



First record of *Elga leptostyla* Ris, 1911 (Odonata, Libellulidae) from Costa Rica

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Abstract

During research in the Tirimbina Biological Reserve, on the Caribbean slope of Costa Rica, we captured adult specimens and reared larvae of the dragonfly *Elga leptostyla* Ris, 1911, which belongs to the Libellulidae. This species was previously reported only from southern Panama to northern South America. Therefore, this is the first record of the species and genus from Costa Rica, increasing the number of Libellulidae species recorded in the country to 95. This species' known distribution is northwards.

Keywords

Anisoptera, Central America, distribution, dragonflies, Neotropics, range extension.

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Introduction

For many groups of insects, Costa Rica is one of the best-studied countries on the Central American isthmus, and its Odonata fauna is among the best-known among aquatic insects (Springer et al. 2014). Nonetheless, new species are still being discovered in the country, and several have been described recently (Haber et al. 2015; Haber 2017, 2019), raising the number to over 281 species reported for this small country (Paulson 2020a). For the family Libellulidae, 27 genera and 94 species have been recorded so far (Haber et al. 2015; Paulson 2020a). This family inhabits a variety of freshwater habitats, including rivers, streams, ponds, lakes, and coastal lagoons, both in open areas as well as forested sites, and they are among the most abundant and widely distributed dragonflies (Esquivel 2006).

During surveys in 2019, the libellulid species *Elga leptostyla* Ris, 1911 was collected for the first time in Costa Rica, raising the number of species reported for this family to 95.

Methods

This study was conducted in 2019 at the Tirimbina Biological Reserve (180–220 m a.s.l.), within the Holdridge life zone of humid forest premontane transition to basal and very humid tropical forest, located within La Virgen, Sarapiquí area, on the Caribbean slope of Costa Rica. Adults were collected using an insect net during active search over aquatic habitats and trails. Mature larvae were collected with a plastic strainer and transported

alive to the laboratory to rear them to the adult stage. Adults were identified using taxonomic keys and literature (Garrison et al. 2006).

Sampling permits were provided by the National System of Conservation Areas of the Ministry of Environment and Energy under resolution number SINAC-ACAHN-PI-R-028-2018. All specimens are deposited at the Zoological Museum of the University of Costa Rica (MZUCR).

Results

Elga leptostyla Ris, 1911

New record. COSTA RICA • 1 ♂ adult, 28 mm; Heredia, Sarapiquí, La Virgen, Tirimbina Biological Reserve; 10.4076°N, 084.1140°W; 187 m.a.s.l.; 15 Apr. 2019; J. Román-Heracleo, Y. Bravo-Méndez leg.; MZUCR-O-1156. • 1 larva; same data except 16 Feb. 2019; reared; MZUCR-O-1193. • 1 ♀ adult, 27 mm; Heredia, Sarapiquí, La Virgen, Tirimbina Biological Reserve; 10.4072°N, 084.1202°W; 175 m.a.s.l.; 17 Apr. 2019; J. Román-Heracleo, Y. Bravo-Méndez, leg.; MZUCR-O-1136.

Identification. *Elga leptostyla* adults are characterized by the following features: cream spots on the thorax, abdominal segment 2 with a cream vertical band, and a dorsal transverse band on the first third of segment 7. Body coloration is similar for both sexes, although wing coloration differs (Fig. 1A, B).

The only other species from this genus, *Elga newton-santosi* Machado, 1992, recorded so far only from Brazil and therefore very unlikely to occur in Costa Rica, lacks the cream spots on the thorax. This species and *E. leptostyla* can be distinguished by additional characters which were listed in detail for both sexes in the original description (Machado 1954), although *E. leptostyla* was described therein as *E. santosi* sp. n., while the redescription of *E. leptostyla* by Machado (1954) actually corresponds to *E. newton-santosi* (Machado 1992).

Habitat. Specimens were collected in slow-flowing water, within dense vegetation in a shaded, very humid tropical forest area (Fig. 2).

Discussion

Ramírez (1997) mentioned *Elga leptostyla* in the list of Costa Rica species, but this species was removed from the updated list by Ramírez et al. (2000) without further explanation. Therefore, this is the first confirmed record of this species based on collected specimens for the country. This new record also represents a range extension northward for *E. leptostyla* (Fig. 3) because the northernmost previous record was on the Caribbean slope of Panama, in watersheds 105 and 115 (May 1979; Donnelly 1992; Delgado and Cornejo 2014). It is also known from South America, specifically from Colombia, Ecuador, Peru, Venezuela, Trinidad and Tobago, Suriname, and Brazil (Paulson 2020b).

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Authors' Contributions

JRH collected and identified specimens. Both authors wrote the manuscript and reviewed the final version.

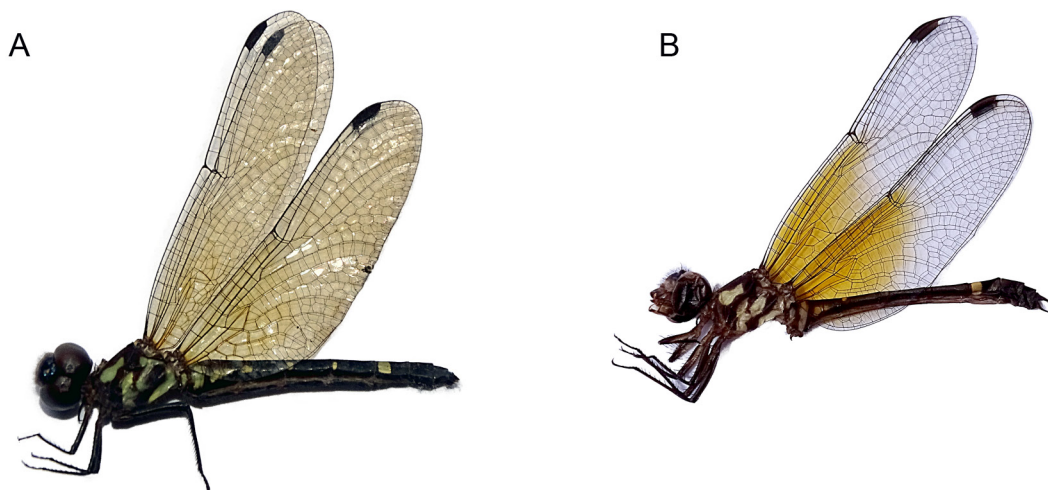


Figure 1. Adults of *Elga leptostyla*. **A.** Female, lateral view. **B.** Male, lateral view.

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Figure 2. Habitat of *Elga leptostyla* in the Tirimbina Biological Reserve, Sarapiquí, Heredia, Costa Rica.

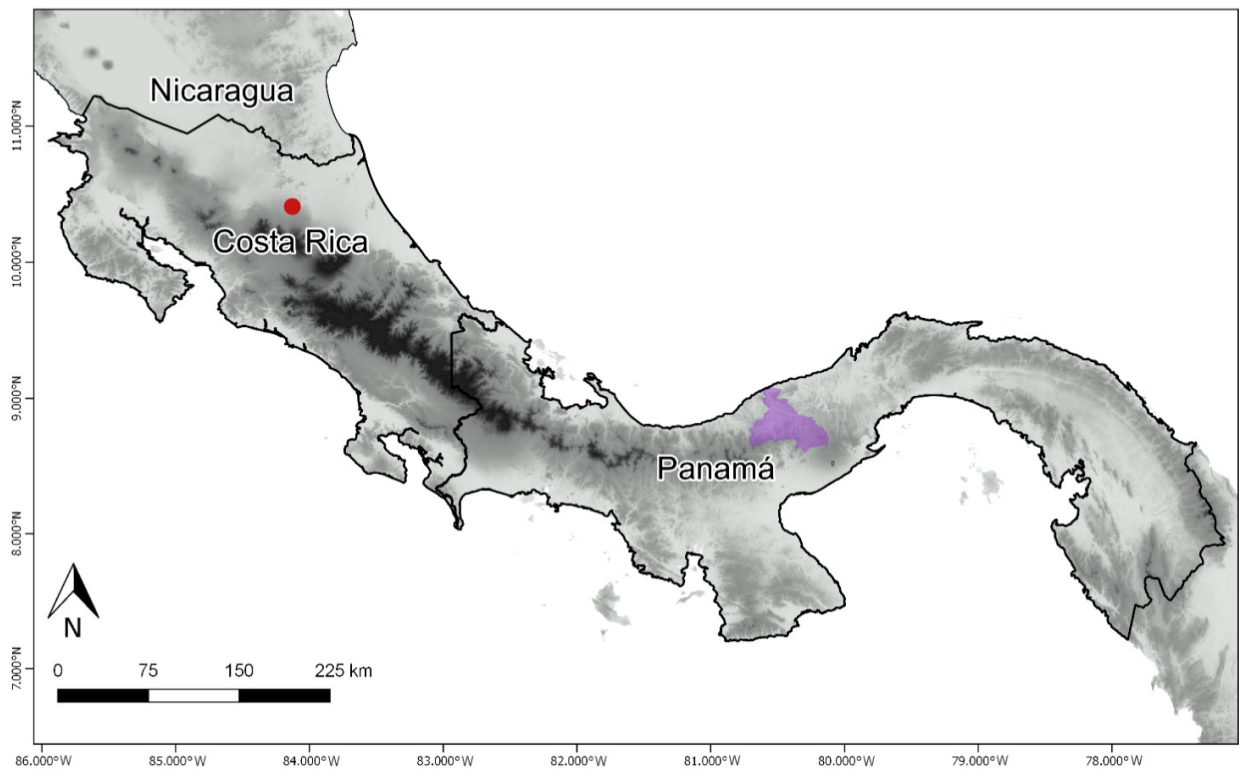


Figure 3. The map show the northernmost previous record on Panamá and the new record in Costa Rica. The red point shows specific ubication of the sampling site in Costa Rica.

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