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Danaus chrysippus **form** *alcippoides* **(Linnaeus, 1758) a new form for the Maltese Islands (Lepidoptera: Nymphalidae, Danainae)**

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Abstract

Danaus chrysippus form *alcippoides* (Linnaeus, 1758) is recorded for the first time from the Maltese Islands. Notes on the distribution, different subspecies and forms of the adults are included.
KEY WORDS: Lepidoptera, Nymphalidae, *Danaus chrysippus* form *alcippoides*, Malta.

Danaus chrysippus **forma** *alcippoides* **(Linnaeus, 1758) una nueva forma para Malta (Lepidoptera: Nymphalidae, Danainae)**

Resumen

Se registra por primera vez para Malta *Danaus chrysippus* forma *alcippoides* (Linnaeus, 1758). Se incluyen notas sobre la distribución, diferentes subespecies y formas de los adultos.
PALABRAS CLAVE: Lepidoptera, Nymphalidae, *Danaus chrysippus* forma *alcippoides,* Malta.

Introduction

Danaus chrysippus is a common butterfly in Africa and Asia and is one of the most well-known migratory butterflies.

TALBOT (1943) established that there are three subspecies of *D. chrysippus*: *alcippus*, *dorippus* and *chrysippus*. However, after studying *D. chrysippus* at Kampala, Uganda, OWEN & CHANTER (1968) established that these are mainly colour forms which where sympatric during the year. Once again, SMITH *et al*. (2005) elevated these three forms to subspecies.

According to SMITH *et al.* (2005), the distributional range of *D. chrysippus alcippus* is found in North West Africa*, D. chrysippus chrysippus* (orange form) is found in North East Africa, *D. chrysippus chrysippus* (brown form) is found in Central and South Africa where as *D. chrysippus dorippus* is found in East Africa. A hybrid zone exists somewhere in East and Central Africa, including the Kampala area in Uganda and Khartoum in Sudan where additional forms are found, namely *alcippoides*, *transiens*, *albinus* and *semialbinus* (SMITH *et al.*, 1998). It seems that these hybrid forms are rare and are rarely found outside the hybrid zone.

Genetic control of the colour patterns of *D. chrysippus* has been the subject of various publications. The ground colour in the forewing and the forewing pattern are controlled by the B locus and C locus respectively with the genotype bb found in the orange form and BB in the brown form. The genotype of the forewing pattern in subspecies *dorippus* is CC whilst that of the other subspecies is cc. The hindwing colour is controlled by the autosomal A locus which is unlinked to the B and C loci (CLARKE *et al.*, 1973). The genotype of *chrysippus* and *dorippus* with brown or orange hindwings is

AA whilst in *alcippus* and *albinus* is aa. The hybrid forms *alcippoides* and *semialbinus* have Aa heterozygotes which are intermediate between AA and aa. Therefore the genotypes of *D. chrysippus chrysippus* form *alcippoides* are Aabbcc. This form is normally the result of hybridisation between *D. chrysippus alcippus* and *D. chrysippus chrysippus*. According to SMITH *et al.* (2005) most heterozygotes are identifiable by a phenotype that is intermediate between two homozygotes and this might be due to hybridisation amongst a once isolated and nascent species rather than from crosses between morphs of a polymorphic species.

Material examined

MALTA: 1 ♂, Ghar Lapsi, limits of Siggiewi, 10-XI-2013 coll J. Agius, 1 ♀, brown form, Qrendi IV-2007, leg. and coll A. Catania; Bred 4 ♀, form *alcippoides*, Qrendi V-2007, coll A. Catania.

D. chrysippus has become a regular migrant in Malta during the last years, especially in autumn. This butterfly was recorded in Malta for the first time in 1923. In some years like in 1994, 1997 and this year, *D. chrysippus* mass migrated towards North Africa and the Mediterranean area, including the Maltese Islands where the species was seen in considerable numbers all over Malta. Normally both the orange form and the brown form of *D. chrysippus* migrate over Malta and this makes perfect sense as these forms are found in Northern and Central Africa. However only one specimen of *D. chrysippus alcippus* has been recorded so far on the 10th April 1952, by A. Valletta from Wied is-Sewda (SAMMUT, 2000). A total of 48 specimens were examined during the mass migration that took place during the second week of November 2013, and except for one specimen of *D. chrysippus chrysippus* form *alcippoides*, all the other specimens were either the orange form or the brown form of *D. chrysippus chrysippus*.

From the personal observations of Mr. A. Catania, on one occasion, four female specimens of the form *alcippoides* were bred from a wild collected female of D. *chrysippus chrysippus* brown form. From the four females form *alcippoides*, three specimens have a brown forewing, whereas one specimen has an orange forewing. This shows that specimens with a brown forewing and specimens with an orange forewing can emerge from the same brood. Also, Mr. A. Catania noticed that those specimens that hatch at lower temperatures are normally of the brown form.

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Figs. 1-6.– 1-2. Adult male *Danaus chrysippus* form *alcippoides* (Linnaeus, 1758); **3-4.** Adult male *Danaus chrysippus* brown form (Linnaeus, 1758); **5-6.** Adult male *Danaus chrysippus* orange form (Linnaeus, 1758).