

***Maniola megala* (Lepidoptera: Nymphalidae, Satyrinae) from the Greek island of Lésvos; a historical review of past relevant publications, and an illustration and description of its male and female genitalia**

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Abstract. A review of past publications concerning the occurrence of *Maniola megala* (Oberthür, 1809) on the Greek eastern Aegean island of Lésvos is presented; the finds about this species on Lésvos in Russell & Hall (2009) and Russell (2012) are discussed and commented upon; the genitalia, both male and female, of Lesvian *M. megala* and the syntopic and partly synchronous *M. telmessia* (Zeller, 1847) are figured, described and compared with each other; the male genitalia of a Turkish *M. megala* are figured and compared with those of its Lesvian counterpart, and finally the conclusion is reached that though, perhaps, the Lesvian *M. megala* may indeed represent a distinct subspecies, the evidence presently at hand is insufficient for making such a deduction.

Samenvatting. Er wordt een overzicht gegeven van de publicaties over het voorkomen van *Maniola megala* (Oberthür, 1809) op het Griekse Oost-Egeïsche eiland Lesbos. De vermeldingen van deze soort op Lésvos door Russell & Hall (2009) en Russell (2012) worden besproken en becommentarieerd. De mannelijke en vrouwelijke genitalia van Lesbos *M. megala* en van de syntopische en synchronische *M. telmessia* (Zeller, 1847) worden afgebeeld, besproken en met elkaar. De mannelijke genitalia van een Turkse *M. megala* worden afgebeeld en vergeleken met een exemplaar uit Lesbos. Tot slot wordt het besluit bereikt dat, hoewel de populaties van Lesbos misschien wel een aparte ondersoort vertegenwoordigen, een dergelijke handeling momenteel onvoldoende is.

Résumé. Une revue des publications sur la présence de *Maniola megala* (Oberthür, 1809) à l'île grecque de Lesbos est présentée. Des données sur la présence de cette espèce à Lesbos dans Russell & Hall (2009) et Russell (2012) sont discutées et commentées. Les génitalia mâles et femelles de *M. megala* de Lesbos, ainsi que ceux de l'espèce syntopique et synchronique *M. telmessia* (Zeller, 1847) sont figurés, décrits et comparés. Les génitalia mâles de *M. megala* turque sont figurés et comparés avec ceux de Lesbos. Enfin on arrive à la conclusion que, bien que les populations de *M. megala* à Lesbos représentent une sous-espèce distincte, une déduction ne peut pas être faite maintenant vue que les données sont insuffisantes pour le moment.

Key words: Nymphalidae – Satyrinae – *Maniola megala* – *Maniola telmessia* – Genitalia – Greece – Turkey – Lésvos.

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Introduction

The first record of *Maniola megala* (Oberthür, 1809) from Greece, Lésvos Island, was made by Olivier (1993: 199, table 12). The species was listed by him as simply having been recorded from this island, without ever giving any further information about it. However, the identification of the recorded specimens was actually based on both male and female genitalia, all of which were studied and drawn by the second author of the present paper and two of which, those of a male and a female, are now being illustrated here for the first time ever (figs. 9–14 & 15–20 respectively). Unfortunately only Olivier and the second author of the present paper knew all about this, and thus the majority of subsequent authors, such as Hesselbarth *et al.* (1995, vol. 2: 823); Tolman & Lewington (1997: 236); Lafranchis (2004: 320, 321); Pamperis (2009: 561); Kudrna *et al.* (2011: 296); Tshikolovets (2011: 341), that refer to *M. megala* from Lésvos Island have done so either by taking Olivier's record for granted, without checking its validity against the butterfly's genitalia, or through direct personal communication with Olivier himself, who may have revealed to them that the butterflies had indeed been identified as such by their genitalia.

Recent information on *M. megala* from Lésvos Island by Russell & Hall (2009), and Russell (2012)

In the first of the two above listed papers the authors provide first hand information on the butterfly's ecology, phenology, wing characters, and the ways by which the latter may be successfully used to differentiate it from the quite similar, syntopic and partly synchronous *Maniola telmessia* (Zeller, 1847). In the same paper colour illustrations of the adult males and females are also being included together with those of *M. telmessia*. Unfortunately these illustrations appear under different magnifications and are devoid of a scale, but, as the authors explain, the real purpose of them was to show wing pattern and not butterfly size. This work also provides information on the butterfly's male genitalia without, however, illustrating them, and the authors discuss the possibility that in the future, and pending a more detailed study, the Lesvian population may prove to be subspecifically distinct from nominotypical *M. megala* (Type Locality: Akbes, Hatay province, Turkey) on account of differences between them in wing size, wing pattern, phenology and biotope requirements.



Figs. 1–8. *Maniola* species from Greece, Lésvos Island.

1, 3, 5, 7. Gulf of Kalloni, 10 m, 6.vi.2013.

1, 3. Male *Maniola megala*. 1. Upper side. 3. Same specimen underside.

2, 4. Male *Maniola telmessia* Mt. Olympus, 500 m, 9.vi.2013. 2. Upper side. 4. Same specimen underside.

5, 7. Female *Maniola megala*. 5. Upper side. 7. Same specimen underside.

6, 8. Female *Maniola telmessia*, Gulf of Kalloni, 10 m, 6.vi.2013. 6. Upper side. 8. Same specimen underside.

Scale bar: 1 cm

In the second of the two above listed papers the author provides supplementary information on the subject by giving adult measurements of Lesvian *M. megala* together with those of Anatolian specimens obtained from two different locations, one in Akbes, Hatay province (near the Type Locality of nominotypical *M. megala*), the other in Muğla province (SW Turkey, located nearest to Lésvos Island).

The paper also includes black and white slides of the male genitalia of a specimen from Lésvos Island and one from Marmaris, Muğla province, Turkey. Unfortunately these slides are not clear enough to permit a detailed and accurate study of the appendages.

The presented wing measurements clearly imply a more or less clinal variation of butterfly size from east to west, the largest specimens occupying the most eastern areas and the smallest ones Lésvos Island, with intermediates inhabiting SW Turkey. The male genitalia of Lesvian and Turkish individuals are described as being similar to each other, the author stating that “No discernible difference was found between those from Muğla and those from Lésvos”. On the basis of the above the author concludes that the Lesvian population of *M. megala* does not merit any taxonomic differentiation from the nominotypical one.

Collecting *M. megala* on Lésvos Island by the first author of the present paper

This was carried out between the 4th and 9th of June 2013. At first several varying localities that ranged from sea level to an altitude of about 920 m were unsuccessfully tested, but eventually, and on the basis of the information derived from Russell & Hall (2009), it was decided to focus solely on lowland habitats located near the Gulf of Kalloni, where good numbers of fresh *M. megala* (males present throughout the collecting trip, females first appearing at the end of it) were indeed recorded flying together with worn male and less worn female *M. telmessia*. Similar observations were reported by another, independent research group which was coincidentally active in the area during the same time period (Mølgaard 2013). All captured *Maniola* specimens, both male and female, were eventually checked and identified by their genitalia.

After rigorously validating all external differentiating criteria proposed in Russell & Hall (2009) and Russell (2012) by actual specimen dissection, in most aspects we found ourselves in agreement with the aforementioned papers. In particular, females are apparently much easier to tell apart than generally assumed, on the basis of underside colour, which is always vivid yellow in *M. megala*, and greyish in *M. telmessia*. However, there is one exception: the only external feature that is not always constant is the degree of scalloping on HW outer margin. Furthermore, we question the information provided in the second of the two papers concerning the

male genitalia of *M. megala*, which we personally found to be variable in what appears to be a geographic cline from east to west, yet still requiring further research into the matter in order to have this condition proved.

The genitalia of *M. megala* and *M. telmessia*

(Material studied: *M. megala*: 21♂ Lésvos; 4♂ Turkey; 9♀ Lésvos; 3♀ Turkey. *M. telmessia*: 24♂ Lésvos; 21♂ various Greek islands; 5♂ Turkey; 20♀ Lésvos; 6♀ various Greek islands; 5♀ Turkey).

Male

M. megala from Lésvos Island (figs. 9–14): overall size of appendages considerably larger than in *M. telmessia*; uncus and brachia almost twice as long, valva usually twice as long, occasionally more so; uncus and tegumen combined, about twice as long, baton of jullien organ about 1.7 times as long. Quite exceptionally and surprisingly, the aedeagus is about equal in size to that of *M. telmessia*, being extremely small in relation to all other genital components of *M. megala*. In addition, valva in lateral aspect is decidedly oblong; distal half of its dorsum weakly, often unevenly curved, and devoid of any prominence. Brachia at base with numerous short spines.

These differ from those of Turkish specimens from Adana province (Figs. 25–30) by their overall smaller size, their slenderer and more elongated valvae and the less prominent curvature of the dorsum of the valval distal half. A single valva of a specimen from Antalya province (SW Turkey) shown in Tauber (1970: 110, 113) appears to fall within the range of variation of the valvae of Lesvian specimens.

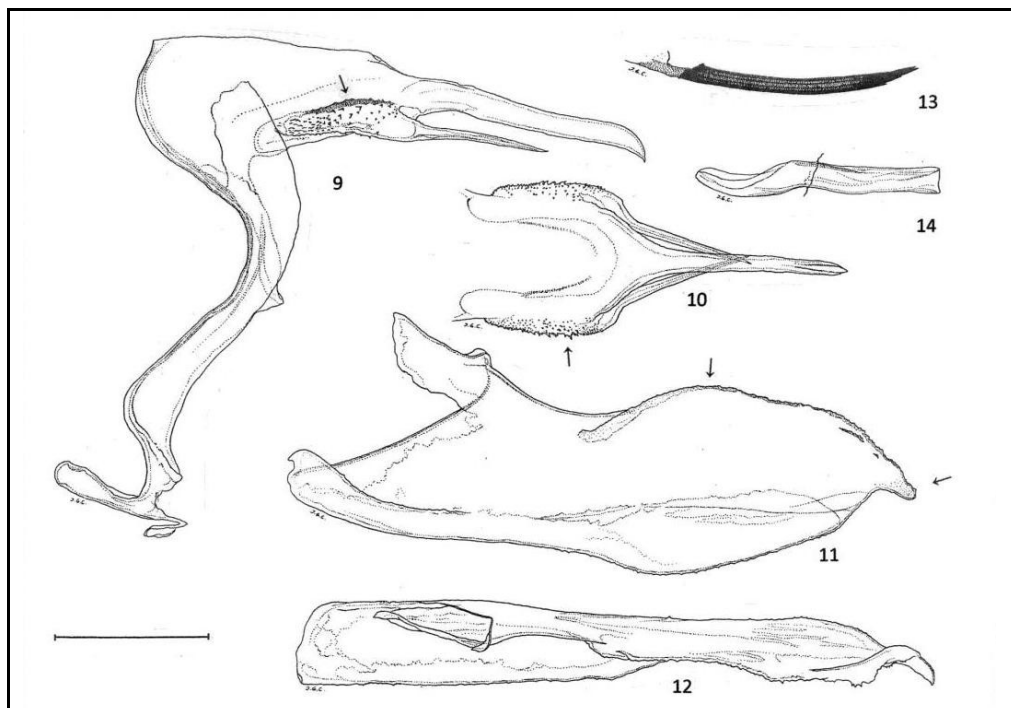
M. telmessia (figs. 15–20): as already stated above, with the exception of the aedeagus, which is about equal in size to that of *M. megala*, all other genital components are much smaller than in the latter. Valva in lateral aspect less oblong, its dorsum with triangular prominence, its dorsal distal half at an angle with the horizontal, and its distal extremity extending horizontally. Brachia at base smooth, completely devoid of spines.

Female

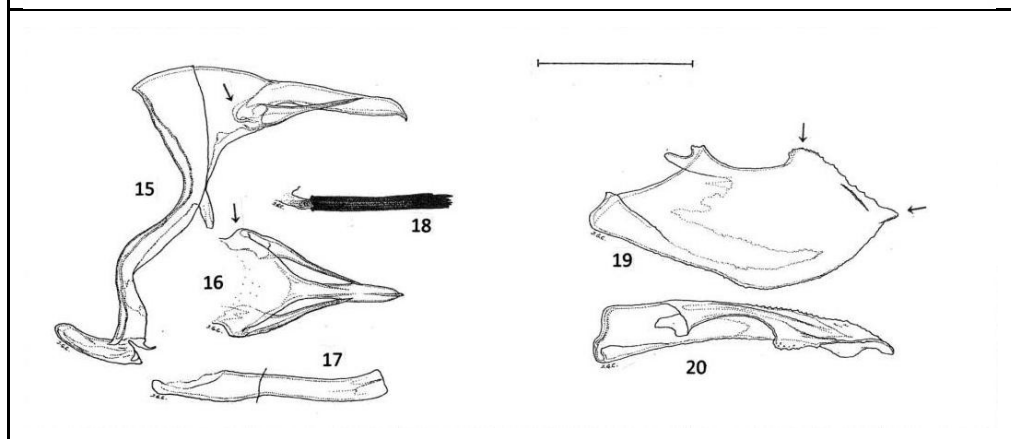
M. megala from Lésvos Island (figs. 21, 22): overall larger than in *M. telmessia*, genital sclerotized ring in lateral aspect long. Ventral pre-vaginal lamella in ventral aspect always long and narrow.

Females from Turkey, whose genitalia have been studied by the second author of the present paper, but not drawn by him, were found to be similar in all aspects to those of Lesvian *M. megala*.

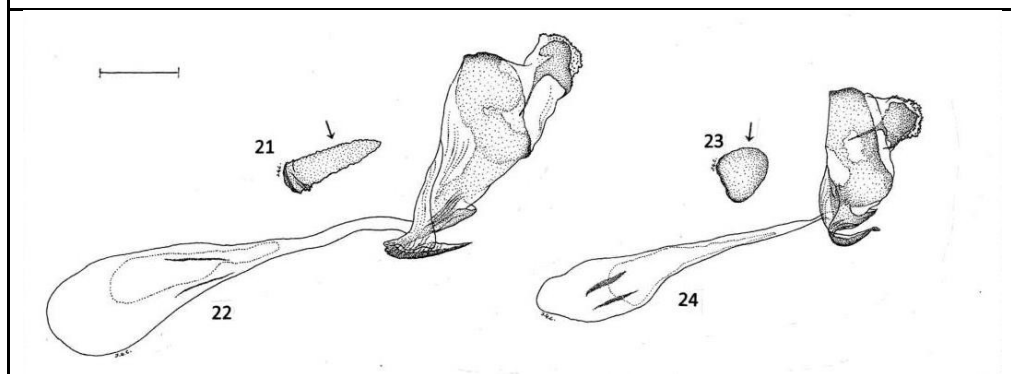
M. telmessia (figs. 23, 24): overall smaller than in *M. megala*, genital sclerotized ring in lateral aspect short. Ventral pre-vaginal lamella in ventral aspect always short and wide, often rounded.



Figs. 9–14. Detached genital components of male *Maniola megalis* from Greece, Lésvos Island, Gulf of Kalloni, 0–50 m, 23.vi.1987. 9. Lateral aspect of left side of armature with valvae, aedeagus and jullien organ removed. 10. Dorsal aspect of distal half of tegumen together with uncus and brachia. 11. Lateral aspect of inner face of right valva. 12. Dorsal aspect of right valva. 13. Left baton of jullien organ. 14. Lateral aspect of left side of aedeagus. – Scale bar: 1 mm.



Figs. 15–20. Detached genital components of male *Maniola telmessia* from Greece, Lésvos Island, Gulf of Kalloni, 0–50 m, 23.vi.1987. 15. Lateral aspect of left side of armature with valvae, aedeagus and jullien organ removed. 16. Dorsal aspect of distal half of tegumen together with uncus and brachia. 17. Lateral aspect of left side of aedeagus. 18. Left baton of jullien organ. 19. Lateral aspect of inner face of right valva. 20. Dorsal aspect of right valva. – Scale bar: 1 mm.



Figs. 21–24. Genitalia of female *Maniola* species from Greece. 21, 22. *Maniola megalis*, Lésvos Island, Gulf of Kalloni, 0–50 m, 16.vi.1988. 23, 24. *Maniola telmessia*, Tilos Island, 1 km SW of Livádhia. 0–50 m, 25.v.1992. 21, 23. Ventral aspect of ventral pre-vaginal lamella. 22, 24. Lateral aspect of left side of entire armature. – Scale bar: 1 mm.

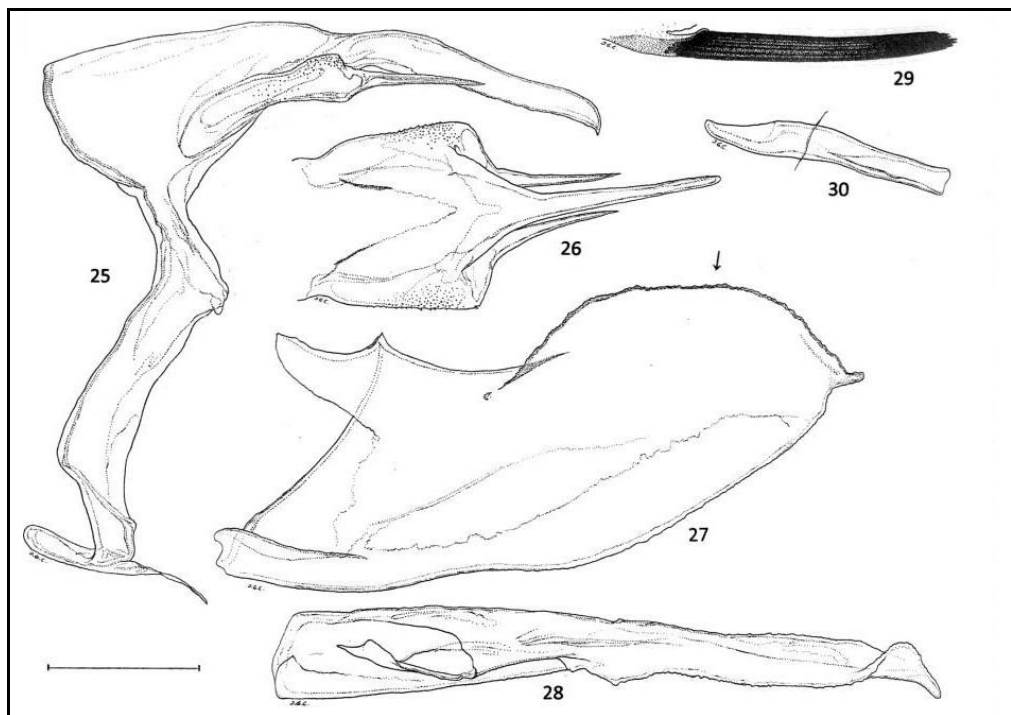
Conclusions

On the basis of Russell & Hall (2009), and Russell (2012), as well as on the basis of our own personal experiences it may be stated that *M. megalis* on Lésvos Island is an extremely localized, but abundant where found species that inhabits exclusively well watered, lowland areas (maximum altitude: about 50 m) located near the gulf of Kalloni, and that with the information presently at hand the butterfly cannot be considered as

irrevocably representing a separate subspecies in its own right.

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Figs. 25–30. Detached genital components of male *Maniola megalis* from Turkey, Adana province, 20 km NE of Adana town, 50 m, 26.v.1986.

25. Lateral aspect of left side of armature with valvae, aedeagus and jullien organ removed.

26. Dorsal aspect of distal half of tegumen together with uncus and brachia.

27. Lateral aspect of inner face of right valva.

28. Dorsal aspect of right valva.

29. Left baton of jullien organ.

30. Lateral aspect of left side of aedeagus. — Scale bar: 1 mm.

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