Rhopalocera of Turkey 17. *Satyrium ilicis zabni* raised to species level (Lepidoptera: Lycaenidae)

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Abstract. *Satyrium ilicis zabni* van Oorschot & van den Brink, 1991 is raised to species level based on wide distributional overlap and actual sympatry with *S. ilicis ilicis* (Esper, [1779]), and constant differences with the latter taxon in male genitalia, and colour and markings on the underside of the wings.

Samenvatting. Rhopalocera uit Turkije 17. *Satyrium ilicis zabni* verhoogd naar soortniveau (Lepidoptera: Lycaenidae)

Satyrium ilicis zabni van Oorschot & van den Brink, 1991 wordt verhoogd naar soortniveau op grond van grote overlapping in verspreidingsgebieden en werkelijke sympatrie met *S. ilicis ilicis* (Esper, [1779]) en constante verschillen met het laatste taxon in de mannelijke genitaliën en in de kleur en tekening op de onderzijde van de vleugels.

Résumé. Rhopalocères de Turquie 17. *Satyrium ilicis zabni* élevé au statut d'espèce (Lepidoptera: Lycaenidae)

Satyrium ilicis zabni van Oorschot & van den Brink, 1991 est élévé jusqu'au statut d'espèce basé sur une superposition de la distribution et de la sympatrie actuelle avec *S. ilicis ilicis* (Esper, [1779]), des différences constantes dans les genitalia mâle des deux taxons et dans la couleur et le dessin sur le dessous des ailes.

Key words: taxonomy – Lycaenidae – *Satyrium* – *Satyrium ilicis* – *Satyrium zabni* – Turkey – Iran – Iraq.

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Introduction

Satyrium ilicis (Esper, [1779]) is a widespread butterfly in Turkey (Hesselbarth *et al*. 1995, map 118). In the greater part of the country there occurs *S. ilicis ilicis*, but populations in the south-eastern part had been separated as *S. ilicis zabni* by van Oorschot & van den Brink (1991). The latter differs from the nominotypical subspecies in colour and markings on the underside of the wings. At that time, evidence of a more than subspecific status for *zabni* was inconclusive. New material and data however prompted us to reconsider this conclusion.

Genitalia

Genitalia of both sexes and of both taxa (13 males and 6 females of *ilicis*, 13 males and 8 females of *zabni*) were checked. No constant differences were found in the female genitalia (fig. 3). The male genitalia, on the other hand, showed the following constant (be it slight) differences (figs. 1–2):

– *ilicis*: proximal end of dorsum of valva evenly curved, ventro-distal process of valva short and dorsal cornutus of aedeagus long.

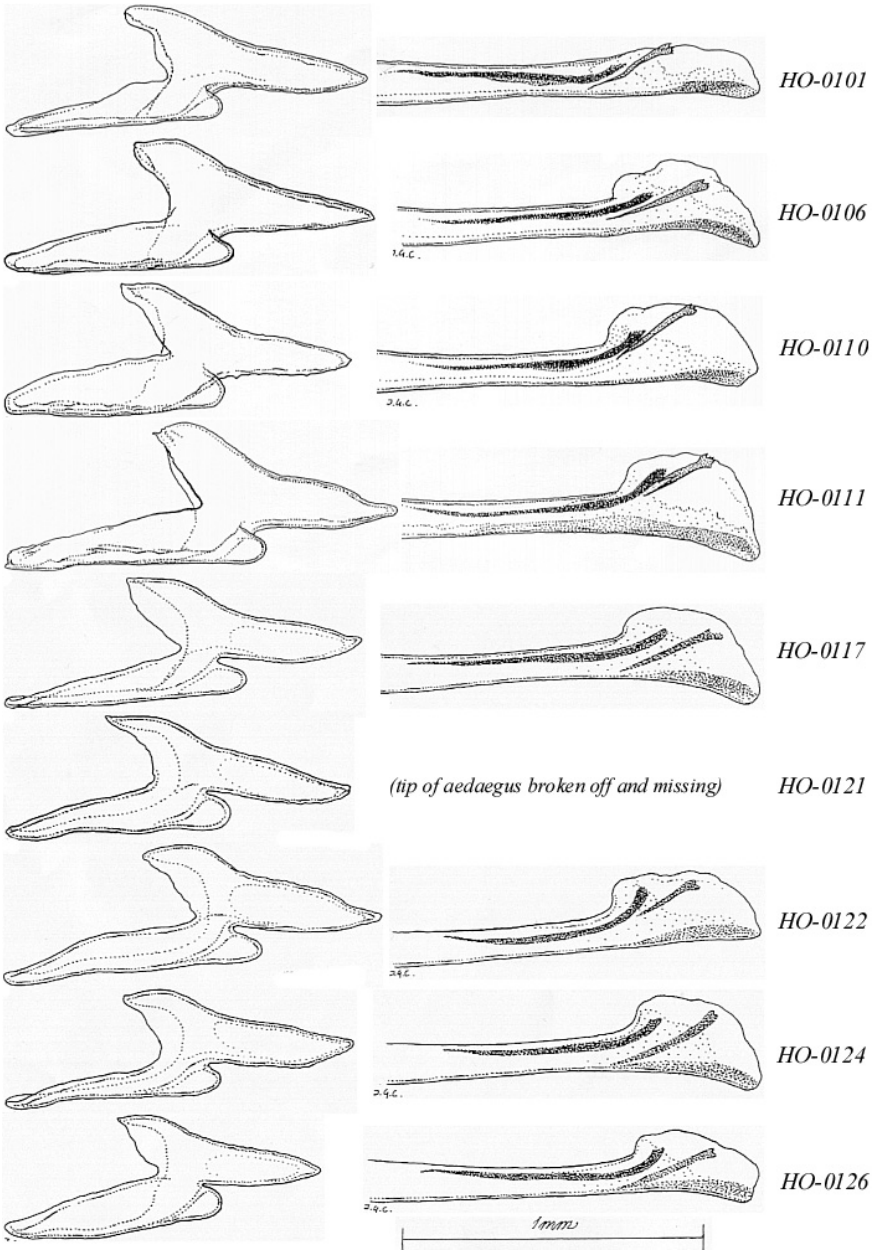


Fig. 1. *S. ilicis* male genitalia (collecting data see table 1); Left: lateral view of left valva; right: lateral view of distal end of aedeagus.

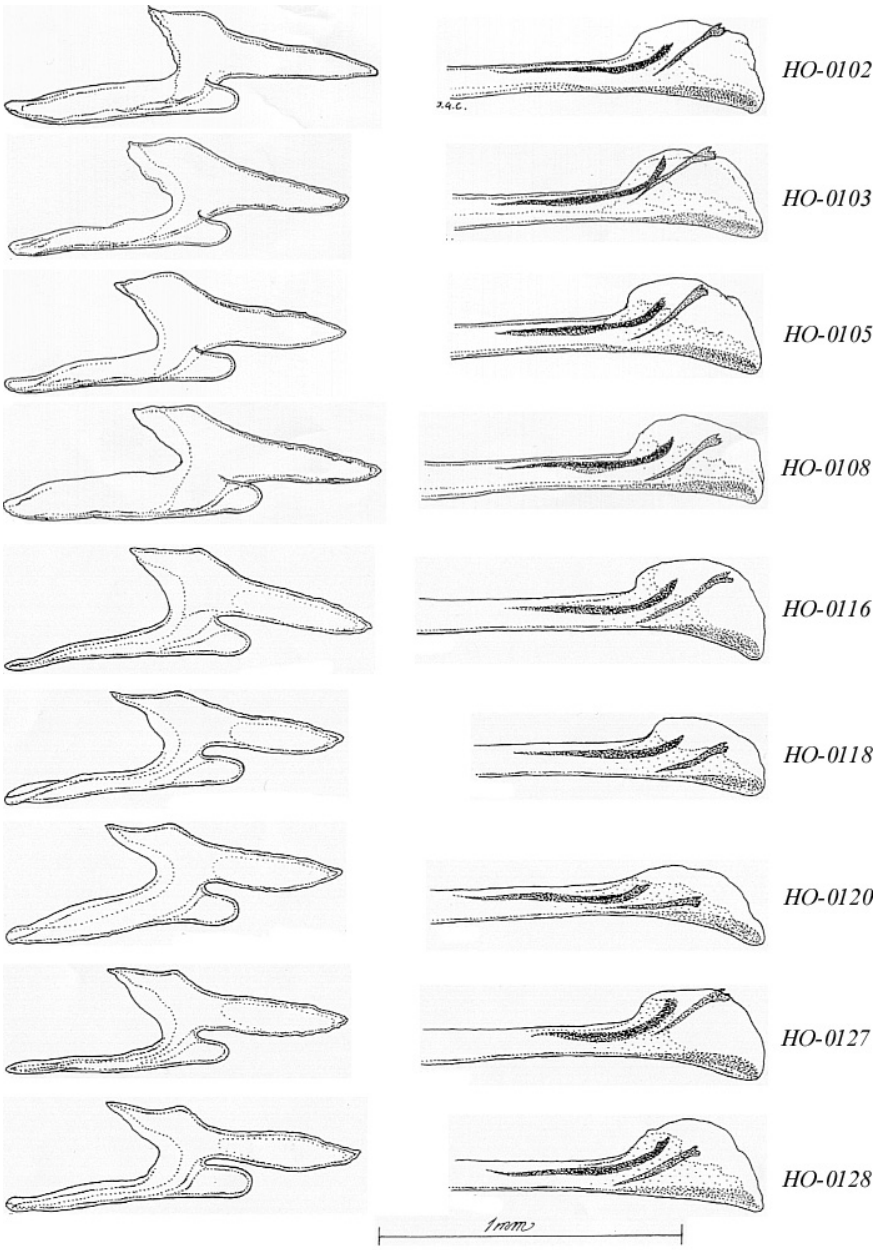


Fig. 2. *S. zabni* male genitalia (collecting data see table 1); Left: lateral view of left valva; right: lateral view of distal end of aedeagus.

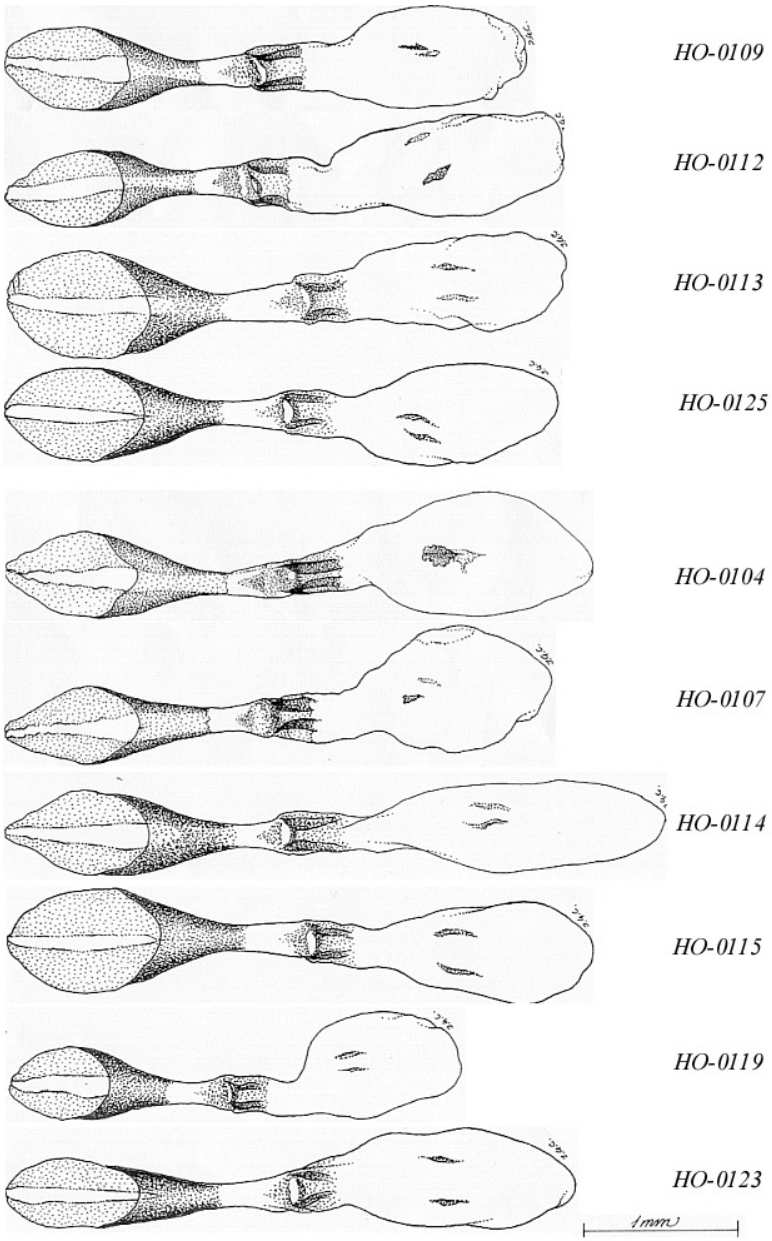


Fig. 3. Female genitalia *S. ilicis* and *S. zabni* (collecting data see table 1); Ventral view of lamela post- and ante-vaginalis, together with the bursa copulatrix, comprising the ductus bursae, the antrum, the corpus bursae and the signa.

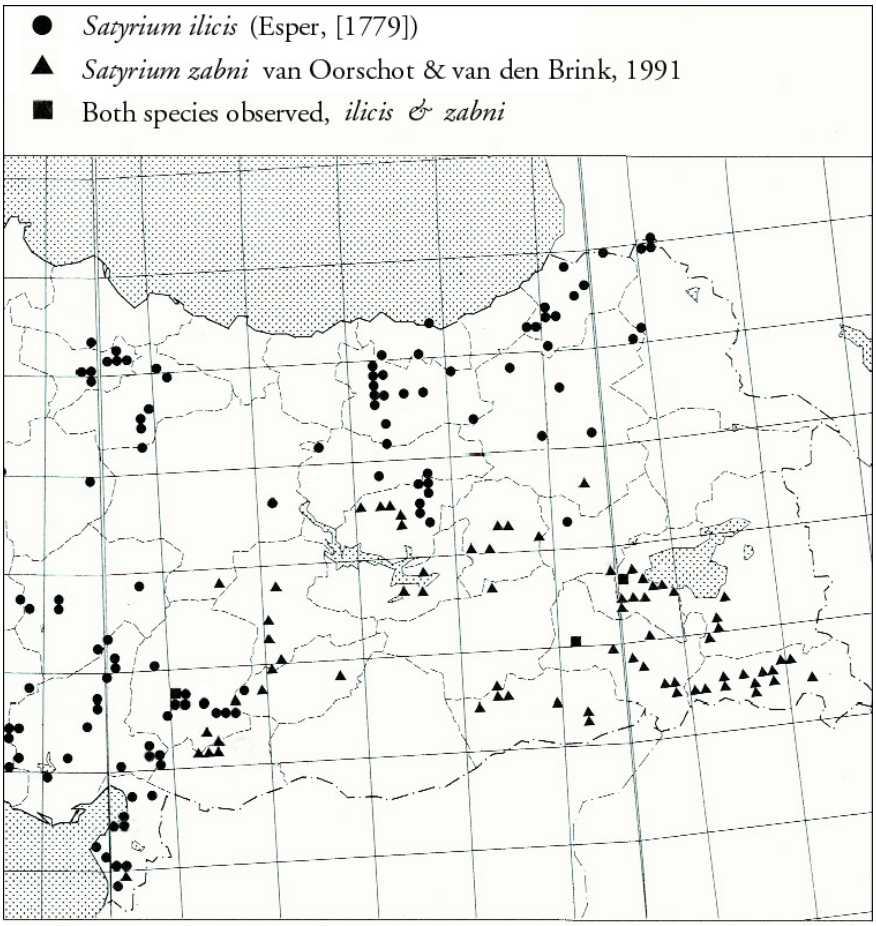
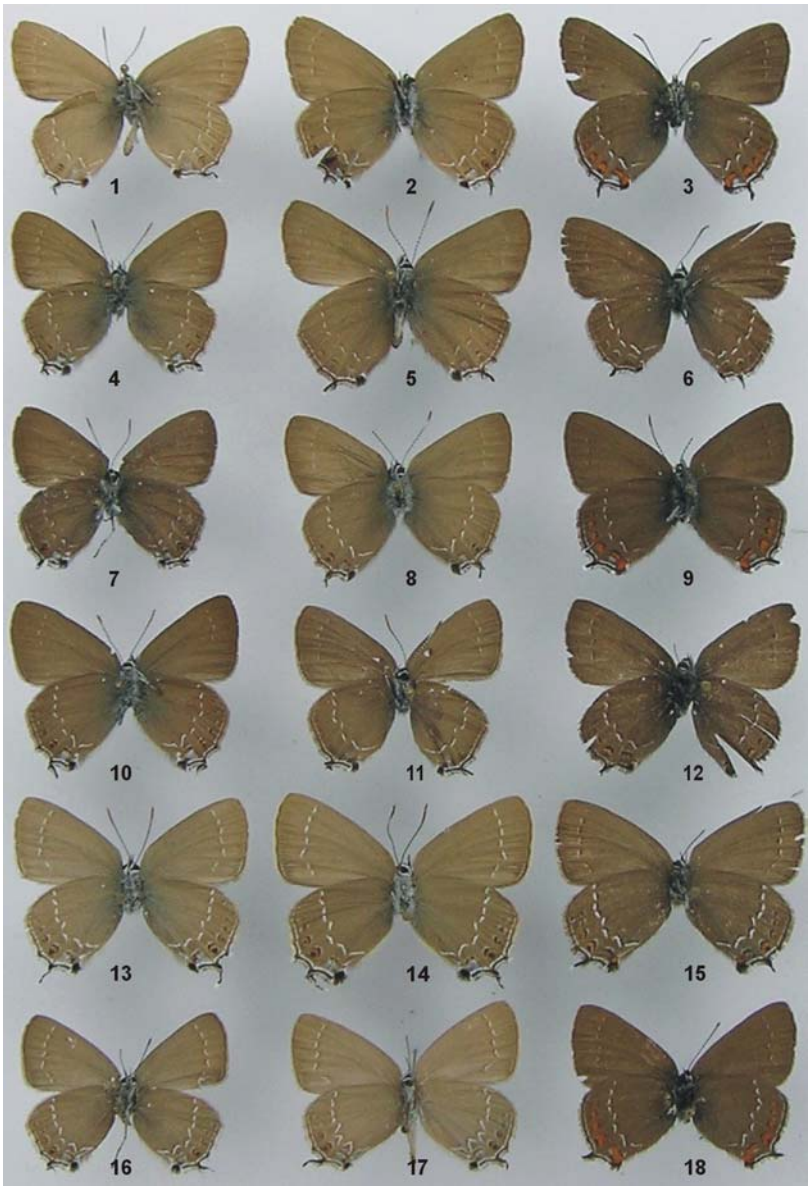


Fig. 4 Distribution of *Satyrium ilicis* and *S. zabni* in East Turkey.

Plate 1



Phegea **32** (4) (1.XII.2004): 142

– *zabni*: proximal end of dorsum of valva angled (not evenly curved), ventro-distal end of valva long (average 60% and extreme 10% longer than in *ilicis*) and dorsal cornutus of aedeagus short (average 25% and extreme 10% shorter than in *ilicis*).

Further differences

Externally the two taxa differ mainly in the following features (plate 1):

– ground colour of the underside of the wings: in *zabni* paler than in *ilicis*, also in specimens from the same general area;

– orange scales inwardly bordering the blue area in cell 1b on the underside of the hindwing: in *zabni* present in low numbers in few specimens only, in *ilicis* usually distinctly present; the lack of almost all orange scales makes the blue area in cell 1b in *zabni* very clear.

– hindwing tail: in *zabni* generally larger and more slender than in *ilicis*, most pronounced in females.

Furthermore, the two taxa differ in habitat preference, *zabni* clearly preferring dryer habitats than *ilicis*. This difference is very striking in the zone of distributional overlap (fig. 4). Overall there is hardly any difference in flight period, *zabni* having been collected between 25 May and 20 July, *ilicis* between 2 May and 26 July.

Legend of plate 1.

Figs. 1–2, 4–5, 7–8, 10–11, 13–14, 16–17 *Satyrium zabni* underside

1. Holotype ♂, Turkey, Hakkari, 33–40 km E. Uludere, 1200–1300m, 13.VI.1985, st. 1249, leg. HO[1].
2. ♂, Turkey, Hatay, Şenköy, 25.V.1985, loc. 024, leg. P. S. Wagener.
4. ♂, Turkey, Erzurum, NW. Hinis, 26.VI.2000, 1700 m, st. 2614, leg. HO.
5. ♂, Turkey, Malatya, Gölbası, 1200.1400m, 30.V.1985, st. 1217, leg. HO.
7. ♂, Turkey, Bitlis, 34 km E. Tatvan, 21.VI.2000, 1800 m, st. 2597, leg. HO.
8. ♂, Turkey, Bitlis, 4km E Güroymak, 1450m, 20.VI.1985, leg. H. Falkner.
10. ♂, Turkey, Bingöl, Buglan Geçidi W.side, 1700m, 23.VI.2000, st.2606, leg. HO.
11. ♂, Turkey, Maraş, 30 km W of Maraş, 800m, 31.V.1984, st.1161, leg. HO.
13. ♀, Turkey, Bingöl, Buglan Geçidi W.side, 1700m, 23.VI.2000, st.2606, leg. HO.
14. ♀, Turkey, Siirt, 51 km W. Baykan, 700 m, 4.VI.1985, st. 1229, leg. HO.
16. ♀, Turkey, Erzurum, NW. Hinis, 26.VI.2000, 1700 m, st. 2614, leg. HO.
17. ♀, W. Iran, Luristan, Bisheh, 1200.1700m, 7.VI.1978, leg. W. Eckweiler.

Figs. 3, 6, 9, 12, 15, 18 *Satyrium ilicis* underside
3. ♂, Turkey, Hatay, Teknepınar, 1000 m, 25.V.1985, loc. 22, leg. P. S. Wagener.
6. ♂, Turkey, Adıyaman, 17 km S. Gölbası, 900 m, 31.V.1985, st. 1218, leg. HO.
9. ♂, Turkey, Bitlis, 4km E Güroymak, 1450m, 20.VI.1985, leg. H. Falkner.
12. ♂, Turkey, Maraş, 30 km W of Maraş, 800m, 31.V.1984, st.1161, leg. HO.
15. ♀, Turkey, Siirt, 51 km W. Baykan, 700 m, 4.VI.1985, st. 1229, leg. HO.
18. ♂, Lebanon, Faitroun, 1250 m, 10.VI.1969, leg. F. J. Gross.

[1] HO = H. van Oorschot

Table 1. Material presented in figs. 1–3

HO-0101	*ilicis* ♂	Turkey, Maraş, 30 km W of Maraş, 800m, 31-V-1984, st.1161, leg. HO[1]
HO-0102	*zabni* ♂	Turkey, Maraş, 30 km W of Maraş, 800m, 31-V-1984, st.1161, leg. HO
HO-0103	*zabni* ♂	Turkey, Bitlis, 4km E Güroymak, 1450m, 20-VI-1985, leg. H. Falkner
HO-0104	*zabni* ♀	Turkey, Bingöl, Buğlan Geçidi W-side, 1700m, 23-VI-2000, st.2606, leg. HO
HO-0105	*zabni* ♂	Turkey, Bingöl, Buğlan Geçidi W-side, 1700m, 23-VI-2000, st.2606, leg. HO
HO-0106	*ilicis* ♂	Turkey, Maraş, Hills NW Maraş, 16-17km on the road to Ağabeyli, 7-VI-1999, st.2502, leg. HO
HO-0107	*zabni* ♀	Turkey, Hakkari, Zab valley, 32km SW Hakkari, 1200m, 16-VI-1985, st. 1254, leg. HO
HO-0108	*zabni* ♂	Turkey, Şırnak, Environment Uludere, 1200m, 10-VI-1985, st.1244, leg. HO
HO-0109	*ilicis* ♀	Turkey, Tunceli, 38km NE Tunceli, 1200m, 13-VII-1987, st.1401, leg. HO
HO-0110	*ilicis* ♂	Turkey, Bitlis, 4km E Güroymak, 1450m, 20-VI-1985, leg. H. Falkner
HO-0111	*ilicis* ♂	Turkey, Gaziantep, Fevsipaşa, 550m, 27-V-1985, st.1211, leg. HO
HO-0112	*ilicis* ♀	Turkey, Maraş, Hills NW Maraş, 16–17km on the road to Ağabeyli, 7-VI-1999, st.2502, leg. HO
HO-0113	*ilicis* ♀	Turkey, Siirt, 51 km W. Baykan, 700 m, 4-VI-1985, st. 1229, leg. HO
HO-0114	*zabni* ♀	Turkey, Siirt, 51 km W. Baykan, 700 m, 4-VI-1985, st. 1229, leg. HO
HO-0115	*zabni* ♀	Turkey, Siirt, 51 km W. Baykan, 700 m, 4-VI-1985, st. 1229, leg. HO
HO-0116	*zabni* ♂	Turkey, Hatay, Şenköy, 25-V-1985, loc. 024, leg. P. S. Wagener
HO-0117	*ilicis* ♂	Turkey, Hatay, Teknepınar, 1000 m, 25-V-1985, loc. 22, leg. P. S. Wagener
HO-0118	*zabni* ♂	Turkey, Bitlis, 34 km E. Tatvan, 21-VI-2000, 1800 m, st. 2597, leg. HO
HO-0119	*zabni* ♀	Turkey, Erzurum, NW. Hinis, 26-VI-2000, 1700 m, st. 2614, leg. HO
HO-0120	*zabni* ♂	Turkey, Erzurum, NW. Hinis, 26-VI-2000, 1700 m, st. 2614, leg. HO
HO-0121	*ilicis* ♂	Turkey, Bingöl, Çobantas Geçidi, 40 km SW Karliova, 30-VI-2000, 1550 m, st. 2631, leg. HO
HO-0122	*ilicis* ♂	Turkey, Adıyaman, 17 km S. Gölbası, 900 m, 31-V-1985, st. 1218, leg. HO
HO-0123	*zabni* ♀	Turkey, Adıyaman, 12–20 km E. Gölbası, 800 m, 31-V-1985, st. 1219, leg. HO
HO-0124	*ilicis* ♂	Turkey, Nevşihir, Topuz Dağı, 1535 m, 6-VII-1982, st. 1056, leg. HO
HO-0125	*ilicis* ♀	Turkey, Nevşihir, Topuz Dağı, 1535 m, 6-VII-1982, st. 1056, leg. HO
HO-0126	*ilicis* ♂	Lebanon, Faitroun, 1250 m, 10-VI-1969, leg. F. J. Gross
HO-0127	*zabni* ♂	W. Iran, Luristan, Bisheh, 1200–1700 m, 7-VI-1978, leg. W. Eckweiler
HO-0128	*zabni* ♂	Iraq, Salahuddin, 3400 ft, 3-VI-1957, leg. L. G. Higgins

[1] HO = H. van Oorschot

Distribution

When describing *zabni* (van Oorschot & van den Brink 1991), a slight overlap of the distribution ranges of the two taxa could be established and actual sympatry was observed in two localities only: NE of Karaman Maraş and SW of Bitlis. Afterwards the latter observation proved false. New material and observations indicate an overlap of about 100 km (see fig. 4) and additionally sympatry has been observed in the Prov. of Siirt (51 km W of Baykan), and near Lake Van (see fig. 4).

The distribution of *zabni* extends to North Iraq and to North West Iran as published (1991 and 1995). One *zabni* male from each country has been included in this publication (see table 1).

Conclusion

The wide distributional overlap, the actual sympatry and the constancy of the differences suggest that the two taxa do not interbreed in nature. Hence we raise *zabni* to species level: ***Satyrium zabni* van Oorschot & van den Brink, 1991 stat. nov.**

Acknowledgements

We wish to express our thanks to Dr. P. S. Wagener (†) and Mr. H. Falkner (Karlsruhe, Germany) for the loan of material.

References

Hesselbarth, G., van Oorschot, H. & S. Wagener, S., 1995. *Die Tagfalter der Türkei unter berücksichtigung der angrenzenden Länder*. Vols 1–3, 2201 p. — Selbstverlag Sigbert Wagener, Bocholt, Deutschland.

van Oorschot, H. & van den Brink, H., 1991. Rhopalocera of Turkey 6. On the geographical variation of *Satyrium ilicis* (Esper) with description of *S. ilicis zabni* n. ssp. from South East Turkey (Lepidoptera: Lycaenidae). — *Entomologische Berichten, Amsterdam* **51**(3): 38–43, 5 figures.