

Rhopalocera of Turkey 12. On the geographical variation of *Melitaea collina* Lederer, 1861 with description of *M. collina lokmani* n. ssp. from South East Turkey (Lepidoptera: Nymphalidae)

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Samenvatting. Turkse Rhopalocera 12. Over de geografische variatie van *Melitaea collina* Lederer, 1861 met beschrijving van *M. collina lokmani* n. ssp. uit Zuidoost-Turkije (Lepidoptera : Nymphalidae)

De variatie van *Melitaea collina* Lederer, 1861 wordt besproken. Van het zuidoostelijk deel van Turkije wordt een nieuwe ondersoort beschreven en afgebeeld. Deze nieuwe ondersoort wordt vergeleken met zowel de nominaatvorm als met nauwverwante soorten *M. vedica* Nekrutenko, 1974, *M. consulis* Wiltshire, 1941, en *M. turkmanica* Higgins, 1940. Tevens worden de mannelijke genitaliën van de vier soorten afgebeeld.

Résumé. Rhopalocères de Turquie 12. De la variation géographique de *Melitaea collina* Lederer, 1861 avec description de *M. collina lokmani* n. ssp. de la Turquie du sud-est (Lepidoptera : Nymphalidae)

La variation de *Melitaea collina* Lederer, 1861 est discutée. Une nouvelle sous-espèce, provenant de la Turquie du sud-est, est décrite et illustrée. Cette nouvelle sous-espèce est comparée à la forme nominative ainsi qu'aux espèces prochement apparentées *M. vedica* Nekrutenko, 1974, *M. consulis* Wiltshire, 1941 et *M. turkmanica* Higgins, 1940. Les genitalia mâles des quatre espèces sont également illustrés.

Key words : Taxonomy - faunistics - Turkey - *Melitaea collina* - *M. vedica* - *M. consulis* - *M. turkmanica*.

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Introduction

Very little has been published about *Melitaea collina* Lederer, 1861 described from "Antiochia" (Antakya), at present in the province of Hatay, Turkey. Until recently it was assumed that the distribution of *M. collina* was restricted to Anatolia, Syria, Lebanon and Israel. In 1984/85 we discovered a population in the province of Hakkari, Southeast Turkey, which appeared to look remarkably different from the other known material. In addition we found a few specimens in the British Museum, which were collected by the late L.G. Higgins in North Iraq in 1957 and which closely resemble the material that we collected in Hakkari.

Geographical variation of *M. collina* (figs 1-15 of plate 1 and 2)

The original description by Lederer is very short, but nevertheless quite accurate. Lederer's description compares *M. collina* in the upperside to *M. phoebe* ([Denis & Schiffermüller], 1775) and in the underside to *M. trivia*

([Denis & Schiffermüller], 1775). Actually we need to complete that description only as follows: upperside - a remarkable resemblance of both sexes to *M. phoebe* male, but smaller, more reddish colour and more regular marking of submarginal band in forewing; underside - remarkable resemblance to *M. trivia* in both sexes, but the orange colour more reddish.

Of course this comparison is applicable on the average while local variation of *M. collina* is quite large as in all *Melitaea* species. The populations of the Turkish provinces along the Mediterranean and southward to Israel have on the average slightly more pronounced markings and a more reddish colour than the populations of central Anatolia. However the material from Southeast Turkey and from Northeast Iraq displays clearly a reduced marking and a sallower yellow colour on the underside. Additionally the male genital displays a remarkable difference in the shape of the posterior process (figs 1 and 2 of plate 3). The posterior process is more pointed in specimens from Southeast Turkey, and at the rearside it forms a straighter line with the contour of the clasp, interrupted by a small spine near the base.

The differences in internal and external morphology and the geographical isolation of the Hakkari population from other populations of *M. collina* (no specimens from the region between Elazığ and Hakkari are known to us) give reason to appoint subspecific rank to the population of Southeast Turkey and Northeast Iraq.

Related species (figs 16-18 of plate 1 and 2)

We have compared the material of Southeast Turkey with three other *Melitaea* species which are closely related to *M. collina*:

- M. consulis* Wiltshire, 1941 from S.W. Iran
- M. vedica* Nekrutenko, 1975 from the Caucasus
- M. turkmanica* Higgins, 1940 from N.E. Iran

In the external morphology there is a remarkable resemblance between these three species and *M. collina*, and *M. consulis* looks on the underside quite similar to the population of SE Turkey. But still there are external differences which, together with the typical differences in the genital (plate 3), give reason to support the present status of all four species and to appoint the population of SE Turkey and NE Iraq as subspecies of *M. collina*.

***Melitaea collina lokmani* n. ssp.**

Type material: TURKEY, specimens collected by H. & Th. v. Oorschot & H. v. d. Brink: HOLOTYPE ♂ : "Turkiye/Hakkari/H. & Th. v. Oorschot & H. v. d. Brink/8 km E. of Uludere/1700-1900 m/st. 181/10.VI.1984", PARATYPES: 7 ♂, labelling as holotype; 3 ♀, st. 179, Turkiye, Hakkari, Env. Uludere 1200m, 9/10.VI.1984; 1 ♂, st. 246, Hakkari, 8 km E. of Uludere, 1700-1900 m, 11/13.VI.1985; collected by E. Görgner: 1 ♀, vic. Hakkari 1300 m, 10/14.VI.1981; collected by D. van der Poorten & W. De Prins: 1 ♂, st. 1811, Hakkari, Tali Vall., 13 km SW

Hakkari, 1400-1700 m, 2-8.VII.1992; collected by D. van der Poorten & J.-P. Borie: 1 ♀ and 10 ♂, st. 1917, Hakkari, Tali Vall., 13 km SW Hakkari, 1500 m, 20.VI.1993; collected by H.-J. Falkenhahn (coll. U. Eitschberger): 1 ♂, Altın Dağları, 6 km O Yonkali 1350 m, 14.V.1985; IRAQ, collected by L. G. Higgins: 2 ♀ and 3 ♂, Sersang, 3500 ft, Kurdistan, May 27-June 1 1957, 1 ♀ and 2 ♂, Shaqlawa, 2500 ft, Kurdistan, 15/24 May 1957.

The holotype and most paratypes are deposited in the collections of the Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam (ITZA), the Rijksmuseum van Natuurlijke Historie, Leiden, the Vlaamse Lepidopterologische Collectie Antwerpen (VLCA), of Dr. U. Eitschberger (Marktleuthen, BRD), Mr. E. Görgner (Dessau) and Dr. J.-P. Borie (Compiègne). The material collected by Higgins in Iraq is deposited in the collection of the British Museum (Natural History), London (BMNH).

Legend to plates 1 and 2

Figs 1-9: *M. collina lokmani* n. ssp.:

1. Holotype ♂ : Turkey, Hakkari, 8 km E Uludere, 1700-1900 m, st. 181, 10.VI.1984, leg. H. & Th. v. Oorschot & H. v. d. Brink, coll. ITZA.
2. Paratype ♂ : as holotype.
3. Paratype ♀ : Turkey, Hakkari, env. Uludere, 1200 m, st. 179, 9/10.VI.1984, leg. H. & Th. v. Oorschot & H. v. d. Brink, coll. ITZA.
4. Paratype ♂ : as holotype.
5. Paratype ♂ : Turkey, Tali Vall., 13 km SW Hakkari, 1500 m, 20.VI.1993, st. 1917, leg. D. v.d. Poorten & J.P. Borie.
6. Paratype ♀ : as 5.
7. Paratype ♂ : Iraq, Kurdistan, Shaqlawa, 2500 ft, 15-24 May 1957, leg. L.G. Higgins, coll. BMNH.
8. Paratype ♂ : Iraq, Kurdistan, Sersang, 3500 ft, 27 May 1957, leg. L.G. Higgins, coll. BMNH.
9. Paratype ♀ : as 7.

Figs 10-15: *M. collina collina* Lederer, 1861:

10. ♂ : Turkey, Hatay, Yayla Dağı, 10 km S Şenköy, 9/13.V.1982, st. 20 leg. Fam. v. Oorschot & G. Hesselbarth, coll. ITZA.
11. ♂ : Israel, Sasa Ht. Galilea, 1000 m, 18.IV.1980, leg. J.C. Weiss, coll. ITZA.
12. ♀ : Turkey, İçel, 40 km E Gökbelen, 10-15 km W. Silifke, 500 m, 24-26.IV.1991, st. 665, leg. H. & Th. v. Oorschot, coll. ITZA.
13. ♂ : Turkey, Tunceli, 38 km NE Tunceli, 1200 m, 29-30.V.1987, st. 375, leg. A. Riemis & B. v. Oorschot, coll. ITZA.
14. ♂ : Turkey, Tunceli, 10 km W Tunceli, Rd Tunceli-Yesilyazi, 1000 m, 29-30.V.1987, st. 374, leg. A. Riemis & B. v. Oorschot, coll. ITZA.
15. ♀ : Turkey, Tunceli, 5 km S Tanyeri, 1200-1300 m, 2-6.VI.1987, st. 379, leg. A. Riemis & B. v. Oorschot, coll. ITZA.

Fig. 16: *M. consulis* Wiltshire, 1941, ♂ : Iran, Ostan Boyr Ahmadi, Tange Sork, 2300 m, 6-9.V.1977, leg. W.L. Blom, coll. ITZA.

Fig. 17: *M. vedica* Nekrutenko, 1975, ♂ (paratype): Armenia Mer Ved. Pr, Chosrov, 1300-1500 m, 15-30.V.1974, leg. Nekrutenko.

Fig. 18: *M. turkmanica* Higgins, 1940, ♂ : Iran, Mazanderan, Golestan Park Dasht, 1000-1200 m, 9.V.1980, leg. Eckweiler, coll. ITZA.

Plate 2: as plate 1, undersides.

Plate 1

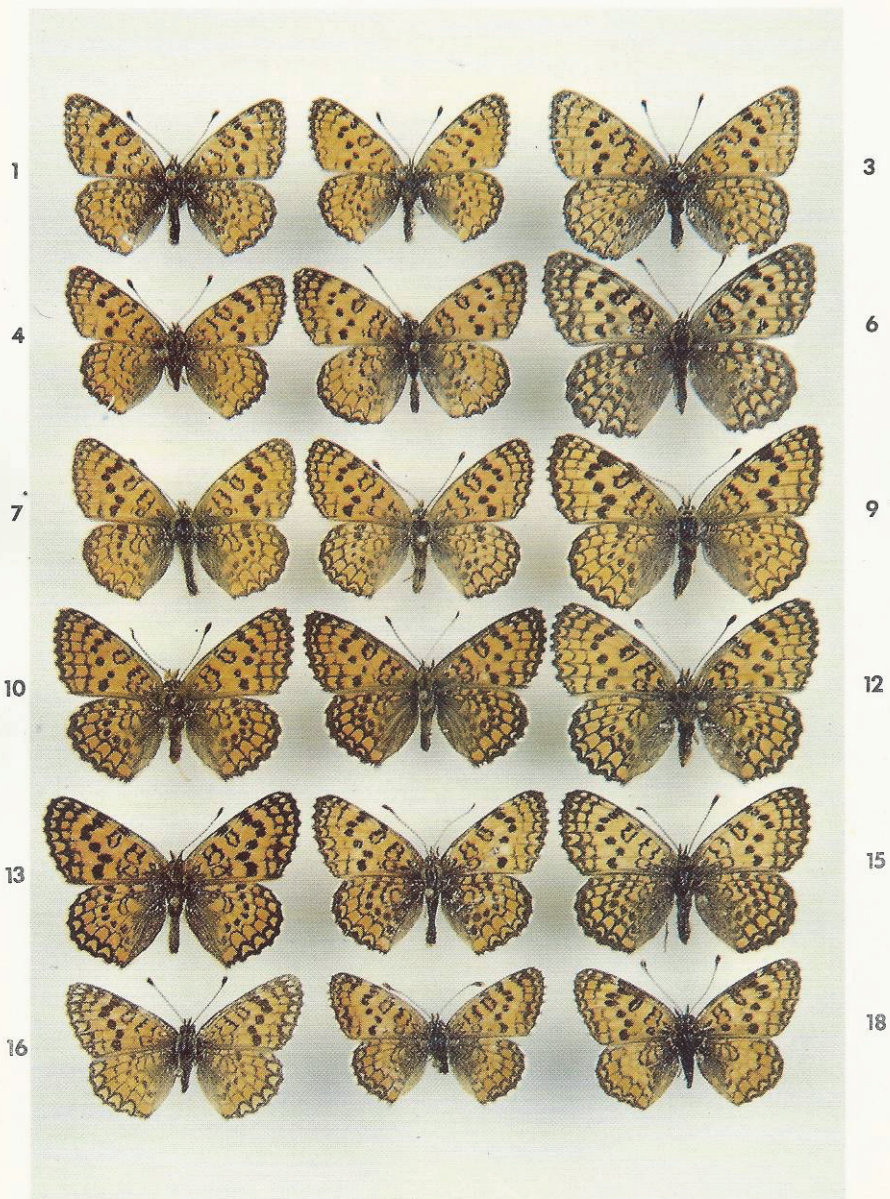


Plate 2



Plate 3

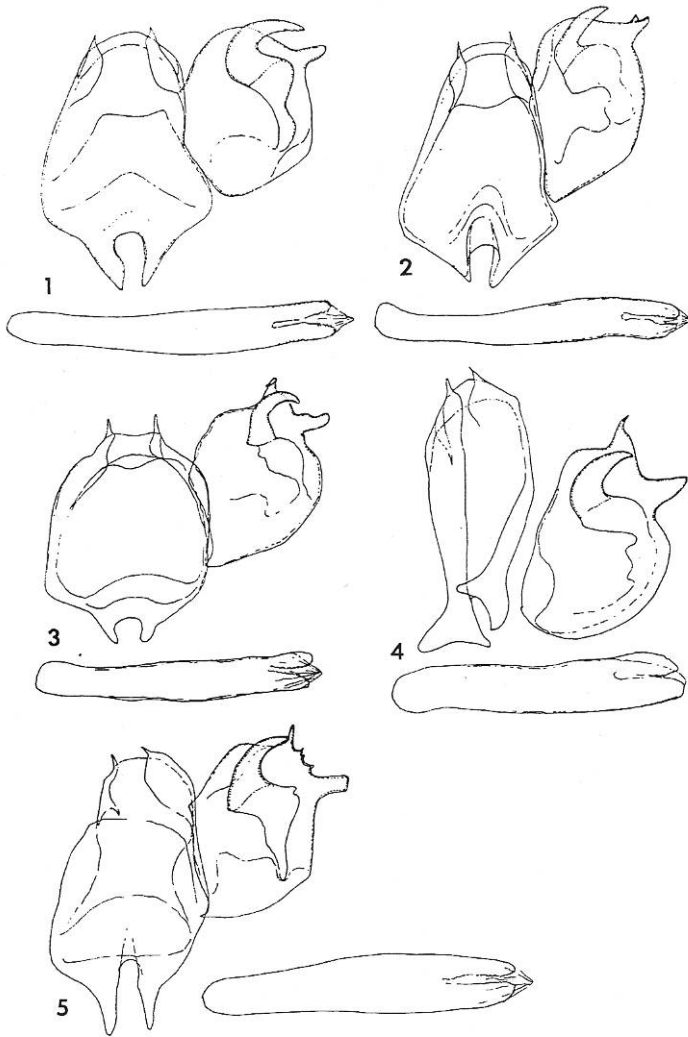


Plate 3: male genitalia

Fig. 1. *M. collina collina* Lederer, 1861, Turkey, Yayla Dağı, road Harbiye-Şenköy, 500 m, 3/13.V.1982, st. 11, leg. Fam. v. Oorschot & G. Hesselbarth.

Fig. 2. *M. collina lokmani* n. ssp., as holotype.

Fig. 3. *M. consulis* Wiltshire, 1941, as Plate 1 fig. 16.

Fig. 4. *M. vedica* Nekrutenko, 1975, as Plate 1 fig. 17.

Fig. 5. *M. turkmanica* Higgins, 1940, as Plate 1 fig. 18.

Description

Male: Wingspan (n=24) 27-36 (31.1) mm. Upper side: brown as in nominotypical subspecies, but colour slightly less reddish, finer marking and faint submarginal about intervenosa 2 to 5 in 83% of the type specimens; compared to 65% of the nominotypical population in the province of Tunceli and 40% in the province of Hatay. Underside: as in nominotypical subspecies, but colour of hindwing and of apical area of forewing paler yellow, yellow apical area of forewing extends into submarginal band, marking finer, fainter as well as partly vanished. The specimens with the most pronounced marking has still less marking than in the nominotypical specimen with the faintest marking.

Female: Wingspan (n=8) 34-39 (36.1) mm. Similar differences with the females of the nominotypical subspecies as in male, except for a few specimens which have marking on the upperside similarly pronounced as in the nominotypical subspecies.

It is interesting to note that the direction of the variation in the hindwing underside of *M. collina lokmani* is almost similar to that of *M. consulis*, while that of *M. collina collina* is quite similar to that of *M. turkmanica*.

Biotope

We found *M. collina lokmani* in hardly disturbed biotopes with moderate to rich vegetation, with grass between brushwood together with *Satyrium marcidum marcidum* (Riley, 1921) and *Melitaea perseae* (Kollar, 1849) and in biotopes with a subalpine character together with *Melitaea cinxia* (Linnaeus, 1758). The food plants are probably *Plantago* spec. and/or *Centaureae* spec.

Derivation of the name

At the first occasion at which we found specimens of the new subspecies we stayed overnight in the small hotel Murat in Uludere. This hotel was run neatly under poor circumstances by a 13 year old boy, named Lokman. His name was chosen to honour his kindness and hospitality, and that of all Turkish people who have made our visits to their country to a great succes.

Distribution

The distribution of *M. collina lokmani* in Turkey is restricted mainly to the province of Hakkari and the eastern part of the province of Şırnak, which province was founded recently from parts of the provinces Hakkari, Siirt and Mardin. From material of the BMNH, London, we found that the distribution of *lokmani* extends at least to Northeast Iraq. Although we deem it well possible that the subspecies extends to the adjacent Turkish province of Siirt and to the Zagros mountains in Iran, thus far no records are known from these areas.

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