

Additions and corrections to "Die Tagfalter der Türkei". 1. Interesting observations of butterflies in Turkey during the 37th expedition of the "Werkgroep Grieks-Turkse dagvlinders" (Lepidoptera: Hesperidae, Pieridae, Lycaenidae)

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Abstract. The occurrence of *Carterocephalus palaemon* (Pallas, 1771) in Turkey is confirmed. A sexual aberrant of *Colias crocea* (Fourcroy, 1785) is displayed and the seasonal polymorphism and synchronous occurrence of the different broods in *Cupido (Everes) argiades* (Pallas, 1771) are discussed.

Samenvatting. Aanvullingen en correcties op "Die Tagfalter der Türkei". 1. Interessante waarnemingen van dagvlinders in Turkije gedurende de 37ste expeditie van de "Werkgroep Grieks-Turkse dagvlinders" (Lepidoptera: Hesperidae, Pieridae, Lycaenidae) *Carterocephalus palaemon* (Pallas, 1771) werd met zekerheid vastgesteld voor de Turkse fauna. Van *Colias crocea* (Fourcroy, 1785) wordt een seksuele aberrant afgebeeld. De verschillen in de generaties van *Cupido (Everes) argiades* (Pallas, 1771) en het gelijktijdig voorkomen ervan worden besproken.

Zusammenfassung. Ergänzungen und Korrekturen zu "Die Tagfalter der Türkei". 1. Interessante Tagfalterbeobachtungen während die 37ste Expedition der "Werkgroep Grieks-Turkse dagvlinders" (Lepidoptera: Hesperidae, Pieridae, Lycaenidae) Das Vorkommen von *Carterocephalus palaemon* (Pallas, 1771) in der Türkei wird bestätigt. Ein Gynander von *Colias crocea* (Fourcroy, 1785) bei dem nur der linke Vorderflügel die Merkmale des weiblichen Geschlechts zeigt, wird abgebildet. Die saisonale Variabilität von *Cupido (Everes) argiades* (Pallas, 1771) und das gleichzeitige Vorkommen von Tieren verschiedener Generationen wird besprochen.

Résumé. Additions et corrections à "Die Tagfalter der Türkei". 1. Observations intéressantes de papillons pendant la 37ième expédition en Turquie du "Werkgroep Grieks-Turkse dagvlinders" (Lepidoptera: Hesperidae, Pieridae, Lycaenidae) La présence de *Carterocephalus palaemon* (Pallas, 1771) en Turquie a été confirmée. Un aberrant sexuel de *Colias crocea* (Fourcroy, 1785) est figuré. La variation saisonnière et l'existence simultanée d'exemplaires de générations différentes de *Cupido (Everes) argiades* (Pallas, 1771) sont discutées.

Key words: Turkey - faunistics - variability - gynandromorphism - polymorphism - *Carterocephalus palaemon* - *Colias crocea* - *Cupido (Everes) argiades*.

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1. *Carterocephalus palaemon* (Pallas, 1771): presence in Turkey confirmed (Hesperidae) (Plate I, fig. 13)

Until recently *Carterocephalus palaemon* (Pallas, 1771) has only been reported from Turkey by Mann (1862). According to Hesselbarth, van Oorschot & Wagener (1995: 1105) the presence of this species in Turkey was doubtful, although Thrace and NE Turkey were mentioned as the most likely areas where the species could be expected. On 30 May 1995 we caught a fresh male near Ayder in NE Turkey (Rize, 1300 m) in a wet erosion gully with deciduous trees and surrounded by pine trees. During a systematic search of one day we were unable to record further specimens of this species in the same area. The Turkish specimen shows no differences at all as compared to material from western Europe.

2. A sexual aberrant of *Colias crocea* (Fourcroy, 1785) (Pieridae) (Plate I, fig. 14)

On 20 June 1995 we caught a sexually aberrant specimen of *Colias crocea* (Four-

Legend of Plate 1:

Figs 1-12: *Cupido (Everes) argiades* (Pallas, 1771)

Fig. 1: ♂, Turkey, Artvin, 4-6 km NW Meydancik, 3.VI.1995, 1250 m, St. 2038, leg. H. van Oorschot & H. van den Brink.

Fig. 2: ♀, as fig. 1.

Fig. 3: ♂, Turkey, Artvin, 15 km NW Artvin, 2.VI.1995, 200 m, St. 2035, leg. H. van Oorschot & H. van den Brink.

Fig. 4: ♂, as fig. 3.

Fig. 5: ♂, as fig. 1.

Fig. 6: ♂, as fig. 1.

Fig. 7: ♂, Turkey, Rize, 2 km NW Ikizdere, 29.V.1995, 550 m, St. 2026, leg. H. van Oorschot & H. van den Brink.

Fig. 8: ♂, Turkey, Artvin, 4 km N Borçka, 1.VI.1995, 50 m, St. 2033, leg. H. van Oorschot & H. van den Brink.

Fig. 9: ♀, Turkey, Ardahan, 3-5 km S Posof, 31.VII.1993, 1700-1800 m, St. 1946, leg. D. van der Poorten, A. Riemis & W. De Prins.

Fig. 10: ♂, Turkey, Ardahan, 3-5 km S Posof, 31.VII.1993, 1800 m, St. 1946, leg. D. van der Poorten, A. Riemis & W. De Prins.

Fig. 11: ♀, as fig. 10.

Fig. 12: ♀, Turkey, Artvin, 14 km SW Yusufeli, Çoruh valley, 18.VII.1991, 1000 m, St. 1726, leg. D. van der Poorten & W. De Prins.

Fig. 13: *Carterocephalus palaemon* (Pallas, 1771), ♂, Turkey, Rize, Ayder, 30.V.1995, 1300m, St. 2030, leg. H. van Oorschot & H. van den Brink.

Fig. 14: *Colias crocea* (Fourcroy, 1785), Turkey, Gümüşhane, 2 km S Yayladere, 20.VI.1995, 1700 m, St. 2069, leg. H. van Oorschot & H. van den Brink.

Fig. 15: *Polyommatus cornelia* (Freyer, [1850]), Turkey, Niğde, Aladağları West side, 15km SE Camardi, Korac Boğazi, 19.VII.1995, 1800-2000 m, St. 2080, leg. D. van der Poorten & W. De Prins.

Fig. 16-21: *Lycaena virgaureae aureomicans* (Heyne, 1897)

Fig. 16: ♂, Turkey, Niğde, Bolkar Mts North side, SW of Maden, 24.VII.1994, 2600-2800 m, St. 1996, leg. H. van Oorschot, H. van den Brink, D. van der Poorten & W. De Prins.

Fig. 17: ♂, as fig. 16.

Fig. 18: ♂, as fig. 16.

Fig. 19: ♀, as fig. 16.

Fig. 20: ♀, as fig. 16.

Fig. 21: ♀, as fig. 16.

Fig. 22: *Polyommatus bellargus* (Rottemburg, 1775), ♂, Turkey, Konya, 16 km SE Bozkir, 20.VII.1994, 1300 m, St. 1991, leg. H. van Oorschot, H. van den Brink, D. van der Poorten & W. De Prins.

Fig. 23: probable hybrid between *Polyommatus bellargus* (Rottemburg, 1775) and *Polyommatus ossmar* (Gerhard, [1851]), Turkey, Niğde, Aladağları West side, 15km SE Camardi, Korac Boğazi, 19.VII.1995, 1800-2000 m, St. 2080, leg. D. van der Poorten & W. De Prins.

Fig. 24: *Polyommatus ossmar* (Gerhard, [1851]), ♂, Turkey, Niğde, Aladağları West side, Demirkazik, 25.VII.1994, St. 2000, leg. H. van Oorschot, H. van den Brink, D. van der Poorten & W. De Prins.

Plate 1



croy, 1785) in the vicinity of Yayladere (Gümüşhane, 1700 m). This gynandromorph attracted our attention by its peculiar, slightly disturbed flight pattern, rather than by its white female wing. This suggests that also some internal morphological differences inside the thorax affecting the musculature for flight changes exist. The genitalia are in general of the male gender, although some slight abnormalities were observed: the aedeagus is much shorter than in normal *C. crocea*, the tegumen has a slightly malformed superuncus and the 8th tergite has abnormal and randomly placed sclerotizations (Coutsis i.l.) (see fig. 1).

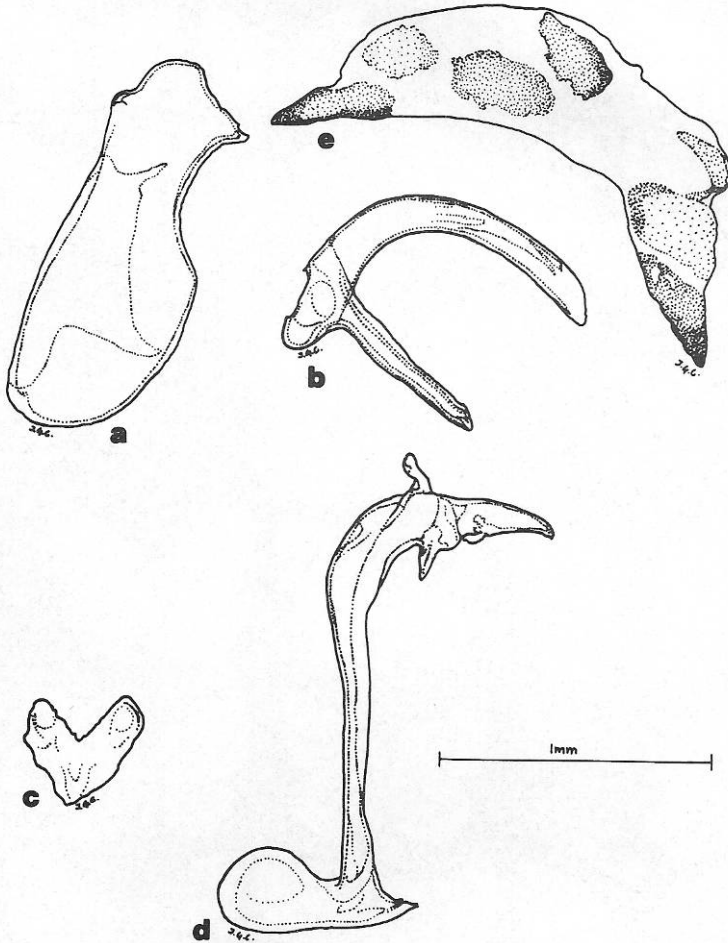


Fig. 1: Genitalia of *Colias crocea* (Fourcroy, 1785), Turkey, Gümüşhane, 2 km S Yayladere, 1700 m, 20.VI.1995, St. 2069, leg. H. van Oorschot; a. left valva side view exterior surface, b. aedeagus side view left side, c. furca front view distal surface, d. side view of left side of genitalia with valvae, aedeagus and furca removed, e. dorsal view (flattened out) of 8th tergite showing random sclerotizations (Prep. JGC2444, del. J.G. Coutsis).

3. Seasonal polymorphism and synchronous occurrence in *Cupido (Everes) argiades* (Pallas, 1771) (Lycaenidae) (Plate 1, figs 1-12)

During 1995 we observed *Cupido (Everes) argiades* (Pallas, 1771) in 13 different localities in NE Turkey from the end of May till the end of June. This indicates that the species is more widespread than we had assumed before. At the northern side of the Pontic Mountains, in the provinces of Trabzon and Rize, only the first generation was observed in May, between 200 and 600 m. In the same area the second brood of the species has been observed together with some worn specimens of the first generation at the end of June. On the southern slopes of the Pontic Mountains, where the average temperatures are higher, the second generation was observed already in early June at about 50 m (Artvin). At higher altitudes some worn specimens of the first generation were also observed at the same time.

The first generation (Plate 1, figs 1, 2, 3, 5, 6, 7) looks almost identical to European material, e.g. a large series in the Museum of Prague. The difference between the first and second brood (Plate 1, figs 4, 8-12) is evident and quite constant (cf. Lorković 1943). Second brood specimens are on the average larger, have the orange lunules on the underside hindwing better developed, and the tails on the hindwing are better expressed.

The present observation is an interesting supplement to Hesselbarth, van Oorschot & Wagener (1995: 553-554) where it was supposed that both broods show no significant differences in Turkey. It now appears that no material of the first generation of *C. argiades* was available at the time the book was written.

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