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AGLAIS IO (LINNAEUS, 1758) IN THE MALTESE ISLANDS (LEPIDOPTERA: NYMPHALIDAE)

Denis CACHIA[1] and Arnold SCIBERRAS[2]

ABSTRACT

The appearance of two individuals of *Aglais io* (Linneus, 1758) in the Maltese Islands is reported in this work. These are only the 3rd and 4 rd Maltese records, and it is presumed to be an accidental species. All previous records are discussed.

Keywords: Lepidoptera, *Aglais io*, Maltese Islands.

INTRODUCTION

In the Maltese archipelago the Nymphalidae family is represented by 6 species, only two of which are regular migrants and sometimes residential. Both of these species also breed locally. *Vanessa cardui* (Linneus, 1758), the commonest nmphalid species on the islands, migrates by the thousands and this phenomenon is well documented (Valletta, 1952, 1971, Sammut, 1989, 2000 & Falzon 2003).Some very rare species occasionally arrive in the archipelago together with *V.cardui*. However, rare species are capable of migrating solitarily (Sciberras, 2004). *Vanessa atalanta* (Linneus, 1758) is also common, but much less so than *V.cardui* (Sciberras 2006). Its larvae however are more common than those of the latter (pers.obs.). *Polygonia egea* (Cramer, 1775) is represented by only two records (Valletta, 1948 a, b, 1980; Sammut, 2000; Sciberras & Schembri, 2005a). *Nymphalis polychlorus* (Linneus, 1758) is represented by a single record (Schembri,1986; Sammut, 2000; Sciberras & Schembri, 2005a). Although the presence of *Aglais urticae* (Linneus, 1758) was first recorded by T.B Fletcher (1904-1905), it was considered dubious by Valletta (1966, 1972) and Sammut (2000). *A. urticae* was however recently recorded twice (Sciberras & Schembri, 2005b) *Inachis io* (Linneus, 1758) was recorded from two specimens which are both regarded as accidentals (Aquilina, 1980; Valletta, 1980; Sammut 2000; Sciberras & Schembri , 2005a).

The new records of *Aglais io*

Observed data for the 3rd record: 22/viii/2010 from 11.22 to 11. 27 hours at Għadira Nature Reserve.

Weather Conditions: Sunny, clear sky, wind force 2 to 3, WNW early in the morning, veering to N by 11:00 hours, Visibility: 15 km; Atmospheric Pressure: 1015 hPa, Maximum temperature: 31.0 ^{o}C, Minimum temperature: 24.0 ^{o}C, Mean temperature: 28.0 ^{o}C (Taken at Luqa meteorological office).

[1]17, Triq il-Gardenja, Santa Lucija SLC 1194 – dcachia@maltanet.net

[2]131, 'Arnest', Arcade Str., Paola – bioislets@gmail.com

Other observations: The specimen was observed along a stretch of pathway that runs through a grove of *Tamarix* sp. by the saline lagoon of Għadira Nature Reserve. Other trees present along the path include *Pinus halepensis* Mill., *Pinus nigra* J.f. Arnold., and *Pistacia lentiscus* L. The insect was observed flying and alighting along 200m of this path. It flew short distances of about 20m at a time and always alighted on bare ground. It often alighted in the shade or partial shade provided by the trees that grow by the sides of the path. When flying, it flew up to 2m above the ground. On the ground it was observed opening and closing its wings intermittently. The flight path of the butterfly in the reserve was approximately from West to East.

The insect was photographed from about 2.5m away using a 300mm telephoto lens coupled with a 1.4 X tele-converter. The length of time the specimen spent on the ground may have been interrupted by the approach of the observer for photography. It was also noted that the specimen was seeking mainly shaded areas of the path suggesting that it was avoiding the heat of the day and that it may have been tired.

Observed data for the 4th record: 18/xi/2010 from 09.22 to 09. 31 hours at Mizieb.

Weather Conditions: Cloudy, wind force -Nil.

Other observations: The specimen was observed along a stretch of pathway that runs through a grove of *Pinus halepensis* Mill The insect was observed flying and alighting along 100m of this path. It flew short distances of about 20m at a time and always alighted on bare ground the observer tried to collect the insect but the catch was fruitless. The specimen was agile and was identified due to its unmistakable dorsal wing pattern.

DISCUSSION

Carmel Aquilina (1980) records that a single specimen of *Inachis io* was taken by J.Doublet the first week of March 1975 near Portes des Bombes, Floriana**(Fig1)**. The specimen was seen alive by two witnesses, Mr M. Agius and Mr Ph. Gouder. Anthony Valletta informed Aquilina that during the previous summer, two specimens of this species escaped from his ventilator from material he had brought from England. Due to the physical state of one specimen which was later captured, it was suggested that the specimen might have been one of the two escapees which had survived on the island through hibernation. Another possibility would have been that the specimen arrived with some kind of cargo as Valletta (1980) suggested, in similarity to what happened to another specimen found by M.Muscat. This was found in a newly purchased imported car in late December 1991. This specimen was given to P. Sammut who suggested that the specimen might have pupated in the car and considerable changes in temperature due to transportation contributed to an early emergence (Sammut, 2000). Both Aquilina and Valletta agree that it is highly unlikely that this species arrived by natural means. This is because it is absent in North Africa and in Sicily it is very rare, restricted only to the Madonie Mountains in Palermo and on Mt Etna above 800m. The Għadira**(Fig2)** and the Mizieb specimens might be a similar result of the previous two records, but since Gooden (1971) mentions this species as sometimes being migratory, there might be the possibility that these specimens could have easily arrived by a natural cause. The Ghadira and Mizieb specimens both had a light coloured pattern suggesting that they overwintered in Malta or that they arrived by migration. These two records could also have been the result of the same specimen being seen in two very close localities in different dates. It is also interesting to note that during the month of August 2010, a slight increase of "whites", mainly *Pieris rapae* (Linneus, 1758), was observed. Their number increased so rapidly that it is unlikely that they derived from local stock and *Inachis io* might have arrived with them. *V.cardui* was also present in moderate numbers. If migration is not the means through which this species arrived on the islands, another reason could be the vegetation imported for the improvement of Foresta 2000 site near Ghadira Nature Reserve between 2004 and 2007. Other species of insects became established due to this importation (Sciberras & Sciberras, 2010). Aquilina(1980) mentions that if this species is confined to its usual food plant – *Urtica* sp. – then the only time of year its larvae could be observed in Malta is in spring. On the continent, the flight period is from July onwards, and those specimens which survive through hibernation, will be seen the

following spring. Thus in Malta, this species could survive from year to year through hibernation. Another alternative would be that it may adapt by shifting food habits, like *V. atalanta,* but according to Valletta (1981) this species is not able to do so, at least from his observations in captivity. The hypothesis of this species being imported with Foresta 2000 material has its drawback. This is because even though when resting, the species enables excellent camouflage with dry and old vegetation due to its dark colored underwings, in flight and activity, it is a highly colored exposed species due to it typical unmistakable dorsal wings pattern.

CONCLUSION

Whether these sightings are of an accidental importation or a natural occurrence, this will surely remain an unanswered question, due to lack of evidence on both cases. Only future repetitive observations may foretell that these records are other occurrences of a very rare species which is slowly establishing itself in Malta, eventually becoming part of the local fauna.

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Fig1 **Fig2**

Fig1 *Aglais io* from Floriana-/iii/1975.(Photo – J.Doublet).

Fig2 *Aglais io* from Ghadira Nature Reserve-22/viii/2010.(Photo – D.Cachia).

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