

## Additional notes on the genus *Lethe* HÜBNER, 1819 from China - I

(Lepidoptera, Nymphalidae & Satyrinae)

BY

SONG-YUN LANG

received 23.IV.2018

**Abstract:** Some species of the genus *Lethe* HÜBNER, 1819 from China are studied in this paper. *Lethe naga* DOHERTY, 1889 and *L. philemon* FRUHSTORFER, 1902 are recorded from the fauna of China for the first time. The relationship of *L. naga* DOHERTY and *L. helena* LEECH, 1891 is studied. The result is that *L. naga* DOHERTY is a species which includes the following subspecies: *L. naga naga* DOHERTY, *L. naga helena* LEECH, 1891 stat. nov. and *L. naga pseudonaga* subspec. nov.

“The Nymphalidae of China (Lepidoptera, Rhopalocera). Part II. Satyrinae (partim): Tribe Satyrini (partim): Subtribes Eritina, Ragadiina, Lethina, Parargina” was published recently by the present author, and in that work the genus *Lethe* HÜBNER, 1819 from China was reviewed and 100 Chinese species were recorded (LANG, 2017). Still, the study of *Lethe* HÜBNER from the Chinese fauna by the present author is by no means complete and additional notes like this will be expected in the future.

Specimens in this study are preserved in Dr. SONG-YUN LANG’s private collection, Chengdu, Sichuan, China. The HT of *L. naga pseudonaga* subspec. nov. is preserved in the Chongqing Museum of Natural History, China (CMNH). A PT ♀ of *L. naga pseudonaga* subspec. nov. is kept in Mr. SI-YAO HUANG’s private collection (HSY), Zhuhai, Guangdong, China.

### *Lethe naga* DOHERTY, 1889

J. asiat. Soc. Bengal 58 (2): 123, pl. 10: 4. TL: Margherita, Assam.

Though *L. naga* DOHERTY and *L. helena* LEECH are very similar in appearance, their true relationship has been ignored for a long time, the former species has been usually mentioned in some works of the Oriental region (e.g. FRUHSTORFER, in SEITZ, 1911; d’ABRERA, 1985) whereas the latter in those works of the Palearctic region (e.g. SEITZ, 1909; d’ABRERA, 1990), except the work of DE LESSE (1957) who properly put them into the *lanaris*-group together with *L. lanaris* BUTLER, 1877. In mountainous areas of southern China, *L. helena* LEECH is not uncommon. Chinese students of butterflies often intuitively think that *L. helena* LEECH is similar to *L. naga* DOHERTY. Recently Mr. HUANG HAO collected a series of *L. naga* DOHERTY from Xishuang Banna, S. Yunnan and sent the present author two ♂♂ for study, therefore it is possible now to clarify the relationship of *L. naga* DOHERTY and *L. helena* LEECH. Judging the superficial appearances, the two species are very similar with each other and only few characters can be used for identification, so the structure of ♂ genitalia is very important. Luckily the differences in ♂ genitalia seem to be found in *L. naga* DOHERTY and *L. helena* LEECH: crest on the uncus of *L. naga* DOHERTY is sharply pointed whereas in *L. helena* LEECH it is weakly and roundly swollen; apex of the valva of *L. naga* DOHERTY is simply round whereas in *L. helena* LEECH it bears a sharp apical spine. However, after observation of more specimens, it has been found that these characters mentioned above have transitional forms and are even variable in a local population. Biogeographically, *L. naga* DOHERTY and *L. helena* LEECH are allopatric, the range of the former is at the west, viz. from eastern Himalayan region to northern Indo-Chinese Peninsula and range of the latter is at the east, viz. the vast southern China. Therefore, treating them as subspecies of one species can easily resolve the problem because individuals or populations with transitional characters can be found. The evolutionary stage of *L. naga* DOHERTY-*L. helena* LEECH now is that a speciation event is happening at their wide range from west to east, and two deeply divergent subspecies have been formed respectively at two sides. According to the priority law, *L. helena* LEECH which was published later should be a junior synonym of *L. naga* DOHERTY, but a valid subspecies of it: *L. naga helena* LEECH stat. nov. Population of this newly combined species from Hainan Island, which previously has been considered as *L. helena* LEECH (LANG, 2017) or as *L. lanaris* BUTLER in GU & CHEN (1997), is geographically well isolated from those mainland and Indo-Chinese populations and is described as a new subspecies, viz. *L. naga pseudonaga* subspec. nov.

### *Lethe naga naga* DOHERTY, 1889 (figs: 1, 9, 10, 19a-b, 24)

**Diagnostic characters:** Ground colour on both sides more blackish; forewing of ♀ with whitish discal band wide; hindwing ventral side with the inner discal line only present from the costa to the cubitus, but very obscure or absent in space 1b; crest on the uncus sharply pointed; apex of the valva simply round and not sharply pointed.

**Material:** 2 ♂♂, CHINA: Yunnan, Mengla, Mohan, 22-24.IX.2017, leg. HAO HUANG.

**Distribution:** China (S. Yunnan), N. Vietnam, Laos, Myanmar, N. Thailand, N.E. India.

### *Lethe naga helena* LEECH, 1891 stat. nov. (figs: 3-7, 13-17, 19f-m, 21, 22)

Entomologist 24 (Suppl.): 3. TL: Chia-Ting-Fu [Leshan, Sichuan].

*Lethe helena obscura* MELL (1942), Arch. Naturgesch., Leipzig (N. F.) B 11: 279. TL: Kuautun [Guadun, Fujian]. Junior primary homonym of *Lethe callipteris obscura* NAKAHARA, 1926.

*Lethe lanaris*: WANG & TANG (2012) (nec BUTLER), Butt. Guangxi Maoershan: pl. 55: fig. 1-6; ZHU et al. (2017) (nec BUTLER), Butt. Anhui: 103, fig. of ♂.

**Diagnostic characters:** Ground colour on both sides more brownish; forewing of ♀ with whitish discal band variable from narrow to wide; hindwing ventral side with the inner discal line usually well present in space 1b; dorsal ridge of uncus weakly swollen, not sharply pointed; apex of the valva usually having a sharp apical spine.

**Notes:** A *lanaris*-like form (figs: 4, 7, 17) with discal line on forewing ventral side not so oblique is known and it was therefore often misidentified as *Lethe lanaris* BTL. (figs: 8, 18) in some domestic works, such as in ZHU et al. (2017) from S. Anhui and in WANG & TANG (2012) from N. Guangxi. After checking its ♂ genitalia, it is uncontroversially a form of *L. naga helena* LEECH, 1891 stat. nov. but neither *L. lanaris* BTL. nor a distinct species.

**Material:** 1 ♂, CHINA: Zhejiang, Lin'an, West Tianmushan, 350 m, 7.VI.2008, leg. JIAN-QING ZHU; 2 ♂♂, 2 ♀♀, CHINA: Jiangxi, Longnan, Mt. Jiulianshan, 24.V-18.IX.2012, 19.VI.2013, leg. HUA-LIN HU; 11 ♂♂, 1 ♀, CHINA: Guangdong, Ruyuan, Nan-ling, 800-1200 m, 24.-27.V.2014, legs. SONG-YUN LANG & GUO-XI XUE; 7 ♂♂, CHINA: Guangxi, Jinxiu, Hekou, 700 m, 12.-15.V.2015, leg. SONG-YUN LANG; 2 ♂♂, CHINA: Guangxi, Jinxiu, Mt. Shengtang-shan, 1200 m, 16.V.2015, leg. SONG-YUN LANG; 2 ♂♂, 1 ♀, CHINA: Guangxi, Jinxiu, Mt. Lianhua-shan, 1000 m, 19.-21.V.2015, legs. SONG-YUN LANG & JIANG HOU; 1 ♂, CHINA: Guangxi, Xing'an, Mt. Maoer-shan, 1600 m, 25.V.2015, leg. SONG-YUN LANG.

**Distribution:** China (Zhejiang, S. Anhui, Jiangxi, Fujian, Guangdong, Guangxi, Sichuan).

***Lethe naga p s e u d o n a g a* subspec. nov.** (figs: 2, 11, 12, 19c-e, 23)

*Lethe lanaris*: Gu & Chen (1997) (nec BUTLER), Butt. Hainan: 147, fig. 122.

*Lethe helena*: LANG (2017) (nec LEECH), Nymphalidae of China II: 99.

HT ♂, CHINA: Hainan, Mt. Wuzhishan, 1300-1600 m, 17.IV.2015, leg. SONG-YUN LANG, kept in CMNH. PT: 7 ♂♂, 1 ♀, CHINA: Hainan, Mt. Wuzhishan, 1300-1600 m, 14.-18.IV.2015, leg. SONG-YUN LANG; 2 ♂♂, 2 ♀♀, CHINA: Hainan, Lingshui, Mt. Diaoluoshan, 20.-21.IV.2015, leg. SONG-YUN LANG; 1 ♀, CHINA: Hainan, Mt. Diaoluoshan, 25.IV.2015, leg. YI-KUI LUO, kept in HSY.

**Etymology:** The subspecific name *pseudonaga* composed by the Latin prefix *pseud-* and the name *naga*, means “false naga”.

**Diagnosis:** This new subspecies can be distinguished from other subspecies by the combination of the following characters:

1. The new subspecies is smaller (forewing length of ♂, FWL = 28.5-29 mm) than *L. n. naga* DOHERTY (FWL = 35-36 mm) and *L. n. helena* LEECH (FWL = 29.5-33 mm).
2. Ground colour on both sides is similar to *L. n. helena* LEECH and less blackish comparing with that of *L. n. naga* DOHERTY.
3. The inner discal line on hindwing ventral side is absent in space 1b as in *L. n. naga* DOHERTY, whereas it is usually well present in *L. n. helena* LEECH.
4. Crest on the dorsal ridge of uncus is more or less pointed as in *L. n. naga* DOHERTY, whereas it is usually weakly swollen and not pointed in *L. n. helena* LEECH.
5. Valva is shorter than those of *L. n. naga* DOHERTY and *L. n. helena* LEECH.
6. Apex of the valva is simply round as in *L. n. naga* DOHERTY, whereas it usually has a sharp spine in *L. n. helena* LEECH.

**Distribution:** China (Hainan Is.).

***Lethe philemon* FRUHSTORFER, 1902 (figs: 25-27)**

*Lethe baucis philemon* FRUHSTORFER, 1902, Berl. Ent. Z. **1902**: 20. TL: Than Moi, Tonkin.

*Lethe naga philemon*: FRUHSTORFER, in SEITZ (1911), Macrolepid. World **9**: 295.

*Lethe philemon*: D'ABRERA (1985), Butt. Oriental Region. **2**: 426.

*Lethe butleri butleri*: LANG (2017) (nec LEECH), Nymphalidae of China **2**: 101.

**Notes:** LANG (2017: p. 101-102) recorded 2 ♂♂ of *Lethe butleri butleri* LEECH, 1889 from southern Guangxi Province as “... GU-ANGXI: 2 ♂♂, Longzhou, Nonggang, 200 m, 27.-28.IV.2015, leg. S-Y. LANG (LSY); ...”, and this record of *L. butleri butleri* LEECH is unfortunately a misidentification of *L. philemon* FRUHSTORFER, 1902 which is a species only known from northern Vietnam before. Therefore, the record of *L. butleri* LEECH is excluded from S. Guangxi fauna, which is a typical Oriental component. Basing upon the structure of ♂ genitalia, *L. philemon* FRUHST. is very close to *L. laodamia* LEECH, 1891 (fig: 28) and therefore it was treated as a member of the *laodamia*-group sensu LANG (2017) in which species have their uncus not protruding dorsally and their valva broad throughout, the apex elongated and enlarged.

**Material:** 2 ♂♂, CHINA: Guangxi, Longzhou, Nonggang, 200 m, 27-28.IV.2015, leg. SONG-YUN LANG; 1 ♂, CHINA: Guangxi, Longzhou, Nonggang, leg. XIAO-MING ZHU; 1 ♀, CHINA: Guangxi, Longzhou, 25.III.2008, leg. YI-KUI LUO.

**Distribution:** China (S. Guangxi), N. Vietnam.

**Acknowledgements:** I express my sincere thanks to Mr. HUANG HAO (Qingdao), Mr. XUE GUOXI (Zhenzhou), Mr. HU HUALIN (Jiulianshan), Mr. HUANG SIYAO (Zhuhai), Mr. LIU ZIHAO (Huainan), Mr. SUN WENHAO (Ji'an), Mr. ZHU JIANQING (Shanghai), Mr. YI-KUI LUO (Hongkong) and Mr. ZHU XIAOMING (Wuhan) for their various help.

References

- BOZANO, G. C. (1999): Guide to the Butterflies of the Palearctic Region. Satyridae 1, Subfamily Elymniiinae, Tribe Lethini, *Lasiommata*, *Pararge*, *Lopinga*, *Kirinia*, *Chonala*, *Tatinga*, *Rhaphicera*, *Ninguta*, *Neope*, *Lethe*, *Neorina*. - Omnes Artes, Milano.
- D'ABRERA, B. (1985): Butterflies of the Oriental Region **2**. Nymphalidae, Satyridae & Amathusidae. - Hill House Publishers, Melbourne.
- D'ABRERA, B. (1990): Butterflies of the Holarctic Region **1**. Papilionidae, Pieridae, Danaidae & Satyridae (Partim). - Hill House Publishers, Melbourne.
- DOHERTY, W. (1889): Notes on Assam butterflies. - Journal of the Asiatic Society of Bengal **58** (2): 118-134, pl. X, Calcutta.
- GU, M. B. & P. Z. CHEN (1997): Butterflies in Hainan Island. - China Forestry Publishing House, Beijing.
- KIMURA, Y., AOKI, T., YAMAGUCHI, S., UÉMURA, Y. & T. SAITO (2016): The butterflies of Thailand based on YUNOSUKE KIMURA Collection **3** Nymphalidae. - Mokuyosha, Tokyo.
- LANG, S. Y. (2017): The Nymphalidae of China (Lepidoptera, Rhopalocera). Part II. Satyrinae (partim): Tribe Satyrini (partim): Subtribes Eritina, Ragadiina, Lethina, Paragina. - Tshikolovets Publications, Pardubice.
- DE LESSE, H. (1957): Révision du genre LETHA (s. l.) (Lep. Nymphalidae Satyrinae). - Ann. Soc. ent. France **125**: 75-95, Paris.
- MELL, R. (1942): Beiträge zur Fauna sinica. XXII: Inventur und ökologisches Material zu einer Biologie der südchinesischen Lepidopteren: die Amathusiiden und Satyriden Süd- (und Südost-) Chinas. - Archiv Naturgesch. (N. F.) **11** (3): 221-291, Leipzig.
- MONASTYRSKII, A. L. (2005): Butterflies of Vietnam **1**, Nymphalidae: Satyrinae. - Galaxy Studio, Hanoi.
- OSADA, S., UÉMURA, Y. & J. UEHARA (1999): An illustrated checklist of the butterflies of Laos R. D. R. - Mokuyosha, Tokyo.
- SEITZ, A. (1907-1909): The Macrolepidoptera of the world **1**. - Alfred Kernen, Stuttgart.
- SEITZ, A. (1908-1928): The Macrolepidoptera of the world **9**. - Alfred Kernen, Stuttgart.
- TALBOT, G. (1947 [1949]): The Fauna of British India, Ceylon and Burma, Butterflies **2**. - Taylor & Francis, Ltd., London.
- WANG, M. & D. TANG (2012): Butterflies of Guangxi Maoershan National Nature Reserve. - Guangxi Nationalities Publishing House, Nanning.
- ZHU, L. X., LIU, Z. H., YU, L. & Y. Y. OU (2017): Butterfly fauna of Anhui. - University of Science and Technology of China Press, Hefei.

Address of the author

SONG-YUN LANG

Chongqing Museum of Natural History, Beibei, 400700, Chongqing, China  
langsongyun@126.com

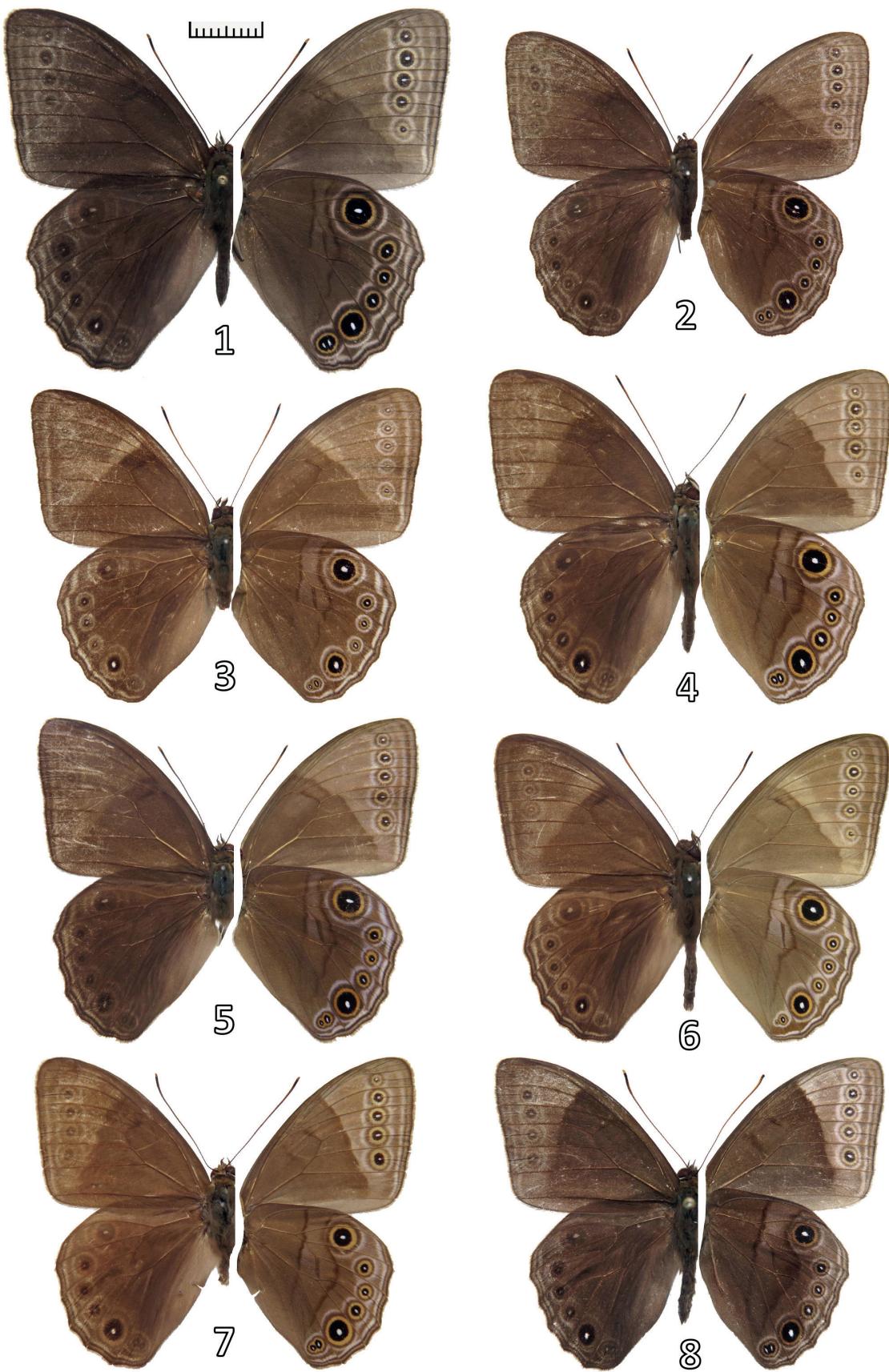


Fig. 1: *Lethe naga naga* DOHERTY, 1889, ♂, CHINA, Yunnan, Mengla, SATY0659, dorsal- and ventral side.  
 Fig. 2: *Lethe naga pseudonaga* subspec. nov., HT ♂, CHINA, Hainan, Wuzhishan, SATY0671, dorsal- and ventral side.  
 Fig. 3: *Lethe naga helena* LEECH, 1891 stat. nov., ♂, CHINA, Guangdong, Ruyuan, SATY0672, dorsal- and ventral side.  
 Fig. 4: *Lethe naga helena* LEECH, 1891 stat. nov., ♂, CHINA, Guangxi, Maoershan, SATY0681, dorsal- and ventral side.  
 Fig. 5: *Lethe naga helena* LEECH, 1891 stat. nov., ♂, CHINA, Guangxi, Jinxiu, SATY0676, dorsal- and ventral side.  
 Fig. 6: *Lethe naga helena* LEECH, 1891 stat. nov., ♂, CHINA, Guangxi, Jinxiu, SATY0680, dorsal- and ventral side.  
 Fig. 7: *Lethe naga helena* LEECH, 1891 stat. nov., ♂, CHINA, Zhejiang, Lin'an, SATY0678, dorsal- and ventral side.  
 Fig. 8: *Lethe lanaris* BUTLER, 1877, ♂, CHINA, Shaanxi, Ningshan, SATY0497, dorsal- and ventral side.

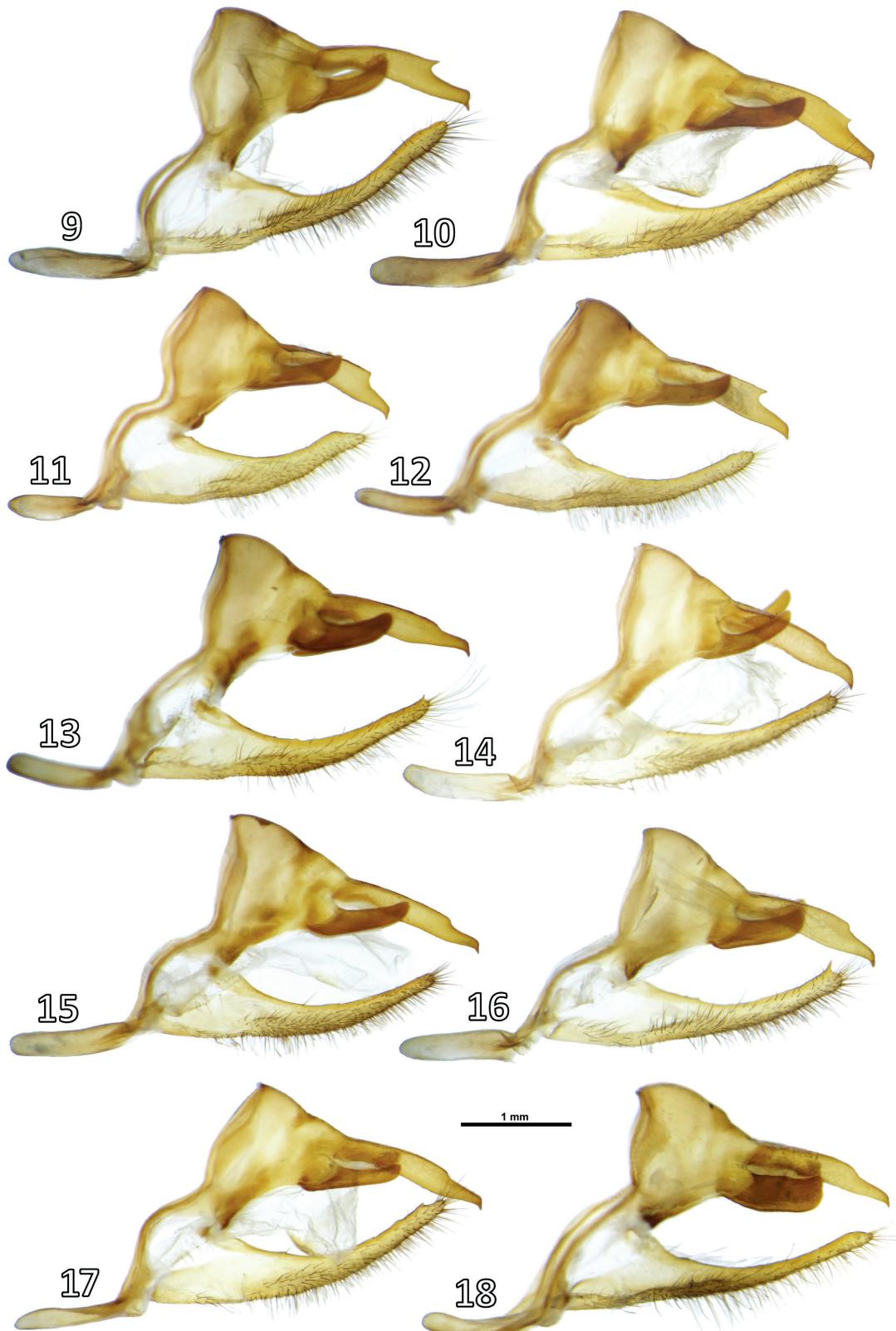


Fig. 9, 10: ♂ genitalia of *Lethe naga naga* DOHERTY, 1889 in lateral view with left valva and aedeagus removed, (9) CHINA, Yunnan, Mengla, SATY0659; (10) CHINA, Yunnan, Mengla, SATY0674.

Fig. 11, 12: ♂ genitalia of *Lethe naga pseudonaga* subspec. nov. in lateral view with left valva and aedeagus removed, (11) HT, CHINA, Hainan, Wuzhishan, SATY0671; (12) PT, CHINA, Hainan, Lingshui, SATY0675.

Fig. 13-17: ♂ genitalia of *Lethe naga helena* LEECH, 1891 stat. nov. in lateral view with left valva and aedeagus removed, (13) CHINA, Jiangxi, Jiulianshan, SATY0524; (14) CHINA, Guangdong, Ruyuan, SATY0677 (15) CHINA, Guangxi, Jinxiu, SATY0676; (16) CHINA, Guangxi, Jinxiu, SATY0680. (17) CHINA, Zhejiang, Lin'an, SATY0678

Fig. 18: ♂ genitalia of *Lethe lanaris* BUTLER, 1877 in lateral view with left valva and aedeagus removed, CHINA, Shaanxi, Ninghan, SATY0497.

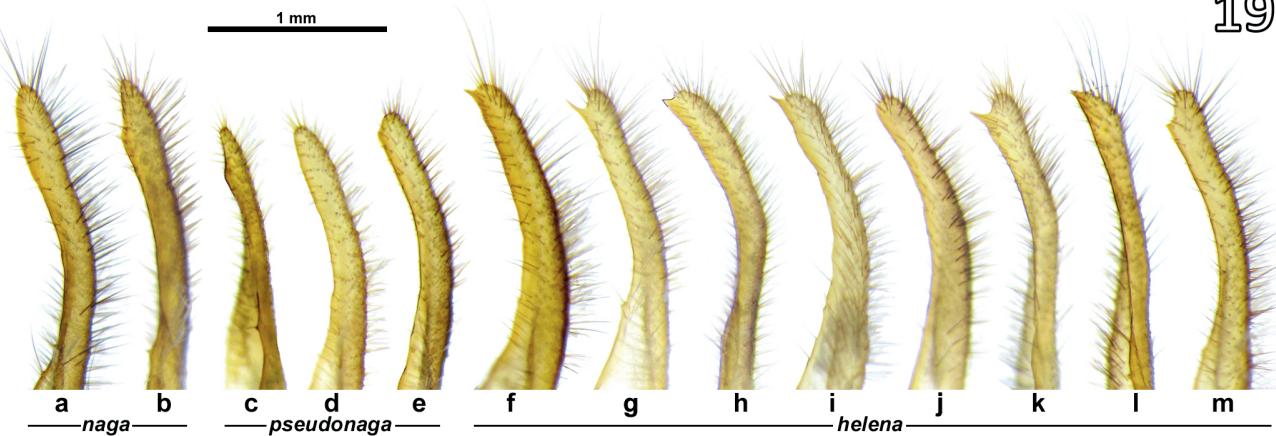


Fig. 19: Tip of valva in dorsal view. a - *Lethe naga naga* DOHERTY, 1889, CHINA, Yunnan, Mengla, SATY0659; b - *L. n. naga* DOHERTY, CHINA, Yunnan, Mengla, SATY0674; c - *L. n. pseudonaga* subspec. nov., HT, CHINA, Hainan, Wuzhishan, SATY0671; d - *L. n. pseudonaga* subspec. nov., PT, CHINA, Hainan, Lingshui, SATY0675; e - *L. n. pseudonaga* subspec. nov., PT, CHINA, Hainan, Wuzhishan, SATY0679; f - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Jiangxi, Jiulianshan, SATY0524; g - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Jiangxi, Jiulianshan, SATY0673; h - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Guangdong, Ruyuan, SATY0672; i - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Guangdong, Ruyuan, SATY0677; j - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Guangxi, Jinxiu, SATY0676; k - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Guangxi, Jinxiu, SATY0680; l - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Guangxi, Xing'an, SATY0681; m - *L. n. helena* LEECH, 1891 stat. nov., CHINA, Zhejiang, Lin'an, SATY0678.

## Southern China

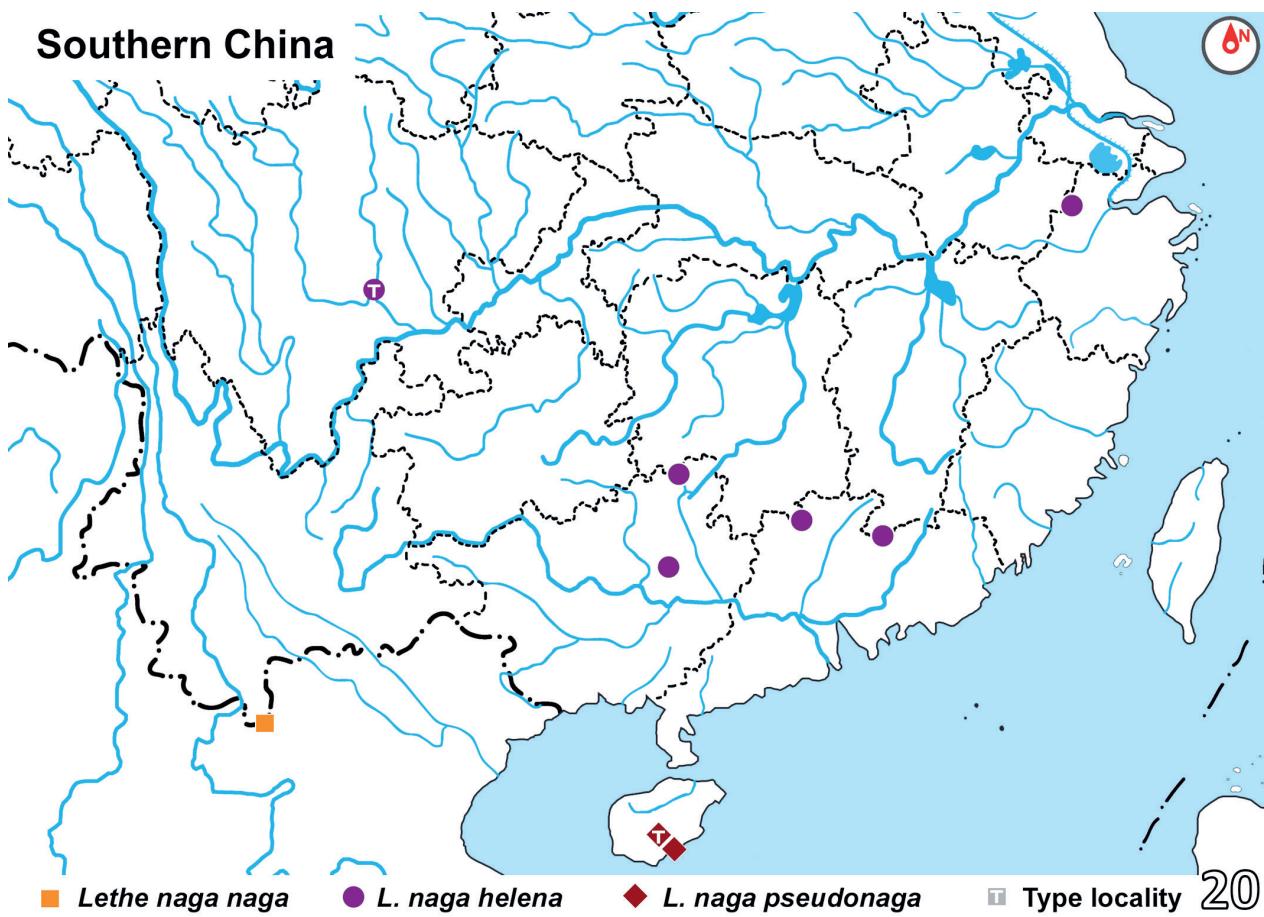


Fig. 20: Distribution of *Lethe naga* DOHERTY, 1889 in China

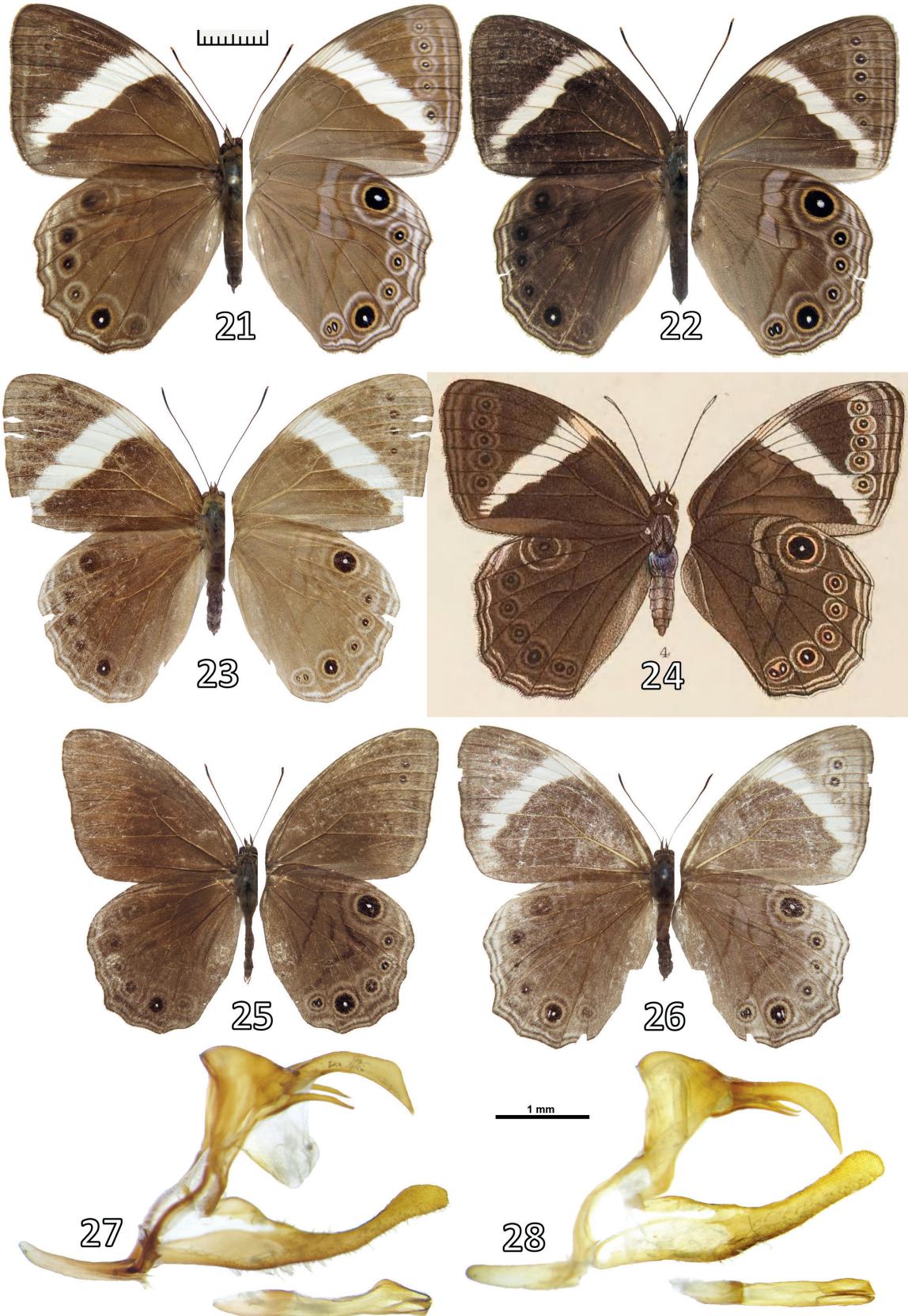


Fig. 21, 22: *Lethe naga helena* LEECH, 1891 stat. nov., (21)♀, CHINA, Guangxi, Jinxiu, dorsal- and ventral side; (22)♀, CHINA, Jiangxi, Jiulianshan, dorsal- and ventral side.

Fig. 23: *Lethe naga pseudonaga* subspec. nov., PT ♀, CHINA, Hainan, Diaoluoshan, HSY, dorsal- and ventral side, the figure with horizontal flip.

Fig. 24: *Lethe n. naga* DOHERTY, 1889, HT ♀, "Plate 10: 4" in DOHERTY (1889), INDIA, Assam, Margherita, the figure without scale bar.

Fig. 25-27: *Lethe philemon* FRUHSTORFER, 1902, (25)♂, CHINA, Guangxi, Longzhou, dorsal- and ventral side; (26)♀, CHINA, Guangxi, Longzhou, dorsal- and ventral side; (27)♂ genitalia in lateral view with left valva removed, CHINA, Guangxi, Longzhou, SATY0670.

Fig. 28: ♂ genitalia of *Lethe laodamia* LEECH, 1891 in lateral view with left valva removed, CHINA, Guizhou, Fanjingshan, SATY0460.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Atalanta](#)

Jahr/Year: 2018

Band/Volume: [49](#)

Autor(en)/Author(s): Lang Song-Yun

Artikel/Article: [Additional notes on the genus Lethe Hübner, 1819 from China - I  
\(Lepidoptera, Nymphalidae & Satyrinae\) 121-126](#)