

Eurema brigitta (Lepidoptera: Pieridae) – a new record of butterfly for Socotra

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Abstract. *Eurema brigitta* (Stoll, 1780) (Lepidoptera: Pieridae) is recorded for the first time from the Socotra Island (Yemen). The specimen represents either a wet season form of a subspecies originating from Africa or a form with its usual occurrence in Madagascar, Mascarenes, Aldabra and Comoros. The current number of butterfly species known for Socotra is now 27.

Key words. Lepidoptera, Rhopalocera, Papilionoidea, Pieridae, *Eurema brigitta*, new record, Socotra, Yemen

Introduction

During the years 2000–2012, Mendel University organised several expeditions to Socotra Island. The aims of the expeditions were both to collect scientific material, especially insects, and to educate local people in natural history and sustainable use of natural resources. The majority of the outputs from these expeditions have already been published (HÁJEK & BEZDĚK 2012, 2014), however, new data are still being discovered. In addition to these aims, butterflies were also investigated.

Generally there exist only a few studies on Lepidoptera of Socotra. Several studies were focused on moth families Sphingidae (HAXAIRE & MELICHAR 2011), Arctiidae (IVINSKIS & SALDAITIS 2008), Cossiidae (YAKOVLEV & SALDAITIS 2010, BORTH et al. 2013), Geometridae (HAUSMANN 2009) or Noctuidae (HACKER & SALDAITIS 2010), while butterflies were less studied. After descriptions of several species and subspecies (e.g. REBEL 1907), there have been no

recent papers dealing in detail with the butterfly fauna. The butterfly species occurring in the archipelago were summed by FRIC & HULA (2013). They listed the total number of butterflies known for Socotra to be 26 species. A different number of butterflies (30) was mentioned by BORTH et al. (2011), but the exact number in their original reference (HACKER 1999) is smaller. However, HACKER (1999) erroneously listed also occurrence of *Sarangesa phidyle* (Walker, 1870), based on an incorrect interpretation of localities given by REBEL (1907).

During the sorting of the complete material collected throughout the expeditions we found another species, *Eurema brigitta* (Stoll, 1780), not yet recorded for Socotra Archipelago.

The genus *Eurema* Hübner, 1819 is distributed in tropical and subtropical areas world-wide except Europe. It has about 70 species, 33 of them distributed in the Old World (YATA 1989). Nine species occur in Africa and of them two species also reach the southern part of the Arabian Peninsula. One of these species is *E. brigitta*, the other is *E. hecabe* (Linnaeus, 1758). Both species have very wide distribution ranging from tropical Africa to Australia. *E. brigitta* includes approximately 11 subspecies (YATA 1989), two of which, *E. b. brigitta* and *E. b. pulchella* (Boisduval, 1933), occur in the Afrotropical Region. The other subspecies are distributed across the Oriental Region and Australasia. *E. b. brigitta* is known from continental Africa and *E. b. pulchella* from the surrounding islands – Madagascar, the Mascarene Islands, Aldabra and the Comoros (BALLETO et al. 2015). As for the Arabian Peninsula, the nominotypic subspecies is known from the main part of Yemen and Saudi Arabia (Asir) (LARSEN 1983).

Material and methods

The studied specimen was photographed with a Leica DFC 450 camera (Leica Planapo 0.5× WD 187 mm objective) and it is deposited in the collection of Zdeněk Faltýnek Fric in the Biology Centre CAS, Institute of Entomology (IECA).

New record

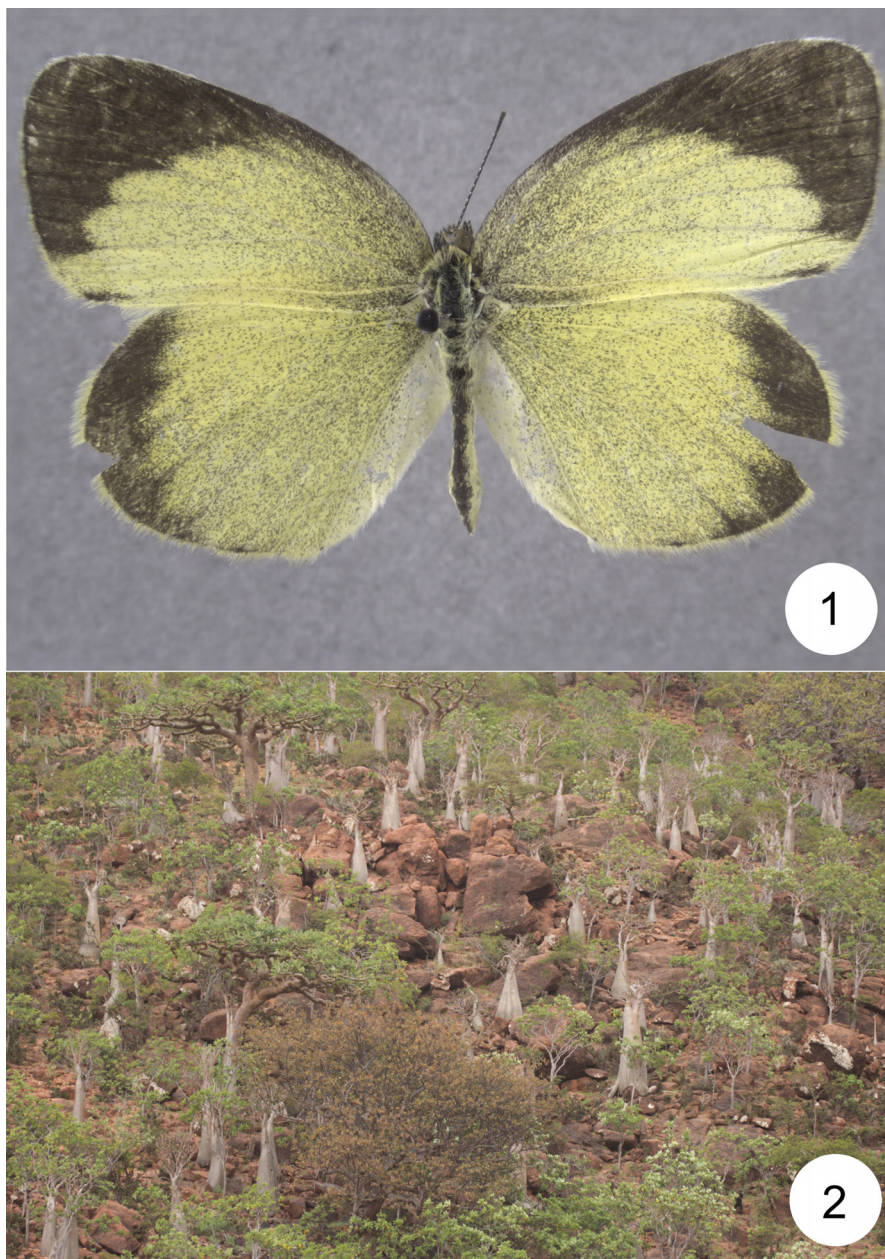
Eurema brigitta (Stoll, 1780)

(Fig. 1)

Material examined. YEMEN: SOCOTRA ISLAND: Dgisfu valley, 12°28.444'N 54°08.596'E, 2.vi.2010, 1 ♀, V. Hula & J. Niedobová leg. (IECA, code: MR_ZF_496).

Comments. One female of *E. brigitta* was examined (Fig. 1). It represents wet season form, with clearly obvious black border on hindwing upper side (absent in dry season generations), and with upper sides of wings dusted by numerous black scales. Forewing length of this specimen is 16.5 mm.

Dgisfu valley is covered by typical Socotran scrub vegetation (Fig. 2) with domination of *Croton socotranus* Balf. f., *Jatropha unicostata* Balf. f. and solitary plants of *Adenium obesum socotranum* Roem.; trees are represented by *Euphorbia arbuscula* Balf. f. and *Boswellia elongate* Balf. f. According to BEZDĚK et al. (2012), the unified transliteration of the locality from the local dialect of Arabic should be “Gisfo”.



Figs 1–2. 1 – female of *Eurema brigitta* (Stoll, 1780), Socotra, Gisfo valley; 2 – Gisfo valley, habitat of *E. brigitta* (photo V. Hula, June 2010).

Discussion

Our specimen is similar to both African subspecies as females of both forms have extensive black dusking on upperside forewings and limited black coloration on the hindwings. As the specimen is female, we are unable to say to which subspecies it belongs; the differences are evident only in comparison of large series. However, the links to Africa are evident.

Eurema brigitta may be abundant and common. It inhabits various open habitats including crop fields, gardens and forest clearings. Its caterpillars feed on various food plants, especially on *Cassia* s.l. (Fabaceae) (YATA 1989). In Africa the species was also recorded feeding on *Acacia* and *Albizia* (KIELLAND 1990), *Chamaecrista mimosoides* (DAVIS & BARNES 1991), *Hypericum aethiopicum* (Hypericaceae) (PLATT 1921), *Senna* and *Sesbania* (VAN SOMEREN 1974), and *Tephrosia* (LARSEN 2005). The species flies all year round and has distinctive dry and wet season morphs. Due to its distribution and ecology, we are not surprised by its presence on Socotra, however; the question is: how, when and where did the specimen originate, and has it established a stable population there.

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