

## Three species of butterflies new for the North Aegean Island of Lemnos (Greece)

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**Abstract:** The paper presents results of a brief entomological surveys carried out in the southern parts of Lemnos Island in 2016, 2017 and 2019. It includes a list of 14 recorded species of butterflies, three of which are new for the island.

**Keywords:** butterfly, distribution, Lepidoptera, Lemnos, new records

### Introduction

The first information for the butterflies of the Lemnos [Límnos] Island is found in the earliest works on Greek Lepidoptera fauna by Mathew (1898) and Rebel (1934, 1937). The detailed work of Olivier (1988) includes 31 species, 13 of which are new for the island. Thirteen years later another special article devoted to the island's butterfly fauna has followed. It also includes 31 species, four of which are an addition (Coutsis, 2001). Altogether 33 species of butterflies are known from the island till now, with records of two of these 33 species, *Coenonympha pamphilus* (Linnaeus, 1758) and *Lasiommata maera* (Linnaeus, 1758), being questionable.

### Results

During three visits of Lemnos in 2016, 2017 and 2019 some butterfly species has been observed and photographed. Three of them are new for the island's fauna – *Pelopidas thrax* (Hübner, [1821]), *Cacyreus marshalli* Butler, 1898, *Danaus chrysippus* (Linnaeus, 1758).

The species are listed in taxonomical order following the nomenclature of Tshikolovets (2011).

The list of localities contains the relevant toponyms, a short description of the habitat, altitude, coordinates and dates of the observations. Localities are arranged from the West to the East (Fig. 1):

- [L01] near Myrina; Kastro, 70 m; 39.877844°N, 25.055000°E; 05.ix.2016; pseudosteppe with grasses and annuals.
- [L02] Moudros; in the village, 15 m; 39.873381°N, 25.268911°E; 27.viii.2016; gardens and flowerbeds.
- [L03] Havouli beach; 5 m; 39.838378°N, 25.264263°E; 30.viii.2016; Aegean phrygana, dune sclerophyllous scrubs, shrubby formations with *Quercus coccifera* L., *Pinus halepensis* Mill.
- [L04] near Havouli beach; 34 m; 39.838557°N, 25.273076°E; 04.ix.2019; Aegean phrygana, slacks with reedbeds and *Tamarix* L. (Fig. 2).
- [L05] Parthenomitos beach; 3 m; 39.829545°N, 25.284706°E; 09.ix.2017; shifting dunes along

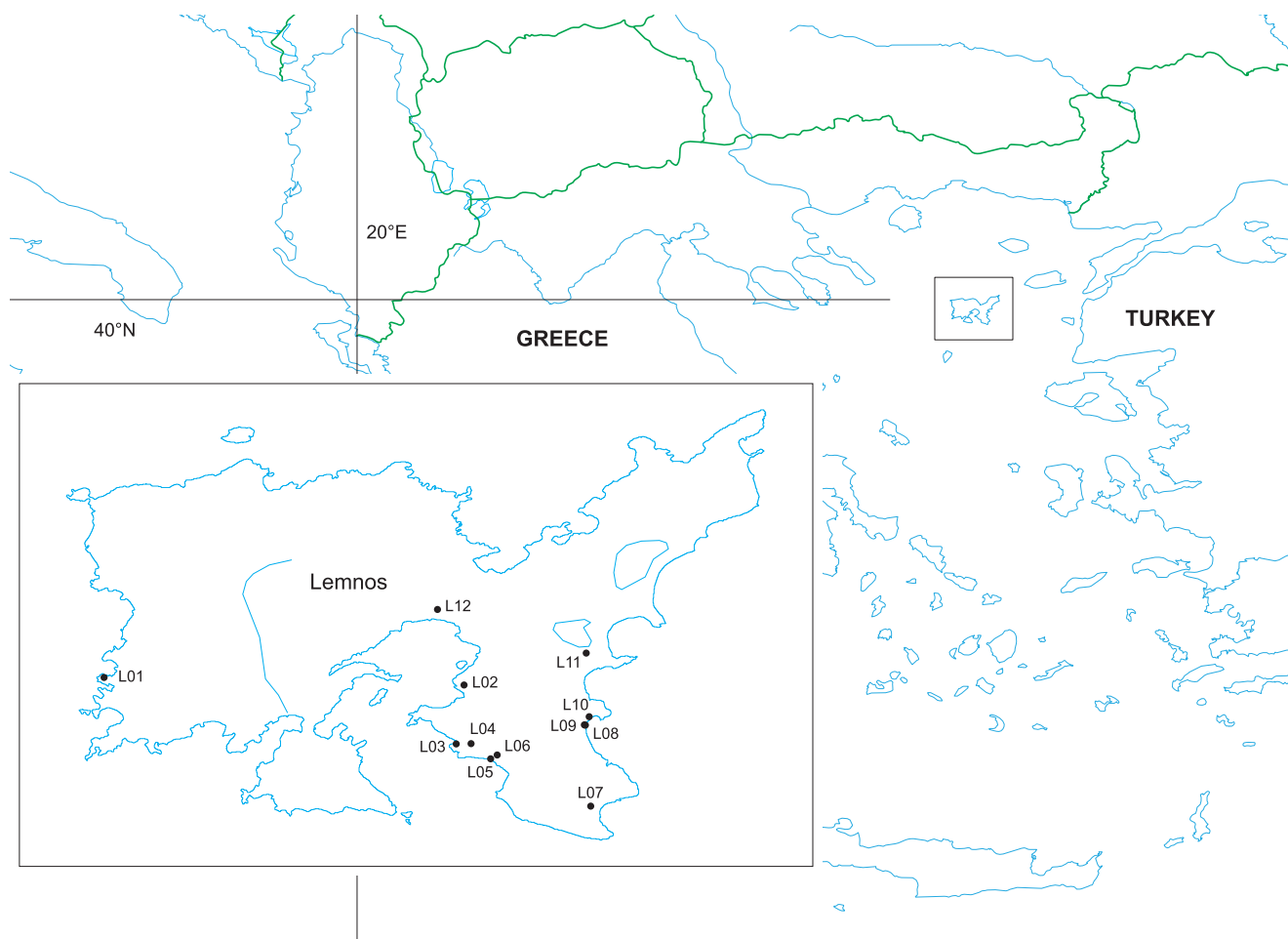


Fig. 1. Map of the localities on the Island of Lemnos, generated with QGIS 3.2 Bonn, Mac OS X version.

the shoreline with *Ammophila arenaria* (L.) Link, intermittently flowing Mediterranean rivers, Aegean phrygana (*Sarcopoterium spinosum* (L.) Spach) (Fig. 3).

[L06] near Parthenomitos beach; 25 m; 39.831814°N, 25.288597°E; 09.ix.2017; Aegean phrygana (*Sarcopoterium spinosum*) (Fig. 4).

[L07] near Skandali; 23 m; 39.801425°N, 25.344184°E; 03.ix.2017; sand dunes with *Ammophila arenaria*, *Pancreatium maritimum* L., *Achillea maritima* (L.) Ehrend. & Y. P. Guo and *Centaurea spinosa* L., dune sclerophyllous scrubs, Aegean phrygana (*Sarcopoterium spinosum*).

[L08] Red Rock Beach; 10 m; 39.849708°N, 25.340398°E; 07.ix.2019; shifting dunes along the shoreline with *Ammophila arenaria*, dune

sclerophyllous scrubs, Aegean phrygana (*Sarcopoterium spinosum*).

[L09] Red Rock Beach; 8 m; 39.849538°N, 25.341025°E; 10.ix.2019; Aegean phrygana, shifting dunes along the shoreline with *Ammophila arenaria*, dune sclerophyllous scrubs (Fig. 5).

[L10] Ancient Poliochni; 15 m; 39.854548°N, 25.343265°E; 01.ix.2016; archaeological ruins and garden close to visitors centre of Ancient Poliochni (Fig. 6).

[L11] S shore of Chortarolimni Lake; 5 m; 39.892337°N, 25.341514°E; 01.ix.2016; salt steppes (Limonietalia) and Mediterranean halophilous scrubs (Fig. 7).

[L12] E of Lemnos Airport; 2 m; 39.91769°N, 25.252093°E; 03.ix.2017; Mediterranean halophilous scrubs (*Arthrocnemum fruticosae*).





Fig. 2. [L04] near Havouli beach, habitat of *Pelopidas thrax*.



Fig. 3. [L05] Parthenomitos beach, a place where *Danaus chrysippus* has been observed.

The butterfly species recorded during our visits on the Island of Lemnos are as follows:

#### Hesperiidae

*Carcharodus alceae* (Esper, [1780]): near Parthenomitos beach, 09.ix.2017.

*Spialia orbifer* (Hübner, [1823]): near Parthenomitos beach, 09.ix.2017.

*Pelopidas thrax* (Hübner, [1821]): near Havouli beach, 04.ix.2019 (Fig. 8). *P. thrax* ranges from the eastern Mediterranean to Africa and across subtropical and tropical Asia to Indonesia. In the eastern part of the Aegean Sea it is previously known only from Dodecanese Islands (Samos, Kos, Rhodes) – Cuvelier (2009), Cuvelier & Mølgaard (2012). The species is also known from the Turkish coast (Hesselbarth et al., 1995). This species is multivoltine – usually from April





Fig. 4. [L06] near Parthenomitos beach, habitat of *Gegenes nostradamus*, *Spialia orbifer*, *Carcharodus alceae*, *Maniola jurtina*.



Fig. 5. [L09] Red Rock Beach, a place where *Danaus chrysippus* has been observed.





Fig. 6. [L10] Ancient Poliochni, habitat of *Lampides boeticus*, *Leptotes pirithous*, *Lycaena phleas*, *Vanessa atalanta*, *Argynnis pandora*.



Fig. 7. [L11] South shore of Chortarolimni Lake, habitat of *Pontia edusa*.





Fig. 8. Millet skipper *Pelopidas thrax*, male.



Fig. 9. Mediterranean skipper *Gegenes nostrodamus*, male.



Fig. 10. Female of geranium bronze *Cacyreus marshalli*, ovipositing on *Pelargonium*.



Fig. 11. Plain tiger *Danaus chrysippus*, male.

to November, but all year round in some places, or in the tropics.

*Gegenes nostrodamus* (Fabricius, 1793): near Parthenomitos beach, 09.ix.2017 (Fig. 9).

#### Pieridae

*Pontia edusa* (Fabricius, 1777): S shore of Chortarolimni Lake, 01.ix.2016.

#### Lycaenidae

*Lycaena phleas* (Linnaeus, 1761): Ancient Poliochni, 01.ix.2016; near Skandali, 03.ix.2017; E of Lemnos Airport, 03.ix.2017; Parthenomitos, 09.ix.2017.

*Lampides boeticus* (Linnaeus, 1767): Ancient Poliochni, 01.ix.2016.

*Leptotes pirithous* (Linnaeus, 1767): Ancient Poliochni, 01.ix.2016.

*Cacyreus marshalli* Butler, 1898: Moudros, 27.viii.2016 (Fig. 10). It was introduced accidentally from South Africa to the European Mediterranean (initially in Majorca on the Balaeric Islands) in 1988, and in 1993 reached the European mainland, where it spreads further as a pest of cultivated *Pelargonium*. During the past 25 years, the butterfly has colonised much of North Africa and southern Europe and now is widespread in the Mediterranean region. In the eastern part of the Aegean Sea previously known from Dodecanese Islands and some of the North Aegean Islands (Samos, Fourni, Chios, Lesbos) as well as the Turkish coast – Langourov & Simov (2017). The species is multivoltine – on wing from March/April to November.



*Polyommatus icarus* (Rottemburg, 1775): near Parthenomitos beach, 09.ix.2017.

## Nymphalidae

*Danaus chrysippus* (Linnaeus, 1758): Parthenomitos beach, 09.ix.2017; Red Rock Beach, 07.ix.2019, 10.ix.2019. All specimens are flying from the sea towards north (Fig. 11). *D. chrysippus* is a polyvoltine, polyphagous wide-ranging migrant species. It is widespread in Asia, Africa and Australia and from the North African coastal regions it has colonised coastal areas of the Canary Islands and after 1970s and 1980s – along the N Mediterranean coast. Tennent (1995, 1996) indicated trends in the movement of the species range to the north, extending to NW Africa (Morocco, Algeria, Tunisia) and that the species uses resident populations to gradually extend its range further north to European countries (Morgun & Ilyina, 2021). In the eastern part of the Aegean Sea, the species is previously known from some of the North Aegean Islands (Imbros [Gökçeada] – Okyar & Aktaş (2006); Chios and Samos – Pamperis (2009); Lesbos – Martin & Russell (2013) and some of the Dodecanese Islands (Astypalaia, Kos, Nisyros, Rhodes, Tilos, Symi) (Cuvelier & Mølgaard, 2012; Galanos, 2017). The species is also known from the Turkish coast (Hesselbarth et al., 1995). The coincidence of this butterfly with *Pelopidas thrax* on some Aegean islands is discussed by Martin & Russell (2013). Most of the observations in regions where the species does not form permanent populations (Cyprus, Greece, Turkey) are from September to November. All observed specimens showed typical migratory behaviour – flying towards north. The same pattern was recorded in Jordan, but earlier in the year (at beginning of April, near Aqaba, personal observations).

*Maniola jurtina* (Linnaeus, 1758): 30.viii.2016, Havouli beach; 05.ix.2016, near Myrina; near Parthenomitos beach, 09.ix.2017.

*Vanessa atalanta* (Linnaeus, 1758): Ancient Poliochni, 01.ix.2016.

*Argynnis pandora* ([Denis & Schiffermüller], 1775): Ancient Poliochni, 01.ix.2016.

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