

The butterflies of the Greek island of Kálimnos (Lepidoptera: Hesperioidea & Papilionoidea)

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Samenvatting. De dagvlinders van het Griekse eiland Kálimnos (Lepidoptera: Hesperioidea & Papilionoidea)

Na een korte inleiding over het eiland Kálimnos en de geschiedenis van het er gedane lepidopterologisch onderzoek, worden de 31 van het eiland bekende dagvlindersoorten besproken. 12 hiervan worden in deze publikatie voor de eerste maal van dit eiland vermeld. Op één na zijn alle soorten welke op Kálimnos voorkomen tevens op het nabijgelegen eiland Kós vertegenwoordigd. De dagvlinderfauna van Léros toont eveneens een grote gelijkenis met deze van Kálimnos en Kós. Bovendien is bij geen enkele soort enige taxonomische differentiatie vast te stellen. Deze eilanden zijn dan ook minder dan 9.000 jaar geleden van elkaar gescheiden en van het Turkse vasteland geïsoleerd geraakt. Er wordt aangenomen dat nu ongeveer 90% van de dagvlinderfauna van Kálimnos gekend is.

Résumé. Les papillons diurnes de l'île grecque de Kálimnos (Lépidoptères: Hesperioidea & Papilionoidea)

Après un bref aperçu sur les généralités de l'île de Kálimnos et de l'histoire de la recherche lépidoptérique effectuée, les 31 espèces de papillons diurnes connues actuellement de l'île sont traitées. 12 d'entre elles sont recensées pour la première fois de l'île dans la présente publication. A une exception près, toutes les espèces existant à Kálimnos ont également été retrouvées à l'île toute proche de Kós. La faune lépidoptérique diurne de Léros montre également une grande similitude avec celles de Kálimnos et de Kós. De plus, aucune différenciation taxinomique n'a pu être constatée chez quelque espèce. Il s'avère qu'effectivement ces îles se sont trouvées isolées les unes des autres ainsi que de la terre ferme turque depuis moins de 9.000 ans. Il est admis qu'approximativement 90% de la faune des papillons diurnes de Kálimnos est déjà connue à l'heure actuelle.

Key words : butterflies - Kálimnos - Kós - Léros - Greece.

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Introduction

The Greek island of Kálimnos lies in the SE. Aegean Sea, to the northwest of Kós and to the west of the Bodrum Peninsula (Prov. Muğla, Turkey). It has an area of about 70 km²: its highest summit is the Profitis Iliás (about 679 m), that lies almost in the middle of the island, north of the main town of Kálimnos (also called Pothéa). The island is very mountainous, consisting of three parallel ridges running from NW. to SE., that are composed of Mesozoic limestone. The few valleys are mostly intensively cultivated, with all kinds of Mediterranean fruits being grown. The imposing limestone ridges are mostly entirely treeless and covered with highly grazed garrigue vegetation. The very irregular coastline is mostly steep with only few sandy beaches. Kálimnos is much drier than Kós and the nearby Bodrum Peninsula. Two-thirds of the about 15.000 inhabitants live in the main town : the lengthy peninsula to the NW. of Arginónda is almost uninhabited.

The small islet of Téliendos (5 km²), to the west of Kálimnos, became isolated from that island only after an earthquake in the 5th Century BC (Hansen 1980).

The islet of Psérimos (10 km²), to the east of Kálimnos, about half-way to Kós, is almost devoid of trees and mostly covered with garrigue vegetation.

The first publication mentioning butterfly records from Kálimnos (Rebel 1936) was based on material collected by the Austrian herpetologist Dr Otto Wettstein-Westersheim on the outskirts of the main town, between 2 and 4.VI.1935: 11 species were reported.

It took exactly 55 years before another person took any interest in the island's butterflies, except for one single casual record, published by Olivier (1987), of a species

that was already known from this island. The Scottish lepidopterist Dr George Thomson visited Kálimnos on 12–13, 15–16 & 20–23.VII.1990, observing 15 species, of which 7 were new. Olivier (1993) listed the 18 species known up to 1990.

Further records can be found in Rebel (1937), Hartig (1940), Bernardi (1961, 1971), Olivier (1990), Olivier & Coutsis (1993, 1995), Olivier & De Prins (*in press*) and Hesselbarth, van Oorschot & Wagener (1995).

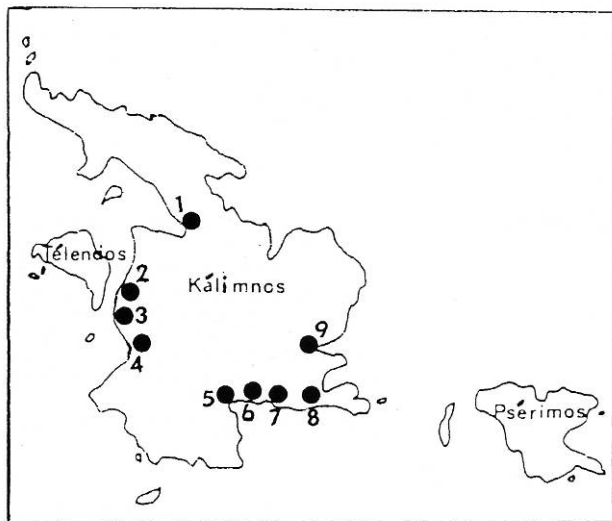


Fig. 1: Map of Kálimnos, Téliendos and Psérimos, with localities listed in the Systematic Part.

1. Arginónða (50–100 m)
2. Masoùri
3. Mirtiés (0–100 m)
4. Pánormos (50 m)
5. Kálimnos (0–100 m)
6. 1 km E. Kálimnos (50 m)
7. 2 km E. Kálimnos (50 m)
8. 4 km E. Kálimnos (0–100 m)
9. Vathís (0–50 m)

Systematic Part

Both the complete previously published records that I could trace in literature (L) as well as own new data (N) are listed, supplemented by those from Thomson (T): together, 9 localities are covered for the months of April, June and July (and one single record from 30.V.).

Nomenclature largely follows Olivier (1993) and Hesselbarth, van Oorschot & Wagener (1995), except for three taxa, viz. *Polyommatus loewii loewii* (Zeller, 1847), *Polyommatus agestis* ([Denis & Schiffermüller], 1775) and *Lasiommata megera lyssa* (Geyer, [1828]) (see Olivier & De Prins *in press* for an explanation). Data on ecology and phenology can be found in the two first-mentioned works and these will not be repeated here. An asterisk (*) indicates that the species is new to the island.

Thymelicus sylvestris syriacus (Tutt, [1905])

L – “Eine Anzahl Stücke (♂, ♀) von Kalymnos, Pothea, 2. bis 4.VI.[1935].” (Rebel 1936: 27)

– “Kálimnos, 30.V.1979, 1 ♂ (very worn) (C[W. CHRISPIJN]).” (Olivier 1987: 78)

– further reported by Rebel (1937: 66), Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 168, 1110 [Table 27])

N – Mirtiés (50–100 m), 2.VI.1992, 15.VI.1992

– Arginónða (50–100 m), 14.VI.1992

– 2 km E. Kálimnos (50 m), 13.IV.1995

Gegenes pumilio pumilio (Hoffmansegg, 1804)

L – previously reported by Olivier (1993: 198 [Table 12])

N – Mirtiés, 20.VII.1990 (T)

– Mirtiés (0–50 m), 15.IV.1995

– Kálimnos (0–50 m), 15.IV.1995

Carcharodus alceae alceae (Esper, [1780])

L – “Kalymnos, Pothea, 2. Bis 4.VI.[1935], ein kleines ♂ (...).” (Rebel 1936: 27)

– further reported by Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1110 [table 27])

N – Mirtiés, 13.VII.1990 (T)

– Mirtiés (50–100 m), 2.VI.1992

– Mirtiés (0–50 m), 13.IV.1995

– Masoúri, 22.VII.1990 (T)

– Pánormos (50 m), 2.VI.1992

– Kálimnos (50–100 m), 14.IV.1995

Carcharodus orientalis Reverdin, 1913

L – “Sieben Stücke von Kalymnos, Pothea, 2. bis 4.VI.[1935], in der Größe wechselnd (14 bis 16 mm Vorderflügelänge), zeigen oberseits olivenbräunliche Vorderflügel und schwärzliche Hinterflügel mit bräunlichweißer schmaler Mittelbinde. Bei frischen Stücken ist die Grundfarbe der Hinterflügelunterseite matt zimtbräunlich.” (Rebel 1936: 27)

– further reported by Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1110 [Table 27])

N – Arginónnda (50–100 m), 2.VI.1992

It is quite possible that the specimens referred to by Rebel (1936) belong in fact to the next species, that I found to be much more common on Kálimnos than the present one.

Carcharodus stauderi ambiguus (Verity, 1925)

L – previously reported by Olivier (1994: 87)

N – Arginónnda (50–100 m), 2.VI.1992, 14.VI.1992, 15.VI.1992

– 4 km E. Kálimnos (0–100 m), 3.VI.1992

* *Zerynthia cerisy cerisy* (Godart, [1824])

N – Vathís (0–50 m), 13.IV.1995

– 4 km E. Kálimnos (50–100 m), 13.IV.1995, 15.IV.1995

– Mirtiés (0–50 m), 13.IV.1995, 14.IV.1995, 15.IV.1995

– Arginónnda (50 m), 14.IV.1995, 15.IV.1995

Iphiclides podalirius podalirius (Linnaeus, 1758)

L – “Ein frisches ♂ von Kalymnos, Pothea, 2. bis 4.VI.[1935], (...).” (Rebel 1936: 20)

– further reported by Bernardi (1971: 25), Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1110 [Table 27])

N – Mirtiés, 12.VII.1990 (T), 21.VII.1990 (T)

– Mirtiés (50–100 m), 15.VI.1992

– Mirtiés (0–50 m), 13.IV.1995

– Masoúri, 12.VII.1990 (T)

– Arginónnda, 15.VII.1990 (T), 23.VII.1990 (T)

– Vathís, 16.VII.1990 (T)

– Vathís (0–50 m), 14.VI.1992, 13.IV.1995

* *Papilio machaon syriacus* Eller, 1936

- N – Vathís (50 m), 3.VI.1992
- Arginónnda (50–100 m), 15.VI.1992
- Kálimnos (50–100 m), 14.IV.1995

* *Colias crocea* (Fourcroy, 1785)

- N – Mirtiés (0–50 m), 13.IV.1995

* *Euchloe (ausonia) ausonia taurica* Röber, [1907].

- N – Mirtiés (0–50 m), 13.IV.1995, 15.IV.1995

Pieris brassicae brassicae (Linnaeus, 1758)

- L – “ein weiteres ♂ von Kalymnos, Pothea, 2. bis 4.VI.[1935], (...)” (Rebel 1936: 21)
- further reported by Bernardi (1971: 25), Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1111 [Table 27])

- N – Masóuri, 12.VII.1990 (T)
- Arginónnda, 15.VII.1990 (T)
- Mirtiés, 21.VII.1990 (T)
- Mirtiés (0–50 m), 13.IV.1995, 15.IV.1995

Pieris rapae rapae (Linnaeus, 1758)

- L – previously reported by Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1111 [Table 27])

- N – Masóuri, 12.VII.1990 (T)
- Pánormos (50 m), 2.VI.1992
- Mirtiés (0–50 m), 13.IV.1995

Pontia (daplidice) edusa (Fabricius, 1777)

- L – “Je ein ♀ mittlerer Größe von Kalymnos, Pothea, 2. bis 4.VI.[1935]. (...)” (Rebel 1936: 22)

- further reported by Bernardi (1971: 25), Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1111 [Table 27])
- N – Vathís, 16.VII.1990 (T)

Lycaena phlaeas phlaeas (Linnaeus, 1761)

- L – “Kalymnos, Pothea 2. bis 4.VI.[1935], 20 Stücke von sehr wechselnder Größe (17 bis 25 mm Expansion); (...)” (Rebel, 1936: 26)

- further reported by Bernardi (1961: 193 [Fig. 3]; 1971: 24, 27 [Map 2]), Olivier (1993: 198 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1111 [Table 27])

- N – Mirtiés, 12.VII.1990 (T)
- Mirtiés (0–50 m), 13.IV.1995
- Arginónnda, 15.VII.1990 (T)
- Pánormos (50 m), 15.VI.1992

* *Callophrys rubi* (Linnaeus, 1758)

- N – 4 km E. Kálimnos (50–100 m), 13.IV.1995, 15.IV.1995

* *Lampides boeticus* (Linnaeus, 1767)

- N – Mirtiés (50–100 m), 2.VI.1992

Phegea 24 (4) (1.XII.1996): 152

* *Pseudophilotes vicrama schiffermuelleri* (Hemming, 1929)

N – 2 km E. Kálimnos (50 m), 13.IV.1995

– Kálimnos (50-100 m), 14.IV.1995

* *Glaucopsyche alexis alexis* (Poda, 1761)

N – 4 km E. Kálimnos (50–100 m), 13.IV.1995, 15.IV.1995

– Mirtiés (0–50 m), 13.IV.1995, 14.IV.1995

Polyommatus loewii loewii (Zeller, 1847)

L – “Ein ♀ von Kalymnos, Pothea, 2. bis 4.VI.[1935], (...). Die Art erreicht auf Kos und Kalymnos wohl ihre nordöstliche Verbreitungsgrenze.” (Rebel 1936: 26-27)

– further reported by Bernardi (1961: 184, 207; 1971: 28), Olivier (1993: 106, 199 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 613, 614, 1112 [Table 27])

N – Pánormos (50 m), 2.VI.1992

– Arginónnda (50–100 m), 2.VI.1992

– Kálimnos (50 m), 3.VI.1992

– 4 km E. Kálimnos (0-100 m), 3.VI.1992

* *Polyommatus agestis* ([Denis & Schiffermüller], 1775)

N – Pánormos (50 m), 2.VI.1992

Polyommatus icarus (Rottemburg, 1775)

L – “Kalymnos, Pothea, 2. bis 4.VI.[1935], 4 ♂ : (...).” (Rebel 1936: 26)

– further reported by Bernardi (1971: 25, 27 [Map 2]) and Olivier (1993: 199 [Table 12])

N – Vathís, 16.VII.1990 (T)

– Mirtiés, 21.VII.1990 (T)

– Mirtiés (0–50 m), 13.IV.1995, 14.IV.1995

– Pánormos (50 m), 2.VI.1992

Kirinia roxelana (Cramer, [1777])

L – previously reported by Olivier (1993: 199 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1112 [Table 27])

N – Mirtiés, 12.VII.1990 (T)

– Mirtiés (50–100 m), 2.VI.1992

– Masoúri, 12.VII.1990 (T)

– Arginónnda, 15.VII.1990 (T), 23.VII.1990 (T)

– Vathís, 16.VII.1990 (T)

– Pánormos (50 m), 15.VI.1992

Lasiommata megera lyssa (Geyer, [1828])

L – previously reported by Olivier (1993: 199 [Table 12])

N – Masoúri, 12.VII.1990 (T)

– Pánormos (50 m), 15.VI.1992

– Arginónnda (50–100 m), 15.VI.1992

* *Lasiommata maera* (Linnaeus, 1758)

N – Arginónnda (50-100 m), 14.VI.1992

– Mirtiés (0-50 m), 13.IV.1995

Maniola telmessia (Zeller, 1847)

- L – “Von Kalymnos, Pothea, 2. bis 4.VI.[1935], (...)” (Rebel 1936: 25)
– further reported by Hartig (1940: 231), Bernardi (1961: 184; 1971: 27), Olivier (1990: 182-183; 1993: 199 [Table 12]), Olivier & Coutsis (1993: 114, 115 [Fig. 1], 116, 123 [Table 1], 124 [Table 2], 126 [Table 3], 127 [Table 4]; 1995: 10 [Fig. 2], 11, 12 & 14 [Table 2], 27, 32 [Table 12], 34 [Table 13], 56) and Hesselbarth, van Oorschot & Wagener (1995: 827, 1112 [Table 27])
- N – Mirtiés, 12.VII.1990 (T), 13.VII.1990 (T), 21.VII.1990 (T)
– Mirtiés (50–100 m), 2.VI.1992
– Mirtiés (0–50 m), 15.IV.1995
– Masóuri, 12.VII.1990 (T)
– Arginónnda, 23.VII.1990 (T)
– Arginónnda (50-100 m), 2.VI.1992, 15.VI.1992
– Pánormos (50 m), 2.VI.1992
– Kálimnos (50–100 m), 14.IV.1995
– 2 km E. Kálimnos (50 m), 13.IV.1995
– 4 km E. Kálimnos (0–100 m), 3.VI.1992, 13.IV.1995, 15.IV.1995

Hipparchia fatua fatua Freyer, [1844]

- L – previously reported by Olivier (1993: 136-137, 199 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1113 [Table 27])
- N – Mirtiés, 13.VII.1990 (T)
– Arginónnda, 15.VII.1990 (T), 23.VII.1990 (T)
– Vathís, 16.VII.1990 (T)
– Pánormos (50 m), 15.VI.1992

Pseudochazara anthelea anthelea (Hübner, [1824])

- L – previously reported by Olivier (1993: 140, 199 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 962, 1113 [Table 27])
- N – Arginónnda, 23.VII.1990 (T)

* *Vanessa atalanta atalanta* (Linnaeus, 1758)

- N – Mirtiés (50–100 m), 2.VI.1992
– Mirtiés (0–50 m), 13.IV.1995, 15.IV.1995

Vanessa cardui (Linnaeus, 1758)

- L – previously reported by Olivier (1993: 199 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1113 [Table 27])
- N – Masóuri, 12.VII.1990 (T)
– Vathís, 16.VII.1990 (T)
– 4 km E. Kálimnos (100 m), 14.VI.1992
– 4 km E. Kálimnos (50–100 m), 15.IV.1995
– Mirtiés (0–50 m), 13.IV.1995

Polygonia egea (Cramer, [1775])

- L – “Kalymnos, Pothea, 2. Bis 4.VI.[1935], ein sehr großes ♀ von 28 mm Vorderflügelänge der hellen Sommerform.” (Rebel 1936: 23)
– further reported by Hartig (1940: 232), Bernardi (1971: 27), Olivier (1993: 193, 199 [Table 12]) and Hesselbarth, van Oorschot & Wagener (1995: 1113 [Table 27])
- N – Mirtiés, 12.VII.1990 (T), 21.VII.1990 (T)

- Masoúri, 12.VII.1990 (T)
- Vathís (0–50 m), 14.VI.1992
- Arginónða (50–100 m), 14.VI.1992

* *Melitaea trivía trivía* ([Denis & Schiffermüller], 1775)

N – 1 km E. Kálimnos (50 m), 14.VI.1992

Discussion

The butterfly fauna of Kálimnos is an impoverished version of that from the nearby island of Kós: all its known species but one – *Pseudophilotes vicrama schiffermuelleri* (Hemming, 1929) – have been found as well on the latter island, while 8 species, i.e. about 25% of its butterfly fauna, remain unrecorded from the Bodrum Peninsula at present: this certainly reflects the incomplete exploration of the latter area. Two species that have been found in all adjacent areas (Bodrum Peninsula, Kós and Léros) (Olivier 1993 and *in prep.*; Olivier & De Prins *in press*; Hesselbarth, van Oorschot & Wagener 1995) are unknown from Kálimnos until now, viz. *Lycaena thersamon* (Esper, [1784]) and *Hipparchia senthes* (Fruhstorfer, 1908). They may have become extinct there, though it seems plausible that they have been overlooked so far. All remaining species known from Léros (and Pátmos as well) can also be found on Kálimnos (Olivier *in prep.*).

None of the populations of any species that occur on Kálimnos have differentiated significantly, not even subspecifically, from their representatives on Kós and on the adjacent mainland. This points to a common history of these butterfly faunas up to a very recent past. Paleogeographic data support this, as the islands of Kós, Kálimnos and Léros became isolated from the Anatolian mainland and from each other less than 9.000 BP (van Andel & Shackleton, 1982).

It is possible that about 90% of the butterfly fauna of Kálimnos is already known at present and it seems unlikely that any future discovery will alter the present conclusions much.

Addendum: the butterflies of Psérimos and Télendos

Psérimos

– deep trench with rich vegetation in gorge garrigue, 19.VII.1990 (all G. Thomson leg.)

Iphiclides podalirius podalirius (Linnaeus, 1758)

Pontia (daplidice) edusa (Fabricius, 1777)

Maniola telmessia (Zeller, 1847)

Hipparchia fatua fatua Freyer, [1844]

Vanessa cardui (Linnaeus, 1758)

Previous literature records: Olivier (1993: 136–137 [*H. fatua*], 198–199 [Table 12] [*all taxa*]); Olivier & Coutsis (1993: 114, 115 [Fig. 1]; 1995: 10 [Fig. 2], 11, 56); Hesselbarth, van Oorschot & Wagener (1995: 827 [*M. telmessia*], 1110–1113 [Table 27] [*all taxa*]).

Télendos

– gorge garrigue, 18.VII.1990 (all G. Thomson leg.)

Iphiclides podalirius podalirius (Linnaeus, 1758)

Colias crocea (Fourcroy, 1785)

Pieris rapae rapae (Linnaeus, 1758)

Lycaena phlaeas phlaeas (Linnaeus, 1761)

Kirinia roxelana (Cramer, [1777])
Maniola telmessia (Zeller, 1847)
Hipparchia fatua fatua Freyer, [1844]

Previous literature records: Olivier (1993: 136–137 [*H. fatua*], 198–199 [Table 12] [*all taxa*]); Olivier & Coutsis (1993: 114, 115 [Fig. 1]; 1995: 10 [Fig. 2], 56); Hesselbarth, van Oorschot & Wagener (1995: 827 [*M. telmessia*], 1110–1113 [Table 27] [*all taxa*: they erroneously also include *Polyommatus icarus* (Rottemburg, 1775), a species that hasn't been reported from T elendos so far]).

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