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# *Lestiphorus bilunulatus yamatonis* Tsuneki, 1963 (Hymenoptera, Crabronidae) raised to full species status, with description of the hitherto unknown male

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## Abstract

*Lestiphorus yamatonis* Tsuneki, 1963, **stat. nov.** is resurrected from synonymy and raised to full species level. The species diagnosis is updated and the hitherto unknown male is described. Illustrations of morphological details of *L. yamatonis* and related species are given. An updated key of the all twelve Palaearctic *Lestiphorus* is provided.

**Key words:** Apoidea, Spheciformes, Bembicinae, new records, taxonomy, fauna, Palaearctic region

## Introduction

*Lestiphorus bilunulatus yamatonis* Tsuneki, 1963 was described from Japan (Honshu). According to the original description, K. Tsuneki did not see any specimen on *L. bilunulatus* A. Costa, 1867 from the mainland and assigned the new taxon to *L. bilunulatus* on the basis of Yasumatsu's (1950) mention of this species from Japan. In the description of a *L. b. yamatonis*, K. Tsuneki (1963: 9) states that "subspecies differs from nominate race in the sculpture of the area cordata on the propodeum and somewhat in coloration". In addition, Tsuneki included Korea and Ussuri region (Primorsky Territory of Russia) in the range of this subspecies. Based on morphological characters and distribution data provided by Tsuneki (1963), Mokrousov *et al*. (2020) considered *Lestiphorus bilunulatus yamatonis* Tsuneki, 1963 to be a junior synonym of *L. bilunulatus* A. Costa, 1867.

The examination of additional material from Japan (Honshu) and Russia (Kuril Islands) made it possible to find reliable characters that separate the insular *Lestiphorus yamatonis* Tsuneki, 1963 from the continental *L. bilunulatus* A. Costa, 1867.

## Materials and methods

This paper is based on material deposited in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far East Branch of the Russian Academy of Sciences (Russia, Vladivostok) [FSCV], Zoological Institute of the Russian Academy of Sciences (Russia, St. Petersburg) [ZISP] and the personal collection of M.V. Mokrousov (Russia, Nizhny Novgorod) [MMC].

Photographs were taken with a digital camera Canon M200 attached to a Carl Zeiss Stemi 508 stereomicroscope. Multifocus-images were created from stacks of photographs using Helicon Focus 6 Pro software. The final illustrations were processed for sharpness, contrast, and brightness using Adobe® Photoshop® software.

Morphological terminology generally follows Bohart & Menke (1976). The distribution of the species follows Pulawski (2023). We have used the abbreviations F—flagellomere; S—metasomal sternum; T—metasomal tergum; L—length; H—height; W—width. Body length measurements are rounded to 0.1 mm, the measurement ratios are rounded to 0.01.

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8. Sternaulus complete, conspicuous (Fig. 5). Yellow pattern on face less developed (Figs 8, 9); pronotal lobe with yellow spot. Propodeum dorsolaterally shiny, with sparse, delicate punctures; setae on propodeal side shorter, 0.6–0.7× midocellar diameter, straight and erect. Apical constriction of T1 coarsely sculptured, with longitudinal rugae; T1 and T2 each with lateral spot, T3 with apical band (Fig. 7).—Palaearctic (Europe to Russian Far East, including Sakhalin, and Korea) . . . . . ***L. bilunulatus* A. Costa, 1867**

– Sternaulus poorly developed, mostly vestigial (Fig. 6). Yellow pattern on face more developed (Figs 3, 4); pronotal lobe black. Propodeum dorsolaterally with dense, clearly visible punctures, sometimes forming short irregular wrinkles; setae on propodeal side longer, 0.8–0.9× midocellar diameter, curved, slightly sinuous (Fig. 2). Apical constriction of T1 sparsely punctate (Fig. 2); T1 and T3 completely black or with reduced yellow pattern (small lateral spot on T1 and reduced apical stripe on T3), T2 with lateral spot (Fig. 1).—Japan (Hokkaido, Honshu, Kyushu), Russia (Island of Kunashir) . . . . . ***L. yamatonis* Tsuneki, 1963**

9. Propodeal spiracular groove well defined dorsally. Mesosoma and metasoma without yellow pattern.—Mountain regions of Uzbekistan, Tajikistan, Kyrgyzstan and southeastern Kazakhstan . . . . . ***L. oreophilus* (Kuznetzov-Ugamskij, 1927)**

– Propodeal spiracular groove lacking. Mesosoma and metasoma with yellow pattern . . . . . 10

10. Yellow are: ventral spot on scape, reduced maculation on pronotal collar, transverse spot on scutellum posteriorly, large lateral spots on T2, small lateral spots on S2 and S3, transverse apical band on T3. T1 ferruginous (except basally). Propodeum (except metapostnotum and small posterolateral area) smooth and shiny, with sparse irregular punctation.—Russia (Tyva Republic) . . . . . ***L. nemkovi* Mokrousov & Proshchalykin in Mokrousov *et al*. 2020**

– Head and metasoma with abundant yellow pattern, apical half of T2 all yellow. . . . . 11

11. Propodeum smooth and shiny. Preapical band of T1, posterior margin of T3–T5, S2–S5 and apical segment all ferruginous.—China (Jiangxi, Sichuan) . . . . . ***L. densipunctatus* (Yasumatsu, 1943)**

– Propodeum (except small area anteroventrally on lateral surface) with distinct longitudinal or oblique rugae. All terga and S2 with transverse yellow band, S3 with large posterolateral spot. Base of T1 and T2 ferruginous.—Kyrgyzstan (Issyk-Kul Lake) . . . . . ***L. pictus* Nemkov, 1992**

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