

## **Zerene cesonia limonella Lamas (Pieridae): First Distribution Record in Chile and First Host Plant Record**

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ZERENE CESONIA LIMONELLA LAMAS (PIERIDAE): FIRST DISTRIBUTION RECORD  
IN CHILE AND FIRST HOST PLANT RECORD

**Additional key words:** Andes, Coliadinae, *Dalea pennellii*, Fabaceae, *Zerene cesonia cesonides*

*Zerene* Hübner, [1819] (Lepidoptera: Pieridae: Coliadinae) is a small New World butterfly genus including two species, both commonly known as the dogfaces: *Zerene cesonia* (Stoll, 1790) and *Zerene eurydice* (Boisduval, 1855) (Lamas 2004).

*Zerene cesonia*, the Southern Dogface, is broadly distributed in the Neotropical Region, from the southern USA to Argentina, with six valid subspecies recognized along this extensive geographic range (Lamas 2004). One of these, *Zerene cesonia cesonides* (Staudinger 1894), has been mentioned as an occasional member of the northern Chilean butterfly fauna, based on collections of adult specimens (Ureta 1956, Peña & Ugarte 1996, Benyamini et al. 2014). Rearing records of this butterfly have never been reported from this region, and its presence in Chile has been assumed to be a result of sporadic migrations from the eastern slopes of the Andes (Peña & Ugarte 1996). However, the male specimen illustrated by Peña & Ugarte (1966) undoubtedly does not belong to *cesonides*, but to *Zerene cesonia limonella* Lamas, 1981.

In January 2013, as a part of a sampling of Lycaenidae larvae on inflorescences of *Dalea pennellii* var. *chilensis* Barneby (Fabaceae) in the neighborhood of the Socoroma village, Parinacota Province, located at about 3,000 m altitude in the western slopes of the Andes of northern Chile, one egg of a Pieridae species was fortuitously found on a leaflet of this plant. The leaf containing the egg was collected and brought to the laboratory in a plastic vial to wait for eclosion and subsequently to rear the larva with leaves of the same plant. As a result, a female adult was obtained in February 2013 and identified as *Z. c. limonella* (Fig. 1, 2), which has its type locality in Surco, Lima, Peru, and is also known from western Ecuador (Lamas 1981).

This is the first record of *Z. c. limonella* in Chile, expanding its geographic range to the south. Furthermore, although *Dalea* and other genera of Fabaceae were already mentioned as host plants for other subspecies of *Zerene cesonia* (Beccaloni et al. 2008), this is the first record of a host plant for the immature stages of *Z. c. limonella*.

Interestingly, this first Chilean record of *Z. c. limonella* is based on one field-collected egg on a native plant, and the subsequent laboratory rearing of the larva. This fact suggests the adequacy of the sampling site for the

presence of this butterfly, ruling out the possibility of just a vagrant adult not associated with the vegetation of the study site. Two additional surveys for *Z. c. limonella* were performed in the same sampling site, in February 2013 and March 2014. On each occasion, ten *D. pennellii* plants were randomly selected and their leaves carefully examined, but no additional eggs, larvae or pupae were found. Similarly, adults were searched for without success. The absence of immature stages and adults in both surveys suggests that the population density of *Z. c. limonella* could be extremely low.

The Fabaceae genus *Dalea* is well represented along the Peruvian range of *Z. c. limonella* (Baldeón et al. 2006), where several other potential hosts are available for this butterfly. At the local level, *D. penelli* var. *chilensis* was recently recorded as a host plant for flower-feeding larvae of three Lycaenidae species in the same study site (Vargas 2014), highlighting the importance of this little studied native plant as a host for native butterflies.



FIG. 1, 2. Female adult of *Zerene cesonia limonella* Lamas, 1981 reared from egg collected on *Dalea pennellii* var. *chilensis* in Socoroma, Parinacota Province, western slopes of the Andes of northern Chile. 1) Dorsal view; 2) ventral view.

The discovery of *Z. c. limonella* increases the butterfly fauna of Chile with one more representative from the northern area of this country. This fact, together with other recent additions, both from the western slopes of the Andes (Vargas 2013) and from the coastal valleys of the Atacama Desert (Vargas & Lamas 2011), highlights the necessity of additional sampling in order to characterize better the butterfly fauna of these arid environments of northern Chile and the adjacent area of the neighboring countries, as a similar scenario has been mentioned for the butterfly fauna of southern Peru (Cerdeña et al. 2015).

**Material examined.** One female, Socoroma, Parinacota, Chile, February 2013; H.A. Vargas coll.; reared from egg on *Dalea pennellii* var. *chilensis*, January 2013.

The voucher specimen will be deposited in the Colección Entomológica, Universidad de Tarapacá (IDEA), Arica, Chile.

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