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## A new subspecies of *Hyponephele* MUSCHAMP, 1915 from western Turkey

(Lepidoptera, Satyridae)

by

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**Summary:** The description of a new subspecies of *Hyponephele kocaki* ECKWEILER, 1978 based on habitual and morphological aspects is presented and the distribution of *H. kocaki* in Anatolia is discussed.

The butterfly in question was first collected by DE BROS in 1964 in the Bey Dağları (Antalya) region of south-western Turkey, but it was treated as a form of *Hyponephele lycaon* ROTTEMBURG, 1775.

In 1978 ECKWEILER described *H. kocaki* from specimens collected in 1977 and 1978 on two locations in south-eastern Turkey, namely Güzeldere Geçidi (Van) and Berclem Yaylası (Hakkari). Since then, *H. kocaki* was collected at several other localities in the south-eastern Turkish provinces of Van and Hakkari. The distribution range of *H. kocaki* known to date is shown on map 1 adopted from HESSELBARTH et al. (1995). In 1986 ECKWEILER rediscovered the Bey Dağları population, and determined it as *H. kocaki*.

We have examined a large series of specimens collected by the second author on two sites in the Bey Dağları in July 1999 and compared these to a series collected in 1998 and 1999 on two localities in the Van province (Güzeldere Geçidi and upper Narlıca Valley near Karabet Geçidi).

We found that the Bey Dağları specimens (colour plate VIII, figs. 10–12 and colour plate IX, figs. 1–3, 10–15) show very consistent and constant differences of habitus and morphology compared to the Güzeldere Geçidi specimens, which we regard as representative of the nominate *H. kocaki* (colour plate VIII, figs. 4–9 and colour plate IX, figs. 4–9).

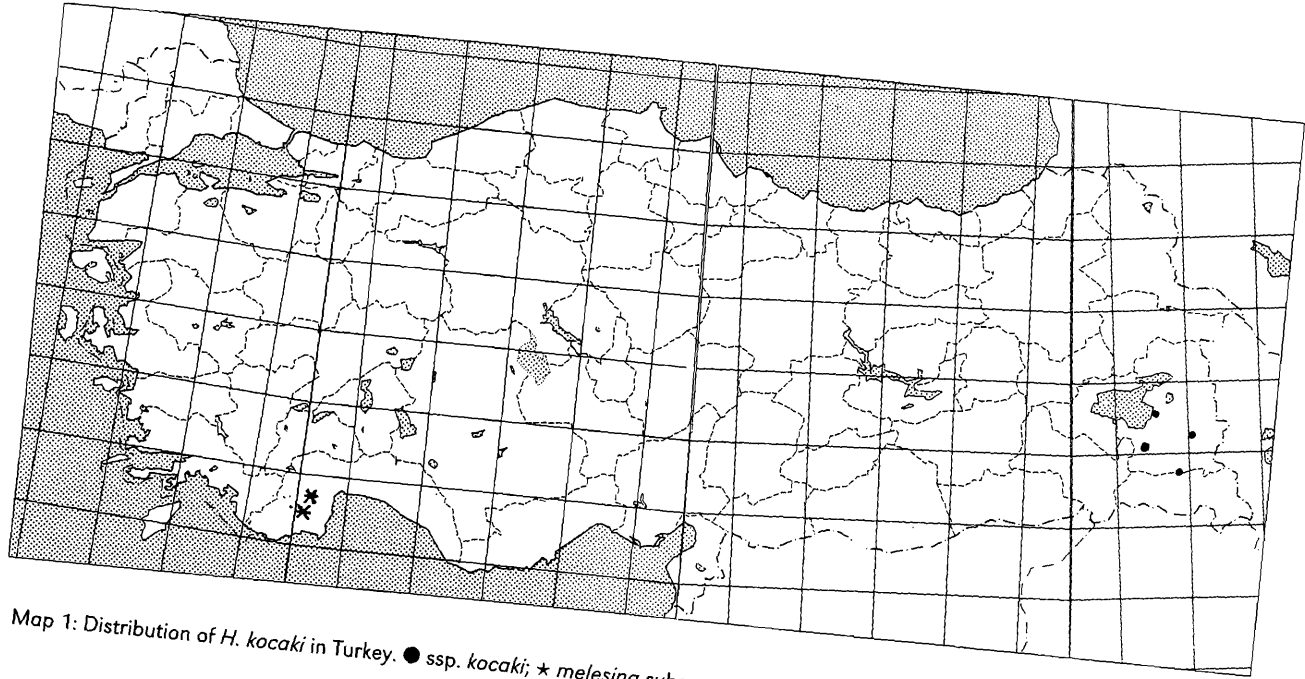
From the evidence presented underneath we conclude, that the Bey Dağları population represents a separate taxon of the genus *Hyponephele*, rather than an ecological form of *H. kocaki*. By examining the male genitalia of nominate *H. kocaki* and the Bey Dağları specimens we found no relevant differences indicative of a specific status of this taxon. Therefore, we find it appropriate to describe this little studied population as:

*Hyponephele kocaki melesina* subsp. nov.

### Material

Holotype ♂: SW Turkey, Antalya, Bey Dağları 1700–2200 m, 10.–13.VII.1999, leg. P. SKALA, in coll. Nat. Mus. Prague (colour plate VIII, fig. 1).

Paratypes: 40 ♂♂, 10 ♀♀, same data as holotype, leg. et coll. P. SKALA, and in coll. D. WEISS and Nat. Mus. Prague.



Map 1: Distribution of *H. kocaki* in Turkey. ● *ssp. kocaki*; ★ *melesina* subspec. nov.

## Description

Male: forewing length 16–18 mm, wingspan 28–32 mm.

Upperside (colour plate VIII, figs. 1A, 3A, 10–12): The ground colour is brown grey and lighter than in nominate *H. kocaki*. The golden glare, especially on the forewings, is more pronounced, than in nominate *H. kocaki*. Also, specimens without subapical ocelli occur rarely in the series. The shape of the androconial band is quite variable and generally the band is less contrasting than in the nominate form. The orange yellow frames of the apical and subapical ocelli fuse into one continuous field with only slight penetration of darker veins. This field spreads all the way from apex to vein Cu<sub>2</sub>.

Only seldom specimens (approx. 5% of the population) have two more or less separated orange yellow frames resembling the nominate form. This form we name as f. *eckweileri* f. nov. (colour plate VIII, fig. 3) to honour Dr. W. ECKWEILERS rediscovery of the Bey Daglari population in 1986.

Underside (colour plate VIII, figs. 1B, 3B; colour plate IX, figs. 13–15): The overall ground colour of *melesina* subsp. nov. is distinctly paler than in the nominate form. Also in *melesina* subsp. nov. the ground colour of the hindwings is ochre grey, while the nominate form it is purely grey without ochre shade. The pattern of *melesina* subsp. nov. is lighter and more suffused than in the nominate form.

Individuals of form *eckweileri* do not differ from typical specimens of *melesina* subsp. nov.

Female: forewing length 18–19 mm, wingspan 33–36 mm.

Upperside (colour plate VIII, fig. 2A; colour plate IX, figs. 1–3): The sexual dichroism of *melesina* subsp. nov. is more pronounced than that of the nominate form. The ground colour is markedly paler than in the nominate form. The ochre yellow field of the forewing spreads over the entire wing surface except for the costal and marginal area. The discal field is slightly darker. The subcostal shadow is barely noticeable. In the nominate form this shadow is quite well developed. Also, in the nominate form there are very seldom specimens (1–5% of the population) which habitually resemble *melesina* subsp. nov., especially on the upperside (see colour plate VIII, fig. 9 and colour plate IX, fig. 9).

Underside (colour plate VIII, fig. 2B; colour plate IX, figs. 13–15): The ground colour of *melesina* subsp. nov. is lighter than in the nominate form and the pattern is very suffused to nebulous, while the nominate form shows distinct a pattern.

## Discussion

The above described differences of habitus and morphology could hardly be explained by purely ecological aspects.

Nominate *H. kocaki* was successfully reared by HESSELBARTH and SIEPE in 1988 ab ovo from the Güzeldere Geçidi population in laboratory conditions on *Poa annua*, giving adult specimens in November of the same year without hibernation. These specimens, raised in conditions very different from their wildlife habitat, appeared to have a normal wing pattern and colouration of the nominate *H. kocaki*.

The current mutual separation of both populations by an uncrossable distance of over 1000 kilometers is a much more likely explanation of the above differences.

The biotopes inhabited by nominate *H. kocaki* in eastern Anatolia and by *melesina* subsp. nov. in western Anatolia show no apparent differences by the adults' emergence time (July). All collecting sites (Bey Dağları 1700–1800 m, Bey Dağları 2100–2400 m, Narlıca Valley 2000–2100 m, and Güzeldere Geçidi 2600–2800 m) are very arid places with sparse vegetation, covered with fine light brownish to grey stony scree and a short grass, usually completely dry by mid July.

Both nominate *H. kocaki* and *melesina* subsp. nov. appear to be very local and specimens that do not depart from the preferred biotope.

The only true accompanying species typically found on the same habitat with *melesina* subsp. nov. at Bey Dağları are *Agrodiaetus ernesti* ECKWEILER, 1978 and *Satyrus acaciae* FABRICIUS, 1787. In Van, the nominate race is found together with *Pseudochazara berae rhena* H.-S., 1851 on Güzeldere Geçidi, and with *Agrodiaetus kurdistanicus* FORSTER, 1961 on the arid slopes of Narlıca Valley. In all cases many other species, typical for the region, fly nearby on moister biotopes, e. g., in Bey Dağları *Elphinstonia penia* FREYER, 1851, and *Pseudochazara lydia aurora* ECKWEILER & ROSE, 1989, in Güzeldere Geçidi *Melanargia hylata* MENETRIES, 1832, *Satyrus parthicus* LEDERER, 1869, and *iranicus* SCHWINGENSCHUSS, 1939, and in Narlıca Valley *M. hylata* and *Pseudochazara mamurra shahrudensis* STAUDINGER, 1881.

*H. lycaon* is always present on more grassy places closely nearby, but never on the same biotope.

It is worthwhile to notice, that the arid eastern slopes of the Bey Dağları, exposed to the dry Elmali Valley represent a fairly enclosed arid montane steppe habitat, closely resembling the arid high mountain steppes common in south-east Anatolia.

This enclave is surrounded by the litoral region of south-western Turkey, for which higher rainfall and relatively green vegetation throughout summer are quite typical. This is a likely explanation of an even more local occurrence of the west anatolian *melesina* subsp. nov., compared to the nominate east anatolian form.

Special thanks to Mr. MARTIN WEISS for diagnosis of the copulatory organs and to Mr. DALIBOR HÁK for active participation in the 1999 collecting expedition.

## References

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- ECKWEILER, W. (1978): Eine neue Art der Gattung *Hyponephele* MUSCHAMP aus der Südosttürkei. – *Atalanta* 9 (4a): 375–378.

Explanation of colour plate I (p. 397):

Fig. 1A: *Hyponephele kocaki melesina* subsp. nov., holotype ♂, Turkey, Antalya, Bey Dağları 1700–2200 m, 10.–13.VII.1999, leg. P. SKALA.

Fig. 1B: *Hyponephele kocaki melesina* subsp. nov., holotype ♂, underside.

Fig. 2A: *Hyponephele kocaki melesina* subsp. nov., paratype ♀, same data as holotype.

Fig. 2B: *Hyponephele kocaki melesina* subspec. nov., paratype ♀, same data as holotype, underside.

Fig. 3A: *Hyponephele kocaki melesina* subspec. nov., form *eckweileri* f. nov., same data as holotype.

Fig. 3B: *Hyponephele kocaki melesina* subspec. nov., form *eckweileri* f. nov., same data as holotype, underside.

Figs. 4–6: *Hyponephele kocaki kocaki*, ♂♂, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA.

Figs. 7–9: *Hyponephele kocaki kocaki*, ♀♀, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA.

Figs. 10–12: *Hyponephele kocaki melesina* subspec. nov., ♂♂, same data as holotype.

1A	2A	3A
1B	2B	3B
4	5	6
7	8	9
10	11	12

Explanation of colour plate II (p. 399):

Figs. 1–3: *Hyponephele kocaki melesina* subspec. nov., ♀♀, same data as holotype.

Figs. 4–6: *Hyponephele kocaki kocaki*, ♂♂, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA, underside.

Figs. 7–9: *Hyponephele kocaki kocaki*, ♀♀, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA, underside.

Fig. 10–12: *Hyponephele kocaki melesina* subspec. nov., ♂♂, same data as holotype, underside.

Figs. 13–15: *Hyponephele kocaki melesina* subspec. nov., ♀♀, same data as holotype, underside.

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

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Colour plate VIII

WEISS, D. & P. SKALA: A new subspecies of *Hyponephele* MUSCHAMP, 1915 from western Turkey (Lepidoptera, Satyridae). – *Atalanta* **31** (1/2): 129–133.

Fig. 1A: *Hyponephele kocaki melesina* subspec. nov., holotype ♂, Turkey, Antalya, Bey Dağları 1700–2200 m, 10.–13.VII.1999, leg. P. SKALA.

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Fig. 2A: *Hyponephele kocaki melesina* subspec. nov., paratype ♀, same data as holotype.

Fig. 2B: *Hyponephele kocaki melesina* subspec. nov., paratype ♀, same data as holotype, underside.

Fig. 3A: *Hyponephele kocaki melesina* subspec. nov., form *eckweileri* f. nov., same data as holotype.

Fig. 3B: *Hyponephele kocaki melesina* subspec. nov., form *eckweileri* f. nov., same data as holotype, underside.

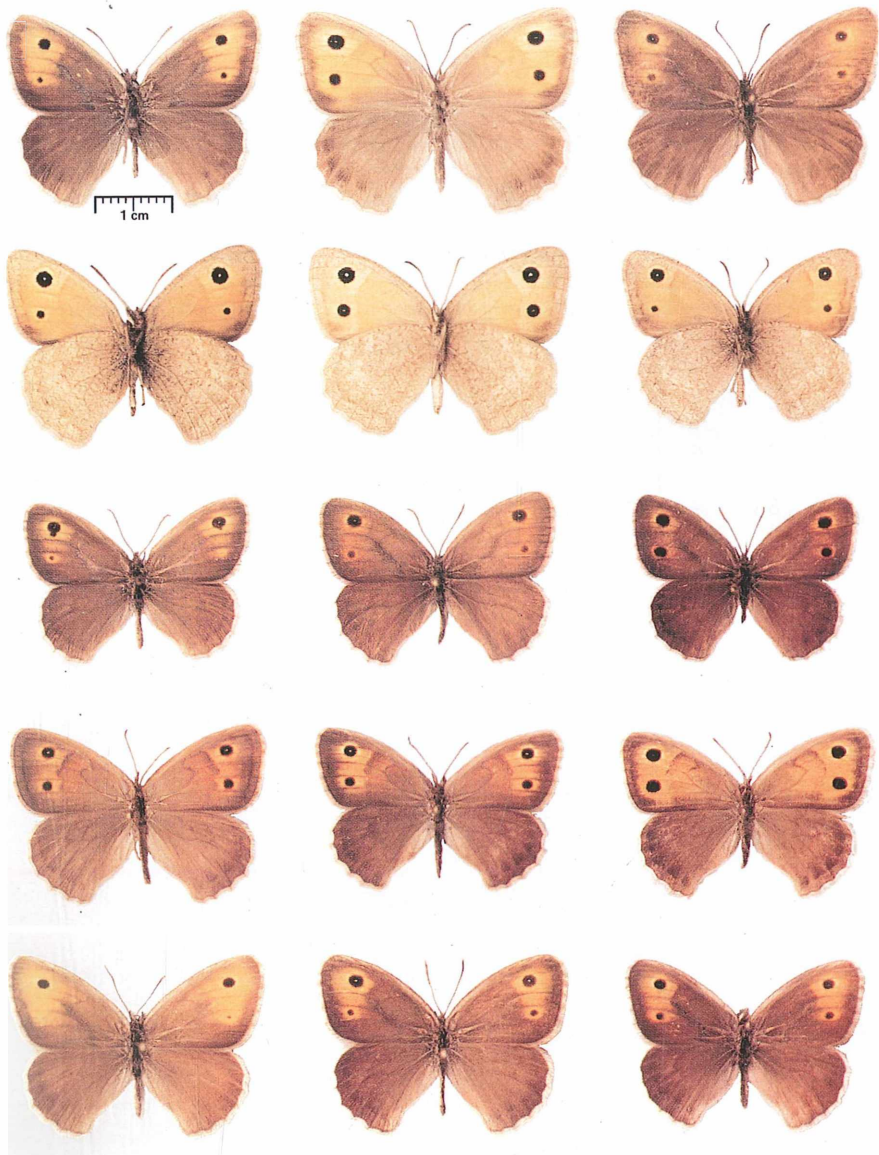
Figs. 4–6: *Hyponephele kocaki kocaki*, ♂♂, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA.

Figs. 7–9: *Hyponephele kocaki kocaki*, ♀♀, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA.

Figs. 10–12: *Hyponephele kocaki melesina* subspec. nov., ♂♂, same data as holotype.

1A	2A	3A
1B	2B	3B
4	5	6
7	8	9
10	11	12

### Colour plate VIII



## Colour plate IX

WEISS, D. & P. SKALA: A new subspecies of *Hyponephele* MUSCHAMP, 1915 from western Turkey (Lepidoptera, Satyridae). – *Atalanta* **31** (1/2): 129–133.

Figs. 1–3: *Hyponephele kocaki melesina* subsp. nov., ♀♀, same data as holotype.

Figs. 4–6: *Hyponephele kocaki kocaki*, ♂♂, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA, underside.

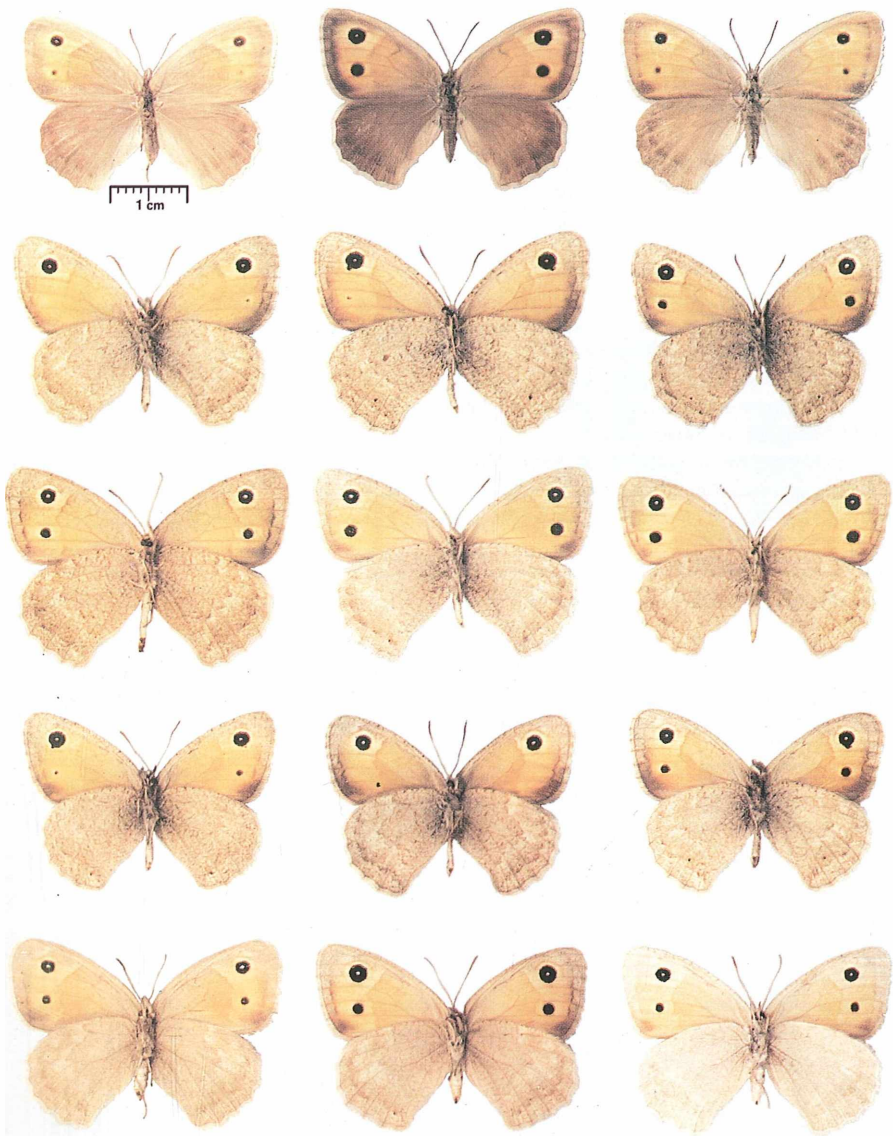
Figs. 7–9: *Hyponephele kocaki kocaki*, ♀♀, Turkey, Van, Güzeldere Geçidi 2700 m, 28.VII.1999, leg. P. SKALA, underside.

Fig. 10–12: *Hyponephele kocaki melesina* subsp. nov., ♂♂, same data as holotype, underside.

Figs. 13–15: *Hyponephele kocaki melesina* subsp. nov., ♀♀, same data as holotype, underside.

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

Colour plate IX



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