

Short Communication

FIRST LOCALITY RECORD OF JAVAN ENDEMIC DAMSELFLY *Drepanosticta gazella* LIEFTINCK, 1929 (ODONATA: ZYGOPTERA: PLATYSTICTIDAE) IN EAST JAVA, INDONESIA

CATATAN LOKALITAS PERTAMA CAPUNG JARUM ENDEMIK JAWA *Drepanosticta gazella* LIEFTINCK, 1929 (ODONATA: ZYGOPTERA: PLATYSTICTIDAE) DI JAWA TIMUR, INDONESIA

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ABSTRAK

Drepanosticta gazella dilaporkan hanya tersebar di Pulau Jawa, Indonesia, tepatnya di bagian barat dan tengah. Perjumpaan tak sengaja dengan individu *D. gazella* jantan terjadi di hutan hujan tropis dataran tinggi Gunung Penanggungan, Mojokerto, Jawa Timur, pada tumbuhan dekat sungai kecil. Catatan ini mewakili wilayah paling timur dalam jangkauan distribusi spesies endemik ini. Selain itu, perlu dilakukan eksplorasi lanjutan di Jawa Timur pada beberapa lokasi penting guna menentukan perluasan distribusinya.

ABSTRACT

Drepanosticta gazella has been reported only to spread on Java Island, Indonesia, to be exact, in the western and central parts. An accidental encounter with a male *D. gazella* occurred in the tropical rainforest of the highlands of Mount Penanggungan, Mojokerto, East Java, on vegetation near a small stream. This record represents the easternmost area within the distribution range of this endemic species. In addition, further exploration in East Java at several important locations needs to be carried out to determine the expansion of its distribution.

INTRODUCTION

The family Platystictidae has been differentiated into around 270 valid species (van Tol, 2018; Paulson *et al.* 2021). In this family, there is the genus *Drepanosticta* Laidlaw, 1917, which is currently known to have a variety of species, possibly as many as 127 species distributed throughout the world. The distribution of this genus is mostly in the humid tropics, starting from the Oriental region to the Papuan subregion in Australia region. About 52 species of damselflies have been identified in Indonesia, with 5 species endemic to Java Island (Paulson *et al.* 2021). Members of

the *Drepanosticta* on the island of Java include *D. sundana* Krüger, 1898; *D. siebersi* Fraser, 1926; *D. spatulifera* Lieftinck, 1929; *D. bartelsi* Lieftinck, 1937; and *D. gazella* Lieftinck, 1929 (Lieftinck, 1934a; Lieftinck, 1937).

Previously, one of the endemic damselflies of Java, *Drepanosticta gazella* has been reported in West Java, covering the Banten area on Mount Karang, the Bogor area on Mount Pancar, Mount Salak, Mount Bunder, Cisarua, Mount Megamendung, and Sukanagara, the Sukabumi area on Mount Gede-Pangrango, and Situ Gunung, the Bandung area on Mount Cisuru, and the Bandung area in Mount Limbung

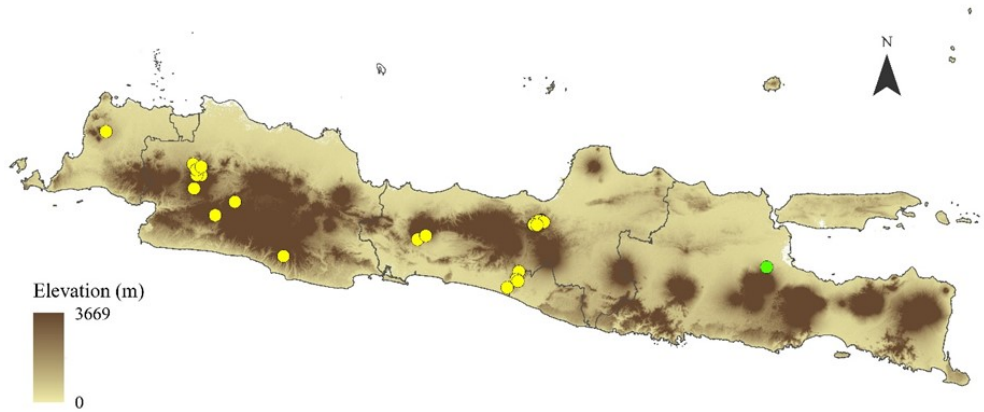


Figure 1. Distribution map of *Drepanosticta gazella* in Java, Indonesia. Yellow point: previous distribution (Dow *et al.* 2022), green point: new record.

(Lieftinck, 1934a; Lieftinck, 1934b). Meanwhile, in Central Java, they are located on Mount Ungaran, Semarang (Baskoro *et al.* 2018; Diniarsih *et al.* 2016), Mount Slamet (Lieftinck, 1929; Lieftinck, 1934a), Petungkriyono Forest (Nafisah & Soesilohadi, 2021), and Cipendok Waterfall in Banyumas (Zaman *et al.* 2019), the Menoreh Mountains in Purworejo (Rachman & Rohman, 2016; Indiarso *et al.* 2019), and Yogyakarta (Setiyono *et al.* 2017). However, in East Java, it had never been found before in a survey report on dragonfly diversity surveys.

The discovery of the *D. gazella* in East Java can be the basis for conducting a more

extensive investigation, especially in unexplored locations. The new spatial data could be used as a reference to increase ecological research on the distribution of these species in Java.

MATERIALS AND METHODS

On January 29, 2023, an accidental encounter occurred at the foot of Mount Penanggungan, Mojokerto, East Java (-7.606700°, 112.596848°) (Figure 1). One individual male *Drepanosticta gazella* perched on bushes near a stream in a tropical rainforest (Figure 2). This forest is located near several tourist attractions at an altitude of 800 meters

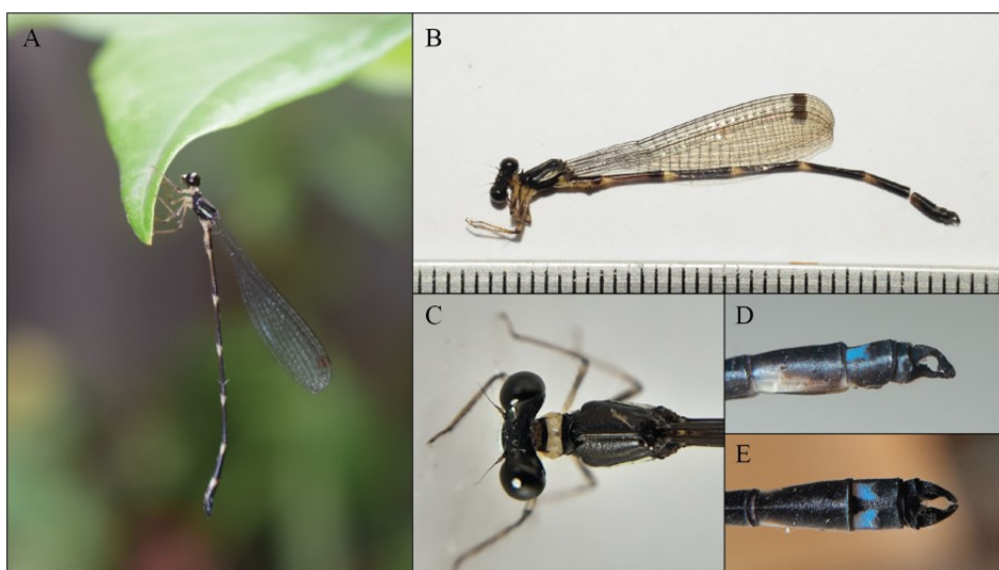


Figure 2. A. male *Drepanosticta gazella* observed in East Java, Indonesia; B-E = specimen documentation; B. lateral view; C. dorsal view of head and thorax; D. anal appendages lateral view; E. anal appendages dorsal view. Measurement 1mm.

above sea level. Before being caught with insect nets, the species was documented with a Nikon D5300 camera. Then, the specimens were put on glassine paper and labeled with coordinates and habitat type. In the laboratory, the specimens were preserved in 96% absolute ethanol for 24 hours of immersion (Schauff, 2001). Identification of this species can be determined by the white band on the lateral thorax. On the dorsal side of the ninth segment of the abdomen, there are two bluish spots (Lieftinck, 1929; Baskoro et al. 2018).

RESULTS AND DISCUSSION

In this case, a new local distribution record was demonstrated by the discovery of *Drepanosticta gazella* was represents the easternmost distribution on Java Island. This find was discovered in Mojokerto, East Java on the foot of Mount Penanggungan (Figure 1). This mountain's highest point is 1653 meters high, whereas the damselfly encounter occurs at an elevation of 800 meters. When compared to Mount Slamet in Banyumas, Central Java, which is located at an elevation of 762 meters (2500 feet), the meeting at this height is remarkably similar (Lieftinck, 1929). Based on encounters in West Java and Central Java, *D. gazella* has a distribution range of 500 – 1500 meters (Lieftinck; 1934a).

There has never been any research undertaken on the dragonflies around Mount Penanggungan. As a result, the variety of dragonflies is still extremely sparse reported, particularly in East Java. This is due to the fact that significant natural areas have never been investigated for their biodiversity. As a result, it provides a chance for researchers and dragonfly observers to perform observational studies there.

D. gazella has a "least concern" (LC) conservation category according to the IUCN Red List. Only a few studies have been carried out on this species due to the lack of interest in it. *D. gazella* conservation status still has to be evaluated in terms of population, ecology, life cycle, threats, and range (Dow *et al.* 2022). This evaluation can serve as the foundation for understanding whether or not the population in the habitat has decreased. This finding's inclusion of a new distribution can assist the evaluation's data set be comprehensive.

The resident species of the genus *Drepanosticta* generally have a restricted dispersal range (Nugrahaningrum *et al.* 2021). Its restricted mobility and sensitivity to water contamination make it a bioindicator. Very sensitive dragonflies can tell if the aquatic habitat at the discovery spot is still clean or otherwise (Oertli, 2008). The people may use the clean water that is readily available in this way to suit their everyday requirements. In order to maintain the Java endemic dragonfly, it is crucial to safeguard its habitat from land conversion. From these findings, researchers can pay more attention to studying these species because of their role in nature, endemism, and sensitivity to forest landscape shifting.

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