

Neolycaena (Rhymnaria) arcana sp. nov. from Tibet (Lepidoptera: Lycaenidae)

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Abstract. *Neolycaena (Rhymnaria) arcana* sp. nov. (Lepidoptera: Lycaenidae: Theclinae: Eumaeini) was discovered in an old collection of Lepidoptera in the National Museum in Prague and subsequently described from one male. This specimen undoubtedly originates from the period before 1950, and its label contains only ‘Tibet’. The new species is morphologically similar to other taxa of the subgenus *Rhymnaria* Zhdanko, 1983 from which it clearly differs in the arrangement of dots on the underside of hindwings as well as in characters of male genitalia. Photos of the holotype and its genitalia are given.

Key words. Lepidoptera, Lycaenidae, Theclinae, *Neolycaena*, *Rhymnaria*, taxonomy, new species, China, Tibet, Palaearctic Region

Introduction

In the National Museum in Prague most of the tropical and part of the Palaearctic butterflies still remain unidentified and not incorporated into the general collection. The latest effort in this direction was made during the leadership of Dr. Josef Moucha (7.iv.1930–9.iii.1972) in the 1960s. After his death identification of the exotic materials was neglected and such effort was renewed only recently. During the work on this project, a single specimen, significantly different, was found within a series of butterflies originally labelled as *Neolycaena tengstroemi* (Erschoff, 1874). This specimen comes from old collections acquisition of which is estimated into the first half of the 20th century but it cannot be excluded that its origin is even much older. The old identification matched the knowledge of the time when just three species of the hairstreaks actually classified into the subgenus *Rhymnaria* Zhdanko, 1983 were known, i.e. *N. (R.) rhymnus* Eversmann, 1832, *N. (R.) connae* Evans, 1932, and *N. (R.) tengstroemi* Erschoff, 1832, the latter with four subspecies (besides the nominotypical one): *N. (R.) t. davidi* Oberthür, 1881, *N. (R.) t. tangutica* Grum-Grshimailo, 1891, *N. (R.) t. carbonaria*

Grum-Grshimailo, 1890, and *N. (R.) t. iliensis* Grum-Grshimailo, 1891 (cf. SEITZ 1909). Currently, according to the comprehensive taxonomical revision of the whole genus *Neolycaena* de Niceville, 1890 (WEIDENHOFFER et al. 2016), there are 33 known species classified in *Rhymnaria*, some of them with several subspecies. Since the new species was discovered too late to be included in the above-mentioned monograph, we consider it appropriate to publish it here as a kind of supplement to WEIDENHOFFER et al. (2016). This discovery of the new species is also the first significant result of our study of the previously neglected group of butterflies in the National Museum.

Material and methods

The presented material was discovered in the collections of the National Museum, Prague, Czech Republic (NMPC) during the revision of the family Lycaenidae by the first author. The terminology and classification adopted follows WEIDENHOFFER et al. (2016) who provided detailed descriptions of all known species of *Neolycaena*, including illustrations of adults, genitalia of both sexes, distributional maps and differential diagnostics.

Taxonomy

Neolycaena (Rhymnaria) arcana sp. nov.

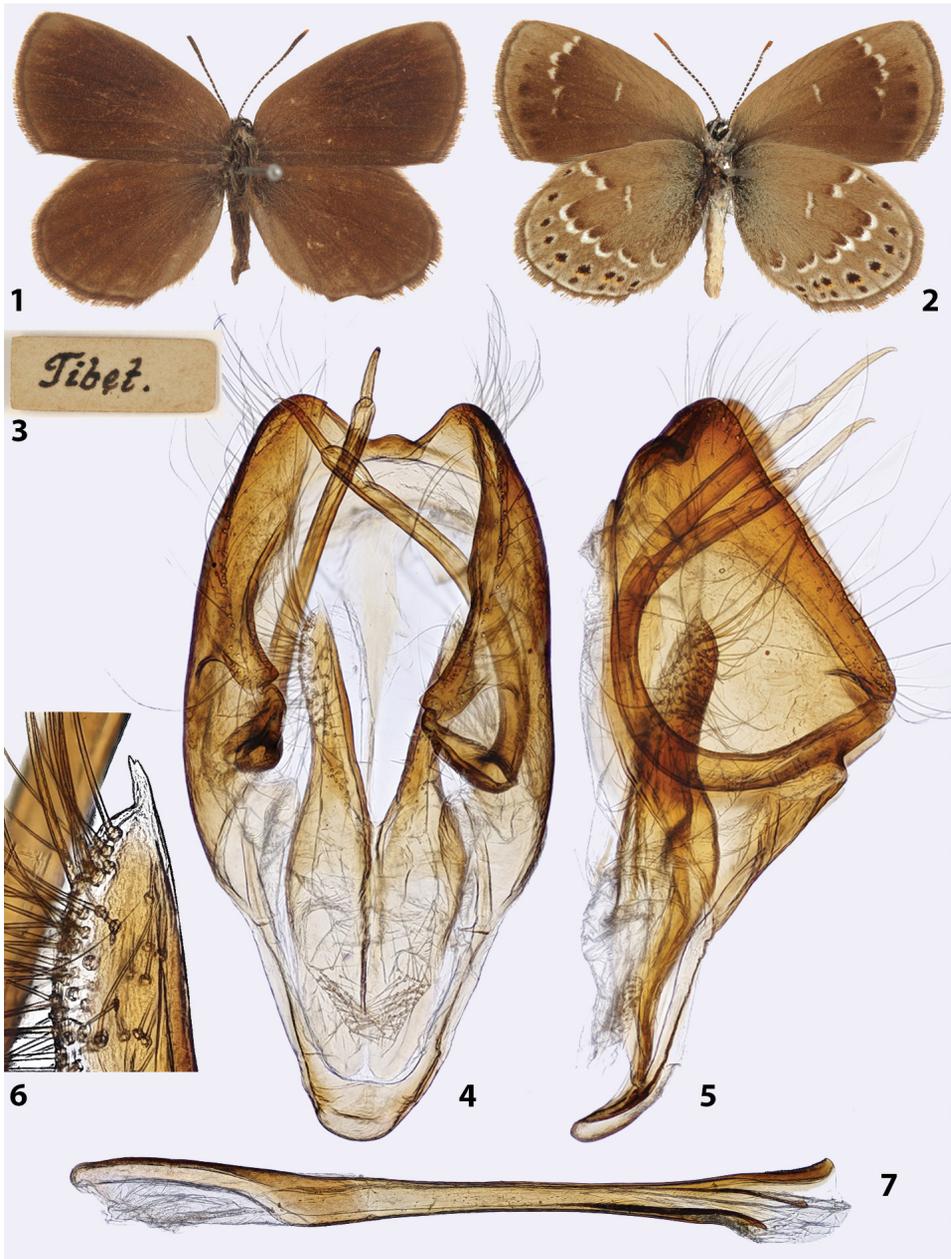
(Figs 1–7)

Type locality. Tibet (in its wider, pre-1950 concept).

Type material. HOLOTYPE: ♂, ‘Tibet. [handwritten]’, ‘Holotypus ♂ / *Neolycaena (Rhymnaria) / arcana* / Weidenhoffer & Šumpich, 2017 [red label]’ (NMPC).

Description. Adult (Figs 1–2). Forewing length (from apex to point of attachment to thorax) 14.6 mm, length/width ratio 1 : 0.6. Ground colour of upperside of wings brown, slightly paler in basal and apical part of forewing and anal part of hindwing. Weakly visible dark brown row of spots in submarginal part of hindwings. Narrow marginal line of both wings blackish brown, fringes brown. Underside of forewing dark brown, lighter in costal and marginal part of wings; narrow marginal line and fringes dark brown, white antemarginal line absent, submarginal dark spots indistinctive. White postdiscal band not reaching inner margin but well developed and formed by row of crescent spots. Wing drawings completed by thin white line at discocellular vein. Underside of hindwing in basal and discal parts light brown, in postdiscal part even paler. Marginal line and fringes dark brown, white antemarginal line weakly developed. Submarginal row formed by twofold row of rounded black spots joined with inconspicuous yellow link; inner spots of twofold row markedly larger than outer spots. White postdiscal band very prominent and formed by wide crescent spots bordered by blackish brown crescents from inner side. Regular bow of postdiscal spot interrupted only in field 6; this spot markedly shifted to base of wing. Discocellular vein white-bordered. Antennal club ventrally black with ochreous tip, dorsally fully ochreous-coloured.

Male genitalia (Figs 4–7). In ventral projection valvae distally terminated by short transparent spine, basal part of valvae equal to three fifth of total length, narrowing distally. Saccus



Figs 1–7. *Neolycaena (Rhymnaria) arcana* sp. nov. 1–2 – male (holotype): 1 – dorsal view; 2 – ventral view; 3 – original label; 4–7 – male genitalia: 4 – ventral view; 5 – lateral view; 6 – detail of spine in distal part of valvae; 7 – aedeagus.

well developed, laterally curved. Falces long, arcuately saggy, distally narrowed till spear shaped ending. Saccus well developed, in lateral projection curved. Aedeagus with two long cornuti and sclerotized keel.

Female genitalia. Unknown.

Differential diagnosis. Only two species (*N. (R.) aeto* Zhdanko, 1994 and *N. (R.) arcana* sp. nov.) from the whole subgenus *Rhymnaria* have a white row of postdiscal spots in the shape of broad crescents on the underside of hindwings. All other species of the subgenus have postdiscal spots in the form of white lines or white dots. From *N. (R.) aeto* the new species differs in having dark brown crescents proximally adjacent to the white ones; in twofold submarginal row of black spots with the internal spots always significantly larger than the external ones (same size by *N. (R.) aeto*); in the length of forewing (17–18 mm at *N. (R.) aeto*). The morphology of the male genitalia, especially the apical part of valvae (either rounded or sharply pointed) has a diagnostic relevance at a species level as well. *Neolycaena (R.) arcana* sp. nov. together with seven other species (*N. (R.) aeto*, *N. (R.) davidi*, *N. (R.) falkovitschi* Zhdanko & Korshunov, 1985, *N. (R.) oschi* Zhdanko, 1998, *N. (R.) rhymnus*, *N. (R.) tangutica*, and *N. (R.) zhdankoi* Churkin, 2006) belongs to a species group with spined valvae.

Etymology. The species epithet is the Latin adjective *arcanus* (-a, -um), meaning mysterious, hidden.

Biology. Unknown.

Distribution. Tibet (in its wide pre-1950 extent) (this paper).

Remark. Unfortunately, due to the ageing process the specimen suffered certain change in colouration and therefore it is not possible to establish the exact original tint of the brown colour.

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References

- SEITZ A. 1909: Thecla. Pp. 264–269. In: SEITZ A. (ed.): *Die Grossschmetterlinge des Palaearktischen Faunengebietes I. Tagfalter*. Verlag Alfred Kernen, Stuttgart, 379 pp.
- WEIDENHOFFER Z., BOZANO G. C., ZHDANKO A. & CHURKIN S. 2016: *Guide to the Butterflies of the Palearctic Region. Lycaenidae part II*. Second edition. Omnes Artes, Milano, 106 pp.