

## First record of Western Pygmy-Blue *Brephidium exilis* (BOISDUVAL, 1852) in Iran

(Lepidoptera, Lycaenidae)

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**Abstract.** A first unexpected finding of *Brephidium exilis* (BOISDUVAL, 1852) was made in southern Iran, Province of Kerman, Kuh-e-Lalehzar Mts. This butterfly has a North-American origin. In recent years it was recorded in the Arabian Peninsula (south-western Asia): throughout the United Arab Emirates, in northern Oman and in eastern Saudi Arabia. It seems it was introduced and now expands its area in Asia.

**Key words:** Lepidoptera, Lycaenidae, *Brephidium exilis*, Kerman, Kuh-e-Lalehzar, butterfly introduced species, invasive species.

**Introduction.** During the author's expedition to Iran in July of 2022, an unexpected finding of *Brephidium exilis* (BOISDUVAL, 1852), the American Western Pygmy-Blue, was made. This butterfly is known as the smallest in Americas, the basic area of this species. The butterfly was observed in cultivated area near Lalehzar village at foothills of the Kuh-e-Lalehzar Mts., the part of the Kuhrud mountain range in southern province of Kerman.

**Material and methods.** 2 ♀♀ of *Brephidium exilis* (BOISDUVAL, 1852) were collected (fig. 1). The specimens were photographed using a Pentax Optio 750z digital camera. The processing of illustrations was finalized with Adobe Photoshop CS6 software. The distribution map was taken from open Internet map sources, and then edited with Adobe Photoshop CS6. The material is deposited in the author's private collection in Moscow, Russia.

**Taxonomic account.** *Brephidium exilis* (BOISDUVAL, 1852)

**Material.** 2 ♀♀, Iran, Kerman Province, south Kerman, near Lalehzar, 2800-2850 m. 8.VII.2022, Markhasiov M.B. leg. et coll.

**Diagnosis.** The habitus of *B. exilis* (BDV.) shows variability on the main distribution range, depending on local habitat conditions in addition to a flight season (WARREN, 2017). In Iran, the species has been observed in the middle of the summer. The observed butterflies look like desert form of the species: with reddish shade of the wing underside pattern. It's most likely that *B. exilis* (BDV.) has few generations in observed site, same like for the local species *Lampides boeticus* (Linnaeus, 1767).

**Habitat.** The butterfly inhabits grassy places on the edge of a stony semi-desert near the water sources (fig. 2). The other species recorded in this habitat were *Colias crocea* (GEOFFROY, 1785), *Jumonia orithya* (LINNAEUS, 1758), *Lampides boeticus* (LINNAEUS, 1767) and *Polyommatus icarus persicus* (BIENERT, 1870).

Hostplants of *B. exilis* (BDV.) are Chenopodiaceae and Aizoaceae, including *Chenopodium* spp., *Atriplex* spp., *Salicornia* spp. and *Sesuvium* spp. (PYLE, 1981).

**Distribution.** The distribution range of this species is south-western part of North America (native area), Caribbean region and Hawaii Islands (LOTTS & NABERHAUS, 2021). From beginning of the century, it was known as introduced species in the south-eastern part of the Arabian Peninsula as far as western coast of Persian Gulf: throughout the United Arab Emirates, in northern Oman and in eastern Saudi Arabia (PITTAWAY, 2006). The present data (fig. 3) show the expansion of the area of this species to north and east, on the north-eastern coast of Persian Gulf and eastwards from the coast to interior mountain regions of Iran.

The butterfly is so tiny that it's difficult to detect it. That may explain absence of previous observations of this species in the area. Possibly, *B. exilis* (BDV.) will then reach Pakistan and India due to suitable habitats.

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Fig. 1: *Brephidium exilis* (BOISDUVAL, 1852), ♀, upper- and underside. Iran, Kerman, near Lalehzar, 2800-2850 m. 8.VII.2022, Markhasiov M.B. leg. Scale = 1 cm.



Fig. 2: Habitat of *Brephidium exilis* (BOISDUVAL, 1852), Iran, Kerman prov., south Kerman, near Lalehzar, 2800-2850 m. 8.VII.2022.



Fig. 3. Known distribution of *Brepidium exilis* (Boisduval, 1852) in Iran (red square).

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