SHILAP Revista de lepidopterología, 49 (195) septiembre 2021: 569-575 eISSN: 2340-4078 ISSN: 0300-5267
https://doi.org/10.57065/shilap.293

The discovery of the second specimen of *Striartona clathrata* (Poujade, 1886), hitherto known only from the female holotype (Lepidoptera: Zygaenidae, Procridinae, Artonini)

S. Huang & K. A. Efetov

Abstract

The second specimen of a rare and little known Procridinae species, *Striartona clathrata* (Poujade, 1886), was captured in Ningshan County, Shaanxi Province, Central China and is reported hereinafter. The adults and female genitalia of this specimen and the holotype of *Striartona clathrata* are compared and illustrated.
KEY WORDS: Lepidoptera, Zygaenidae, Procridinae, Artonini, Sichuan, Shaanxi, China.

Descubrimiento del segundo espécimen de *Striartona clathrata* (Poujade, 1886), hasta ahora conocido solamente del holotipo hembra (Lepidoptera: Zygaenidae, Procridinae, Artonini)

Resumen

A continuación se informa que fue capturado el segundo espécimen de *Striartona clathrata* (Poujade, 1886) en el condado de Ningshan, provincia de Shaanxi, China Central. Se comparan e ilustran los adultos y la genitalia de la hembra de *Striartona clathrata*.
PALABRAS CLAVE: Lepidoptera, Zygaenidae, Procridinae, Artonini, Sichuan, Shaanxi, China.

Introduction

Striartona Efetov & Tarmann, 2012 is a monotypic genus erected for a single species *Bintha clathrata* Poujade, 1886, originated from Moupin (now Baoxing County, Sichuan Province), Western China (EFETOV & TARMANN, 2012). The systematic status of the genus *Striartona* is clear. After the exclusion of the subfamily Phaudinae Kirby, 1892 (now it is the family Phaudidae) from the family Zygaenidae and description of a new subfamily Inouelinae Efetov & Tarmann, 2017, the family Zygaenidae (Lepidoptera) is divided into five subfamilies: Inouelinae Efetov & Tarmann, 2017; Procridinae Boisduval, 1828; Chalcosiinae Walker, 1865; Callizygaeninae Alberti, 1954; and Zygaeninae Latreille, 1809 (EFETOV, 1999, 2001b; EFETOV *et al*., 2011, 2014a, 2014c, 2016; EFETOV & TARMANN, 2012, 2017a). *Striartona clathrata* (Poujade, 1886) belongs to the tribe Artonini Tarmann, 1994 of the subfamily Procridinae (Lepidoptera: Zygaenidae) (EFETOV & TARMANN, 2012). *Striartona clathrata* seems to be a relatively rare species since currently only the holotype is known, and no further material was present in any European museum after the description. Unexpectedly, during the survey of the Lepidoptera collection of the South China Agricultural University, a second specimen, and again a female, was found by the first author and this specimen is here described and compared with the holotype of *Bintha clathrata*.

Abbreviations

SCAU = South China Agricultural University, Guangzhou, Guangdong, P. R. China
MNHN = Muséum national d'Histoire naturelle, Paris, France

Material and methods

Photos of imagines were taken by a Sony DSC-RX100 v1.00 camera. The abdomen was removed and macerated in hot 10% NaOH for examination of genitalia. Photos of genitalia were taken under Keyence VHX-5000 digital microscope. Adult and genitalia photos were all processed by Adobe Photoshop CS5® software.

Results and discussion

Striartona clathrata (Poujade, 1886) (Figs 1–7)

Material examined: ♀ (Fig. 1), P. R. China, Shaanxi Province, Ningshan County, Huangguan Town, altitude 1900-2100 m, 2-VIII-2019, leg. Yu-fei Li (Fig. 2), dissection number ZSY0001 (SCAU); Holotype ♀ of *Bintha clathrata* Poujade, 1886 (Fig. 3), printed red paper "TYPE"; printed, yellowish paper with black frame "MUS.HIST.NAT. / A. DAVID / Moupin (*Thibet*) / 1871"; handwritten, yellowish paper "Bintha / clathrata Pouj. / Ann. Soc Ent.♀ / 1886 Bullet CXVII" (Fig. 4) (MNHN).

Description of the second female adult (Figs 1, 6): length of body 9.6 mm, length of forewing 11.0 mm. Antennae mostly lost, bases of antennae black. Head capsule dorsoventrally compressed, frons blackish brown, the dorsal outer margin is covered by brownish scales and the central part is covered by a bunch of yellowish scales. Vertex black, mostly covered with yellowish scales. Chaetosema yellow, triangular, strongly extended anteriorly between ocellus and compound eye. Proboscis well developed, brown. Tegulae and patagia brownish, covered with yellowish scales. Thorax brownish dorsally and ventrally, scales mostly missing on the dorsal side and the ventral part of thorax is covered by whitish and yellowish scales. Forewing upper- and underside yellow with brown veins, the spaces between veins form yellowish streaks of different length: a long costal streak extends from wing base to about two thirds of forewing length, narrowing at the medial part; discal cell triangular and divided into two parts by a short longitudinal additional blackish brown vein situated in the anterior distal part of cell; slender yellowish streak present just beneath discal cell; slender streaks between veins R_1 and CuA_2 together form a radiation pattern at the postdiscal zone of forewing, a thick and elongate streak extends from the wing base to the termen beneath vein CuP; a short streak is present in the anal part of the wing; fringe blackish brown. Hindwing upper- and underside yellow with brown veins, the spaces between veins form yellowish streaks of different length: a long costal streak only slightly shorter than costa; an elongate streak is present beneath vein $Sc+R_1$; an oval patch is developed in discal cell and is divided into two parts by an obscure central line; four short patches are present distally between veins Rs and M_3; space beneath vein CuA_1 blackish brown, a slender streak is present beneath vein CuA_2; a long streak about two times broader as the latter streak is present in the anal part of the wing; fringe blackish brown. Hindtibia with three spurs (one medial and two apical). A single unpaired medial spur on hindtibia is typical for many Artonini species (EFETOV, 2006; EFETOV & TARMANN, 2013b, 2017b) and always absent in Procridini (EFETOV, 1996a, 1997b, 1998, 2001a, 2010, 2012; EFETOV *et al*., 2014b, 2019; EFETOV & TARMANN, 1999, 2013a, 2014a, 2014b, 2016a, 2016b). Abdomen vivid yellow, blackish-ringed at the basal two segments.

Female genitalia: Papillae anales rectangular; apophyses posteriores slender; apophyses anteriores short and tooth-like, postvaginal plate sclerotized, broad and M-shaped; ostium bursae

broad; proximal part of ductus bursae (antrum) short and broad, translucent, with folded walls. Central part of ductus bursae strongly dilated forming a large praebursa. The function of it is to accommodate the spermatophore (EFETOV & TARMANN, 2017a). Such praebursa is typical for many Procridinae species (EFETOV, 1996b, 1997a, 1998; EFETOV & TARMANN, 1999, 2013b, 2014a, 2014b, 2016a). The praebursa in *S. clathrata* is large and divided into two parts: a posterior sclerotized part and an anterior translucent part; the sclerotized part has two longitudinal rows of spines: a dense double row and a sparse single row; the anterior membranous part forms an obtuse angle with the sclerotized part, has a triangular shape with rugose surface; the distal part of ductus bursae short and narrow, tubular, translucent, with folded walls; ductus seminalis arises from the proximal part of corpus bursae; corpus bursae small, translucent, without signa.

Remarks: The second female differs slightly from the holotype female (Figs 1, 3, 6, 7) in several aspects: 1. The postmedial radiation pattern is more slender than that of the holotype; 2. The abdomen is vivid yellow with less blackish rings, while the abdomen in the holotype is dull yellow with more blackish rings; 3. The postvaginal plate is broader than that of the holotype; 4. The single row of spines in the praebursa has the proximal spines closer to the antrum and they are longer than those in the holotype; 5. The spines in the double row of spines in the praebursa are longer and denser than those in the holotype; 6. In the holotype a bundle of loose male cornuti are present in the praebursa, such cornuti (that are typical for the males of some genera of Artonini) are absent in the praebursa of the second female specimen. It means that the female holotype was collected after copulation with the male, while the second specimen most probably is a virgin. As a result the membranous part of the praebursa in the second female forms an obtuse angle with the sclerotized part, and is not situated in the same position as in the holotype.

However, as we have examined only one specimen of the Shaanxi population, it is difficult to judge whether it belongs to a species different from *S. clathrata*, a subspecies of the latter species or is just an individual variation of it. Thus, the true identity of this population can only be determined based on examination of more individuals in the future.

Distribution (Fig. 5): Sichuan (Baoxing), Shaanxi (Ningshan).

Acknowledgements

We would like to express our sincere thank to Mr Yu-fei Li (Xi'an, Shaanxi, China) for collecting the second specimen of *Striartona clathrata* and Prof. Ming-yi Tian's lab members (China) for help in taking genitalia photos. We are also indebted to Prof. Dr J. Minet (Muséum national d'Histoire naturelle, Paris, France) for help with the investigation of the holotype of *Bintha clathrata* Poujade, 1886.

BIBLIOGRAPHY

EFETOV, K. A., 1996a.– The description of the female of *Adscita* (*Zygaenoprocris*) *rjabovi* (Alberti, 1938) (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **47**(1): 31-35.

EFETOV, K. A., 1996b.– The description of the female of *Illiberis* (*Alterasvenia*) *yuennanensis* Alberti, 1951 (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **47**(2): 111-113.

EFETOV, K. A., 1997a.– Two new species of the genus *Artona* Walker, 1854 (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **48**(3): 165-177.

EFETOV, K. A., 1997b.– Three new species of the genus *Illiberis* Walker, 1854, from Taiwan and Vietnam (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **48**(4): 231-244.

EFETOV, K. A., 1998.– A revision of the genus *Goe* Hampson, [1893] (Lepidoptera: Zygaenidae, Procridinae), with descriptions of two new species.– *Entomologist's Gazette*, **49**(1): 49-62.

EFETOV, K. A., 1999.– *Inouela* gen. n. from Japan and Taiwan (Lepidoptera: Zygaenidae, Chalcosiinae).– *Entomologist's Gazette*, **50**(2): 91-95.

EFETOV, K. A., 2001a.– On the systematic position of *Zygaenoprocris* Hampson, 1900 (Lepidoptera: Zygaenidae, Procridinae) and the erection of two new subgenera.– *Entomologist's Gazette*, **52**(1): 41-48.

EFETOV, K. A., 2001b.– An annotated check-list of Forester moths (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **52**(3): 153-162.

EFETOV, K. A., 2006.– Nine new species of the genus *Chrysartona* Swinhoe, 1892 (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **57**(1): 23-50.

EFETOV, K. A., 2010.– *Illiberis* (*Hedina*) *louisi* sp. nov. (Lepidoptera: Zygaenidae, Procridinae) from China.– *Entomologist's Gazette*, **61**(4): 235-241.

EFETOV K. A., 2012.– *Adscita* (*Procriterna*) *pligori* sp. nov. (Lepidoptera: Zygaenidae, Procridinae) from Afghanistan.– *Entomologist's Gazette*, **63**(2): 99-105.

EFETOV, K. A., HOFMANN, A. & TARMANN, G. M., 2014b.– Application of two molecular approaches (use of sex attractants and DNA barcoding) allowed to rediscover *Zygaenoprocris eberti* (Alberti, 1968) (Lepidoptera, Zygaenidae, Procridinae), hitherto known only from the female holotype.– *Nota lepidopterologica*, **37**(2): 151-160. DOI: https://doi.org/10.3897/nl.37.7871.

EFETOV, K. A., HOFMANN, A., TARMANN, G. M. & TREMEWAN, W. G., 2014a.– Taxonomic comments on the treatment of the Zygaenidae (Lepidoptera) in volume 3 of *Moths of Europe*, Zygaenids, Pyralids 1 and Brachodids (2012).– *Nota lepidopterologica*, **37**(2): 123-133. DOI: https://doi.org/10.3897/nl.37.7940.

EFETOV, K. A., KUCHERENKO, E. E., PARSHKOVA, E. V. & TARMANN, G. M., 2016.– 2-butyl 2-dodecenoate, a new sex attractant for *Jordanita* (*Tremewania*) *notata* (Zeller, 1847) and some other Procridinae species (Lepidoptera: Zygaenidae).– *SHILAP Revista de lepidopterología*, **44**(175): 519-527.

EFETOV, K. A., PARSHKOVA, E. V., BAEVSKY, M. Y. & PODDUBOV, A. I., 2014c.– *Sec*-butyl ester of dodecenoate: synthesis and attractive properties.– *Ukrainian Biochemical Journal*, **86**(6): 175-182. DOI: https://doi.org/10.15407/ubj86.06.175.

EFETOV, K. A. & TARMANN, G. M., 1999.– On the systematic position of *Procris fusca* Leech, [1889] (Lepidoptera: Zygaenidae, Procridinae).– *Entomologist's Gazette*, **50**(3):163-168.

EFETOV, K. A. & TARMANN, G. M., 2012.– *A checklist of the Palaearctic Procridinae (Lepidoptera: Zygaenidae)*: 108 pp. CSMU Press, Simferopol – Innsbruck.

EFETOV, K. A. & TARMANN, G. M., 2013a.– *Illiberis* (*Alterasvenia*) *cernyi* sp. nov. (Lepidoptera: Zygaenidae, Procridinae) from northern Thailand.– *Entomologist's Gazette*, **64**(1): 33-39.

EFETOV, K. A. & TARMANN, G. M., 2013b.– *Chrysartona* (*Chrystarmanna*) *mineti* sp. nov. (Lepidoptera: Zygaenidae, Procridinae) from northern Vietnam.– *Entomologist's Gazette*, **64**(3): 197-206.

EFETOV, K. A. & TARMANN, G. M., 2014a.– *Illiberis* (*Alterasvenia*) *banmauka* sp. nov. (Lepidoptera: Zygaenidae, Procridinae) from China and Myanmar.– *Entomologist's Gazette,* **65**(1): 62-70.

EFETOV, K. A. & TARMANN, G. M., 2014b.– A new European species, *Adscita dujardini* sp. nov. (Lepidoptera: Zygaenidae, Procridinae) confirmed by DNA analysis.– *Entomologist's Gazette*, **65**(3): 179-200.

EFETOV, K. A. & TARMANN, G. M., 2016a.– *Pseudophacusa multidentata* Efetov & Tarmann, a new genus and species of Procridini from Myanmar, China and Laos (Lepidoptera: Zygaenidae, Procridinae).– *SHILAP Revista de lepidopterología*, **44**(173): 81-89.

EFETOV, K. A. & TARMANN, G. M., 2016b.– A new *Illiberis* species: *I.* (*Alterasvenia*) *kislovskyi* (Lepidoptera: Zygaenidae, Procridinae) from Myanmar.– *Entomologist's Gazette*, **67**(2): 137-142.

EFETOV, K. A. & TARMANN, G. M., 2017a.– The hypothetical ground plan of the Zygaenidae, with a review of the possible autapomorphies of the Procridinae and the description of the Inouelinae subfam. nov.– *Journal of the Lepidopterists' Society*, **71**(1): 20-49. DOI: https://doi.org/10.18473/lepi.v71i1.a5.

EFETOV, K. A. & TARMANN, G. M., 2017b.– *Thibetana keili* Efetov & Tarmann, a new species of the genus *Thibetana* Efetov & Tarmann, 1995, from Tibet (Lepidoptera: Zygaenidae, Procridinae, Artonini).– *SHILAP Revista de lepidopterología*, **45**(180): 581-587.

EFETOV, K. A., TARMANN, G. M. & PARSHKOVA, E. V., 2019.– *"Ino Budensis* var. *Mollis*" Grum-Grshimailo, 1893 (Lepidoptera: Zygaenidae) from Eastern Asia recognized as a valid species on the base of morphological and molecular analysis.– *Zootaxa*, **4619**(3): 518-526. DOI: 10.11646/zootaxa.4619.3.5.

EFETOV, K. A., TARMANN, G. M. & TREMEWAN, W. G., 2011.– *Zygaena nevadensis* Rambur, 1858 (Lepidoptera: Zygaenidae, Zygaeninae) newly recorded from the southern tip of the Penisola Appenninica (Apennine Peninsula), Italy.– *Entomologist's Gazette*, **62**(2): 123-129.

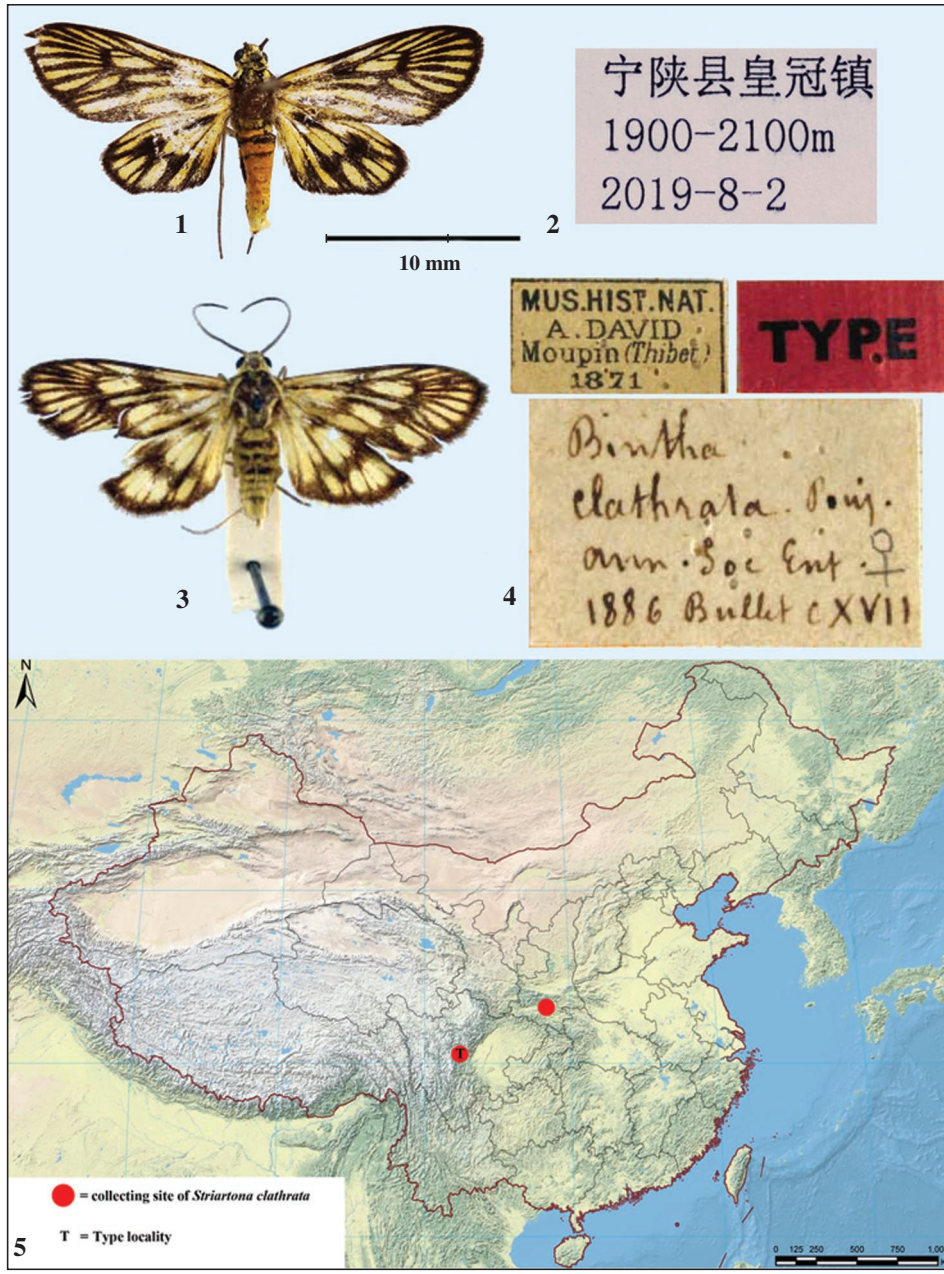
POUJADE, G.-A., 1886.– Les descriptions de quatre Lépidoptères Hététerocères nouveaux du Thibet.– *Bulletin de la Société entomologique de France*, **1886**: CXVI-CXVIII.

S. H.
Department of Entomology
College of Agriculture
South China Agricultural University
Guangzhou 510642, Guangdong
R. P. CHINA / *P. R. CHINA*
E-mail: huangsiyao2007@aliyun.com
https://orcid.org/0000-0002-9859-9212

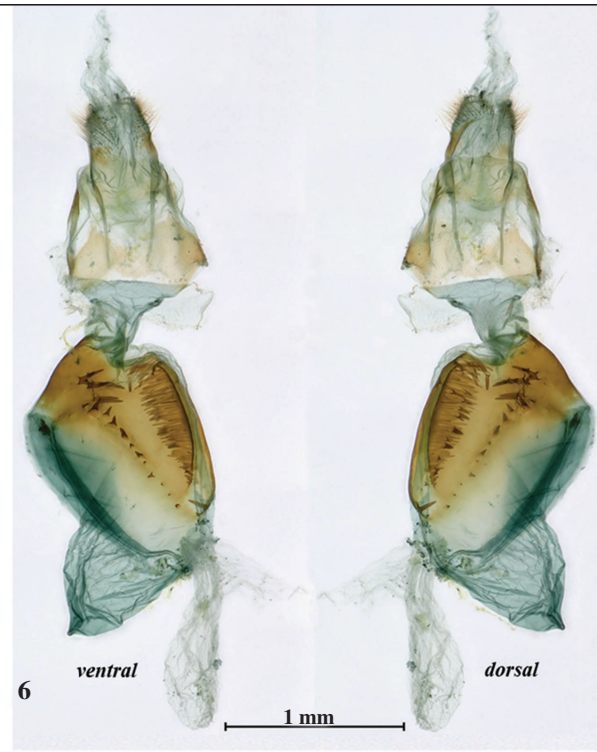
*K. A. E.
Department of Biochemistry
and Laboratory of Biotechnology
V. I. Vernadsky Crimean Federal University
RU-295051 Simferopol (Crimea)
RUSIA / *RUSSIA*
E-mail: shysh1981@mail.ru
E-mail: efetov.konst@gmail.com
https://orcid.org/0000-0003-1468-7264

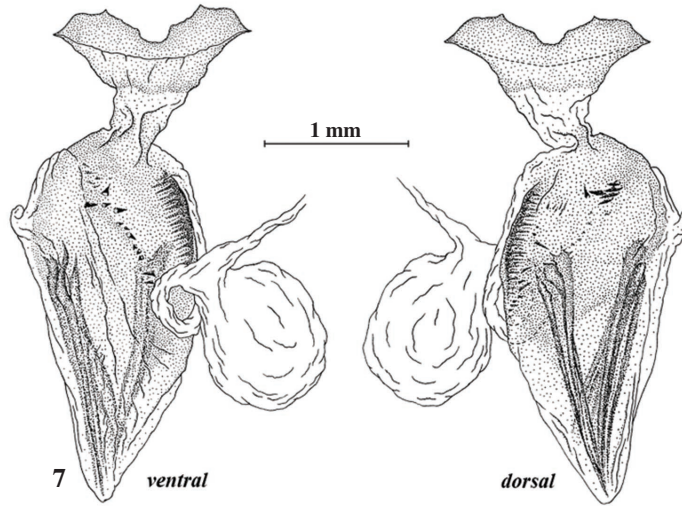
*Autor para la correspondencia / *Corresponding author*

(Recibido para publicación / *Received for publication* 19-I-2021)
(Revisado y aceptado / *Revised and accepted* 20-I-2021)
(Publicado / *Published* 30-IX-2021)



Figures 1-5.– *Striartona clathrata*. **1.** Female from Shaanxi (SCAU). **2.** Its pin-label. **3.** Holotype female from Sichuan (MNHN) (after EFETOV & TARMANN, 2012). **4.** Pin-labels of holotype (after EFETOV & TARMANN, 2012). **5.** Distribution of *Striartona clathrata* in China.





Figures 6-7.– Female genitalia of *Striartona clathrata*. **6.** Female from Shaanxi (SCAU). **7.** Holotype female from Sichuan (MNHN) (after EFETOV & TARMANN, 2012).