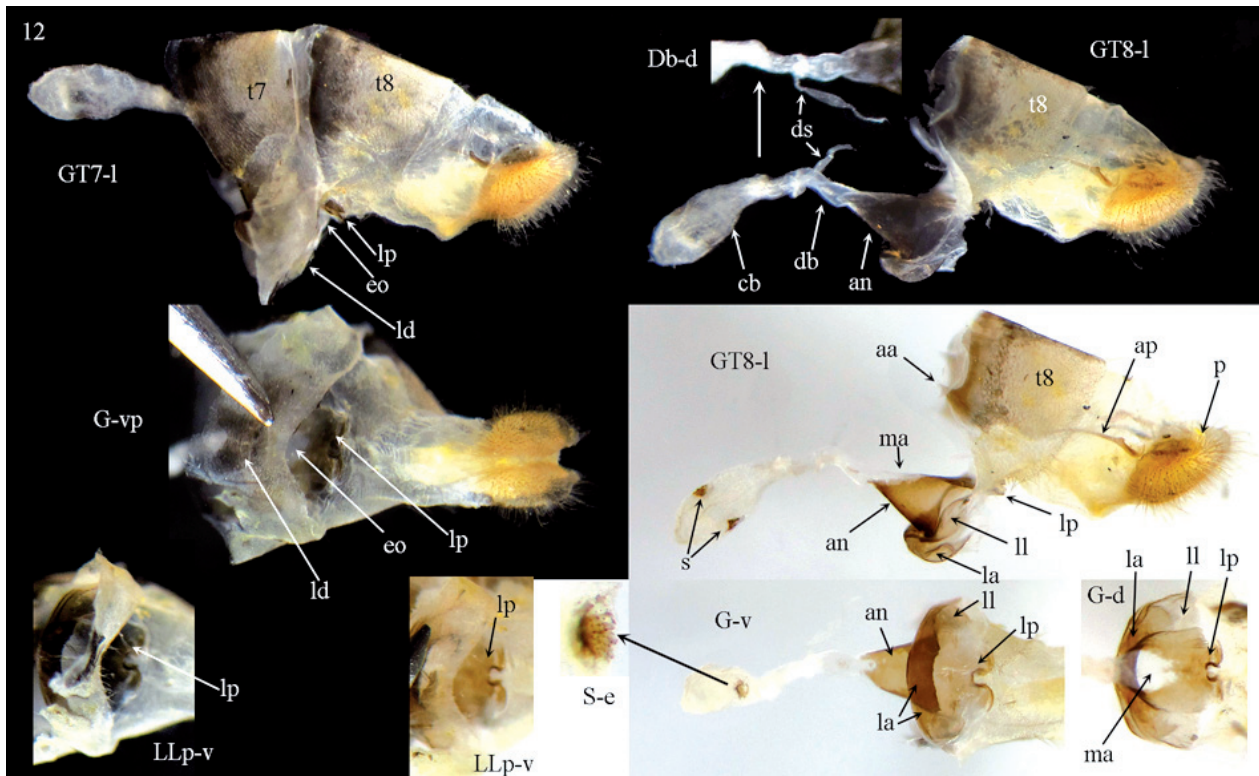


Fig. 12: ♀ genitalia of *Artopoetes wangi* spec. nov. at same scale (except for S-e), taken from PT (fig. 4). GT7-l = genitalia plus 7th tergum in lateral view; Db-d = ductus bursae in dorsal view; GT8-l = genitalia in lateral view, with only 8th tergum present; G-vp = genitalia in ventroposterior view; G-d = genitalia in dorsal view; G-v = genitalia in ventral view; S-e = signum enlarged; LLp-v = lodix (7th sternum) plus lamella postvaginalis in ventral view; t7 = 7th tergum; t8 = 8th tergum; lp = lamella postvaginalis; eo = entrance of ostium; ld = lodix; ds = ductus seminalis; cb = corpus bursae; db = ductus bursae; an = antrum; aa = apophysis anterioris; ap = apophysis posterioris; p = papilla analis; ll = lateral lamella; la = lamella antevaginalis; ma = membranous dorsal surface of antrum; s = signum.

Lycaena violacea chunhaoi subsp. nov. from Beijing, China

(Lepidoptera, Lycaenidae)

by

HAO HUANG & MING-LEI BI

received 5.IX.2016

Abstract: *Lycaena violacea chunhaoi* subsp. nov. is described from Beijing, China. The ♀ of *Lycaena violacea labrangi* BOZANO & WEIDENHOFFER, 2001 is reported for the first time.

Introduction: A new population of *Lycaena violacea* (STAUDINGER, 1892) has been discovered from Beijing by some Chinese collectors since 1994 (YANG et. al., 1994). It was considered as representing a new subspecies but the specimens had remained very rare until the summer of 2016 when the junior author and Mr. CHUN-HAO WANG successfully collected a good number of specimens. Some eggs were found and reared by the junior author, and the early stages will be reported separately by the junior author.

Abbreviations:

BSNU: Biological laboratory of Shanghai Normal University, Shanghai, P.R. China.

CBML: Collection of MING-LEI BI.

CHH: Collection of HAO HUANG.

CWCH: Collection of CHUN-HAO WANG.

HT Holotype.

PT Paratype.

TL Type locality

Lycaena violacea chunhaoi subsp. nov. (figs. 1-7, 12, 14)

Lycaena sp.: YANG et. al. (1994: 46, 112-113, fig. 28) for specimen from Beijing.

Palaeochrysophanus hippothoe: SETO (2013: 92, pl. 12, fig. L25.3) for ♀ from Donglingshan (misidentification).

HT ♂ (fig. 1): China, Beijing, Donglingshan, 1750 m, 2.VII.2016, C.-H. WANG leg., CHH, to be deposited in BSNU in future.

PTs: 4 ♂♂, 2 ♀♀ (CWCH, CHH), same data as the HT; 3 ♂♂ (CBML), Beijing, Donglingshan, 1750 m, 2.VII.2016, M.-L. BI leg.; 1 ♀ (CBML), Beijing, Donglingshan, 1750 m, 3.VII.2016, M.-L. BI leg.; 1 ♂, 1 ♀ (CBML), Beijing, Donglingshan, 1750 m, 3.VII.2011, M.-L. BI leg.; 6 ♂♂, 3 ♀♀ (CWCH, CHH), Beijing, Donglingshan, 1750 m, 3.VII.2016, C.-H. WANG leg.; 1 ♂, 1 ♀ (CWCH), Hebei province, Xilingshan, 28.VI.2003, C.-H. WANG leg.; 1 ♀ (CWCH), Beijing, Baihuashan, 8.VI.2007, C.-H. WANG leg. (Totally 15 ♂♂, 9 ♀♀: 1 ♂, 2 ♀♀ in CHH; 10 ♂♂, 5 ♀♀ in CWCH; 4 ♂♂, 2 ♀♀ in CBML.)

Etymology: This new subspecies is named in honor of Mr. CHUN-HAO WANG, Beijing, who first discovered this new subspecies.

Diagnosis: This new subspecies can be easily distinguished from the nominotypical subspecies from Altai (type locality: Kentei), Sayan Mts. (S. Siberia), Mongolia and Amur region (BOZANO & WEIDENHOFFER, 2001; TSHIKOLOVETS, BIDZILYA & GOLOVOSKIN, 2002; TSHIKOLOVETS, YAKOVLEV & BALINT, 2009; TSHIKOLOVETS, YAKOVLEV & KOSTERIN, 2009) and *L. v. labrangi* BOZANO & WEIDENHOFFER, 2001 from S. Gansu (type locality: Xiahe) by the following combination of characters.

Both sexes:

- 1) Black marginal band on forewing upperside constantly wider than that of the other two subspecies.
- 2) Black discocellular spot on hindwing upperside ill-defined in ♂ and hardly visible in ♀, not clearly marked in both sexes as in the other two subspecies.
- 3) Hindwing upperside except submarginal area rather uniformly dark with discal spots hardly recognizable, not more or less appearing reddish as in *L. v. violacea* (STAUDINGER) or bearing radial reddish markings along veins as in *L. v. labrangi* BOZANO & WEIDENHOFFER.
- 4) Reddish submarginal markings on hindwing upperside above vein 2 broadly interrupted by black veins, not conjoined as a complete reddish submarginal band or thinly interrupted by veins as in the other two subspecies.
- 5) Forewing with apex more acutely pointed and termen less convex than in *L. v. labrangi* BOZANO & WEIDENHOFFER.
- 6) Ground color of hindwing underside markedly paler than in *L. v. labrangi* BOZANO & WEIDENHOFFER.

- 7) All black spots on hindwing underside associated with more conspicuous whitish rings than in *L. v. labrangi* BOZANO & WEIDENHOFFER.
 8) All black submarginal spots on forewing underside markedly larger than in *L. v. violacea* (STAUDINGER).

Individual variations: The following characters are found to be individually variable for this new subspecies: 1) black discal spots on forewing upperside are variable in size; 2) postdiscal area of hindwing upperside occasionally bears blue scales; 3) discal area of forewing upperside in ♀ often bears the powdered black scales.

Genitalia morphology: Two ♂♂ of the new subspecies were dissected, and two ♂♂ of *L. v. labrangi* BOZANO & WEIDENHOFFER were dissected for a comparison. There is no marked difference between these two subspecies, except for the size of juxta (figs. 12-13). Moreover, no marked ♂ genital difference can be found between *L. v. violacea* (STAUDINGER) and the foregoing two subspecies, with references to BOZANO & WEIDENHOFFER's (2001) illustration.

The ♀ genitalia of the new subspecies (fig. 14) are described as follows. Apophysis anterioris absent. Apophysis posterioris nearly as long as height of papilla analis. Lamella antevaginalis fully developed as an elongate band nearly as long as 8th tergum. Lamella postvaginalis weakly developed as a pair of lateral sclerites, leaving the central area membranous. Antrum well developed, with dorsal surface membranous. Ductus bursae about twice longer than antrum, with attachment point of ductus seminalis at posterior portion on dorsal surface. A pair of sclerites appeared on the inner wall of ventral surface of ductus bursae just anterior to attachment point of ductus seminalis. Corpus bursae elongate with a very long entrance, and with signa appeared dorsally and ventrally. Signum elongate.

Remarks: It is interesting that all the three known subspecies are well isolated from each other, both geographically and morphologically. There is no intermediate form found between these three subspecies. An examination of ♂ genitalia however does not support a specific division between these three taxa. A further study on the early stages may give more useful information in taxonomy of this group of butterflies. It should be noted that the ♀ of *L. v. labrangi* BOZANO & WEIDENHOFFER is reported and figured herein for the first time.

Acknowledgements: Mr. CHUN-HAO WANG (Beijing) kindly allowed the authors to study his collection, and accompanied the junior author in collecting the major part of the type specimens in the summer of 2016. GIAN CRISTOFORO BOZANO (Italy) kindly shared his information of *Lycaena violacea labrangi* BOZANO & WEIDENHOFFER with the senior author.

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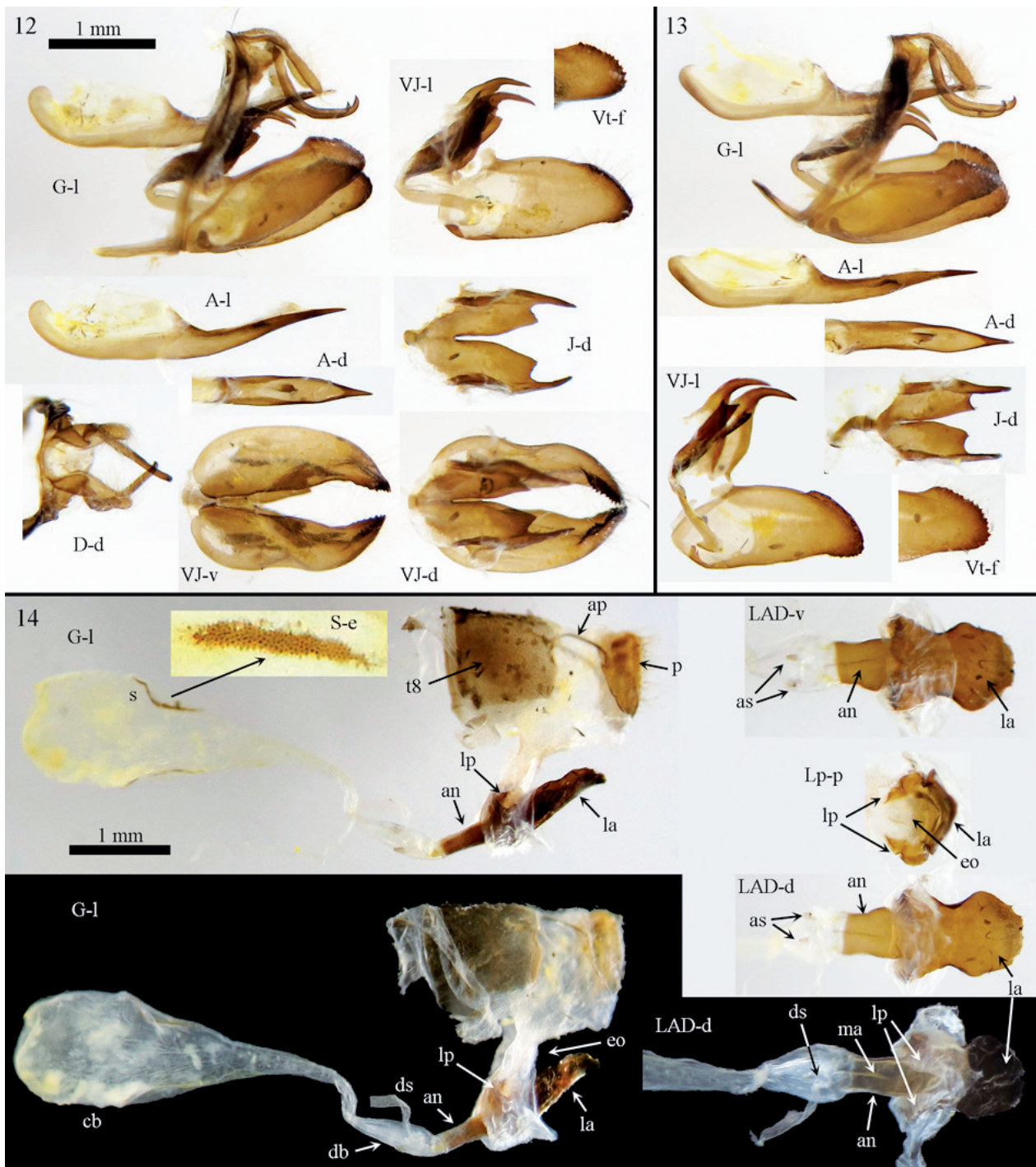
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Figs. 1-11: Habitus of *Lycaena violacea* (STAUDINGER, 1892) under same scale, upperside (upper half) and underside (lower half). (1-7) *Lycaena violacea chunhaoi* **subspec. nov.**; (1) HT ♂; (2-4) PT ♂♂; (5-7) PT ♀♀; (8-11) *Lycaena violacea labrangi* BOZANO & WEIDENHOFFER, 2001; (8-9) ♂♂, Xiahe, Gansu, VII.2016; (10-11) ♀♀, Xiahe, Gansu, VII.2015.



Figs. 12-13: ♂ genitalia of *Lycaena violacea* (STAUDINGER, 1892) at same scale. (12) *Lycaena violacea chunhaoi* **subspec. nov.**; (13) *Lycaena violacea labrangi* BOZANO & WEIDENHOFFER, 2001. G-l = genitalia in lateral view; A-l = aedeagus in left lateral view; A-d = aedeagus in dorsal view; VJ-l = right valva plus juxta in lateral view; Vt-f = tip of left valva in full face; J-d = juxta in dorsal view; D-d = dorsum in dorsal view; VJ-v = valvae plus juxta in ventral view; VJ-d = valvae plus juxta in dorsal view.

Fig. 14: ♀ genitalia of *Lycaena violacea chunhaoi* **subspec. nov.** at same scale (except for S-e). G-l = genitalia plus 8th tergum in lateral view; S-e = signum enlarged; LAD-v = lamellae, antrum and ductus bursae in ventral view; LAD-d = lamellae, antrum and ductus bursae in dorsal view; Lp-p = lamellae in posterior view to show full face of lamella postvaginalis; t8 = 8th tergum; ap = apophysis posterioris; p = papilla analis; s = signum; la = lamella antevaginalis; lp = lamella postvaginalis; an = antrum; eo = entrance of ostium; ds = ductus seminalis; cb = corpus bursae; db = ductus bursae; as = pair of sclerites just anterior to attachment point of ductus seminalis; ma = membranous dorsal surface of antrum.

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