

Note of new and past records of *Daphnis nerii* (Linnaeus, 1758) from Malta (Lepidoptera: Sphingidae)

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Abstract

New and past records of *Daphnis nerii* (Linnaeus, 1758) from Malta are here published. The status of this migratory species is discussed.

KEY WORDS: Lepidoptera, Sphingidae, *Daphnis nerii*, Malta.

Nota sobre registros nuevos y pasados de *Daphnis nerii* (Linnaeus, 1758) en Malta (Lepidoptera: Sphingidae)

Resumen

Se publican los registros nuevos y antiguos de *Daphnis nerii* (Linnaeus, 1758) en Malta. Se discute el estado de esta especie migratoria.

PALABRAS CLAVES: Lepidoptera, Sphingidae, *Daphnis nerii*, Malta.

Introduction

The Maltese archipelago consists of three major islands, Malta, Gozo and Comino. Geographically it lies about 90 kilometres to the south of Sicily and nearly 300 km north of the North African coast. The Maltese landscape measures only 316 kilometres. There are no mountains or rivers but low hills with terraced fields on the slopes. Climate is typical Mediterranean, with two seasons, a dry summer season with temperatures of around 30° C to 35° C, and a wet season with a mild winter with the average temperature of 9° C. Average annual rainfall is 500 mm, generally between October and April. This rainfall supports little vegetation which consists of small trees, bushes and low growing vegetation.

More than 600 species of Lepidoptera are known from the Maltese archipelago and of these eight belong to the Sphingidae. Of these, seven are migratory species and one is endemic, although its correct taxonomic status is debated. The migratory species are the *Acherontia atropos* (Linnaeus, 1758), *Agrius convolvuli* (Linnaeus, 1758), *Hyles livornica* (Esper, 1780), *Macroglossum stellatarum* (Linnaeus, 1758), *Hippotion celerio* (Linnaeus, 1758), *Hyles tithymali deserticola* (Staudinger, 1901) and *Daphnis nerii* (Linnaeus, 1758). *Hemaris fuciformis* (Linnaeus, 1758) is also mentioned by Gulia (Gulia 1858), however its presence here is very doubtful and could have been a misidentification for a *Macroglossum stellatarum* (Linnaeus, 1758). The only resident species is the *Hyles sammuti* Eitschberger, Danner & Surholt, 1998, endemic to the Maltese islands (SAMMUT, 2000).

Since 1943 to date nine records of the adult *Daphnis nerii* (Linnaeus, 1758) have been recorded. The early stages are known from three larvae and a dead pupa. The first record of the Oleander

hawkmoth from Malta is of a specimen collected from the ground of what is now the King George Hospital in Floriana (VALLETTA, 1943) by Carmelo Delucca. A second specimen collected also from Floriana from the Argotti Gardens in 1955 (VALLETTA, 1973) is in a very poor state of preservation. It has been donated to Mr. Paul Sammut.

On the 24th July 1984 a third specimen was recorded from Żurrieq and donated to Mr. Stephen Schembri (Schembri 1986). Schembri comments on the fact that the moth reached him in a bad state due to mishandling. On the 7th February 1998 while on a walk at the Mnajdra megalithic temples limits of Żurrieq, a dead Oleander hawkmoth pupa was found on the surface of the soil, uncovered after rain. This pupa is in the author's collection. During the autumn of 2016 Luca Aquilina a seven year old boy, discovered three fifth instar larvae (L5) feeding on a bush of *Nerium oleander* which was planted in a large pot in a front garden at San Gwann. The three larvae pupated in captivity and when the moths emerged, in the third week of November 2016, they were given to the author.

On the 30th October 2016, a fresh male specimen was found resting on the wall next to a chapel at Ta' Giorni. A picture of this specimen was uploaded on social media by Mr. C. Spiteri Staines who collected this specimen. The specimen is now in the author's collection. Another image of a male specimen found at Birkirkara on the 20th December 2016 by Mr. F. Grixti, was uploaded on social media. This specimen was not collected.

There were no records during 2017 but 2018 proved to be again a good year for the Oleander hawkmoth. A very fresh female was collected on the 30th September 2018 from Pembroke (Fig. 1) by Mr. C. Catania. Another male photographed at Xaghra on the 3rd of November 2018 by Mr. C. Mercieca. This specimen was not collected. This is the first record for the island of Gozo. During the time of writing of this paper Mr. P. Sammut from Rabat Malta collected and kept in collection a female specimen taken on the 8th November 2018 from Howard Gardens Rabat and Mr. Chris Maggi photographed a male specimen, on the 15th November 2018 at the Malta National Stadium Ta' Qali.

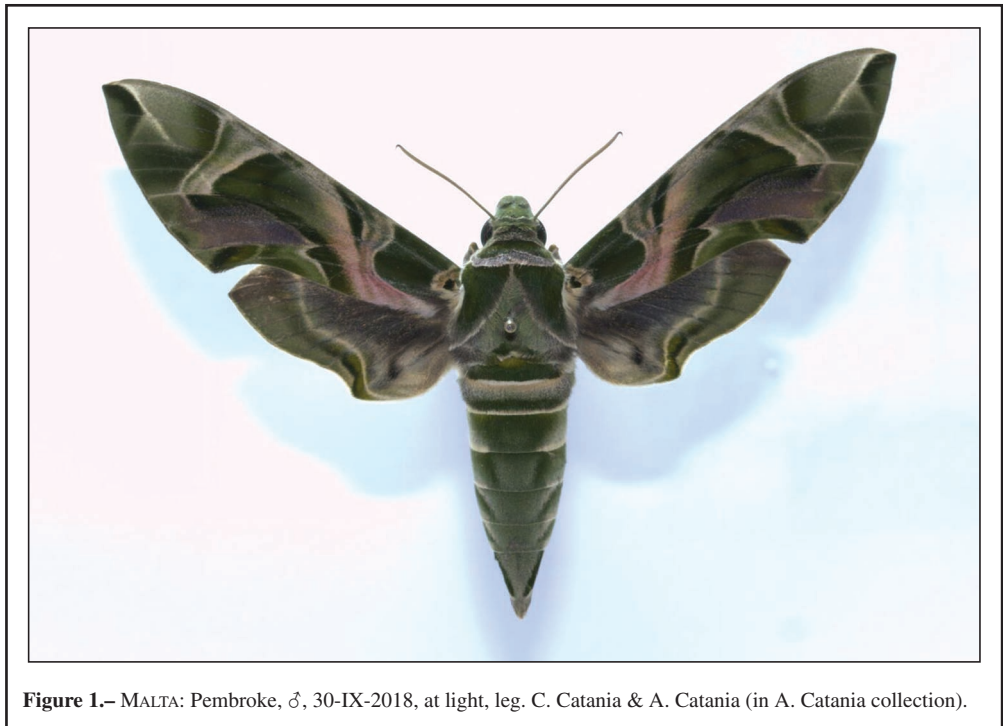


Figure 1.– MALTA: Pembroke, ♂, 30-IX-2018, at light, leg. C. Catania & A. Catania (in A. Catania collection).

Discussion

Daphnis nerii (Linnaeus, 1758) has a wide distribution across the Southern Mediterranean region, North Africa and from the Middle East to Afghanistan. In favourable years colonies may be established in Sicily, Crete, Greece and Cyprus (LEWANDOWSKI & FISHER, 2002) but all die out in the cold winter month (PITTAWAY, 2018). Migration to further north is rare. There has been a record of the moth reaching as far as Finland. There is an extra limital range to tropical Africa and southern Arabia, Afghanistan and eastward to south-east Asia and the Philippines; and northwards into central southern Asia as a migrant (PITTAWAY, 2018). *Daphnis nerii* has also been recorded in Hawaii, where it has established itself (BEARDSLEY, 1979). The moth is also found in the Western Pacific Ocean islands of Saipan and Guam (MOORE & MILLER, 2008) and Chichijima Japan (PITTAWAY, 2018).

The few records of *Daphnis nerii* (Linnaeus, 1758) from Malta are interesting, the majority of which have occurred between July and December and this correlates with the migratory period which happens at this time of the year. From summer till late autumn, *Nerium oleander* and *Catharanthus roseus* or the Madagascar Vinca, both food plants of this species, are in full bloom and although they do not grow wild in the Maltese habitat, they are used as ornamental plants in road embellishment. This increases the chance that *Daphnis nerii* (Linnaeus, 1758) might produce temporary colonies.

Daphnis nerii (Linnaeus, 1758) ova are pale green and shiny. They are laid singly on the upper and lower surfaces of young leaves which are especially favoured by the larvae. During hot weather eggs hatch between five to twelve days. Newly-hatched larvae measure between 3 to 4 mm and are yellow with a long blackish horn. They eat the eggs shell and change colour to green. A small, white eye-spot on the third thoracic segment changes to blue with white centres, ringed in black as the larva changes to the last instar. The finely warted horn is downward curved and has an unusual bulbous 'cap' which is lost in the final instar, becoming orange with a black tip. Some larvae may be rosy colour with the dorso-lateral line edged in blue. In their final instar, some become a bronze colour with rosy red anterior segments, which tends to mask the pre-pupation plum coloration; however, the newly attained blue-black dorsal colour, the now black eye-spots and unchanged white spots on either side of the dorso-lateral line remain prominent. The light brown pupa measures around 60-75 mm. It is formed within a loose cocoon spun between leaves in leaf litter. The proboscis has a thin black line and is fused with the body; the cremaster is long and slender, with a pair of apical spines and a black spot surrounding the spiracles (PITTAWAY, 2018).

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