

Rhopalocera of Turkey. 7. On a new species of *Polyommatus* LATREILLE, 1804 subgenus *Agrodiaetus* HÜBNER, [1822] from north-eastern Turkey (Lepidoptera : Lycaenidae)

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Samenvatting. Een nieuwe soort uit het genus *Polyommatus* LATREILLE, 1804 subgenus *Agrodiaetus* HÜBNER, [1822] uit Noordoost-Turkije (Lepidoptera : Lycaenidae)

De auteurs beschrijven een nieuwe soort uit het genus *Polyommatus* (subgenus *Agrodiaetus*), die zij op enkele plaatsen verzamelden in Noordoost-Turkije. Ze vergelijken de nieuwe soort met alle erop gelijkende soorten uit het subgenus *Agrodiaetus* die in hetzelfde gebied voorkomen. Type-exemplaren van de nieuwe soort en exemplaren van de meest gelijkende soorten worden in kleur afgebeeld.

Résumé. Description d'une espèce nouvelle du genre *Polyommatus* LATREILLE, 1804 sous-genre *Agrodiaetus* HÜBNER, [1822] du nord-est de la Turquie (Lepidoptera : Lycaenidae)

Les auteurs décrivent une espèce nouvelle du genre *Polyommatus* (sous-genre *Agrodiaetus*) qu'ils ont récoltée en diverses localités du nord-est de la Turquie. Ils comparent le nouveau taxon aux espèces voisines qui sont connues des mêmes biotopes. Les types de la nouvelle espèce, et les espèces les plus proches sont figurés en couleurs.

Key words : *Polyommatus - Agrodiaetus - merhaba* sp. n. - Turkey

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During several expeditions of the «Working group Greek-Turkish Butterflies» specimens of a bright, deep blue lycaenid were collected in various localities in the Çoruh valley and adjacent areas (provinces of Artvin and Erzurum). These specimens clearly belong to subgenus *Agrodiaetus* HÜBNER, [1822], but it was impossible to ascribe them to any known species from this taxon, although they were compared with the descriptions and with specimens of *Polyommatus damone* (EVERSMANN, 1841), *P. hopfferi* (HERRICH-SCHÄFFER, [1851]), *P. firdussii* (FORSTER, 1956), *P. transcaspica* (HEYNE, 1895), *P. poseidon* (HERRICH-SCHÄFFER, [1851]), *P. carmon* (HERRICH-SCHÄFFER, [1851]), *P. dama* (STAUDINGER, 1891), *P. theresae* (SCHURIAN, VAN OORSCHOT & VAN DEN BRINK, 1991) and *P. cyanea* (STAUDINGER, 1899), in our collections and in the collections of G. HESSELBARTH, Dr. S. WAGENER, Instituut voor Taxonomische Zoölogie (Zoölogisch Museum) Amsterdam, Natuurhistorisch Museum Leiden and Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel. Furthermore, we compared our specimens with a photograph collection of type specimens of most species in the subgenus *Agrodiaetus* made by Dr. S. WAGENER. In what follows, the specimens are described as a new species.

***Polyommatus (Agrodiaetus) merhaba* sp. nov.** (Plate 1-2, figs. 1-8)

Male : mean forewing length 15,5 mm (min. 14,0 mm, max. 17,5 mm).

Upperside (Pl. 1, figs. 1-3, 7-8): ground colour blue (somewhat like the blue colour in *Polyommatus cyanea* (Pl. 1, fig. 9), a little less violet than in *damone* (Pl. 1, fig. 10) and certainly less intensive violet than in *firdussii* (Pl. 1, fig. 11). Veins on fore- and hindwing very subtly indicated on whole wing, more apparent black in submarginal region towards border (in *cyanea* veins are visible throughout, in *damone* and *firdussii* veins are invisible; *damone* has some black scales on the veins in submarginal area as well). Androconia only apparent under oblique light, whitish, scattered throughout total area of forewing, except the apical and costal zone. Basal half of fringes dark grey, outer half pure white.

Underside (Pl. 2, figs. 1-3, 7-8): ground colour brown-grey (a little browner than in *cyanea* (Pl. 2, fig. 9), darker than in *damone* (Pl. 2, fig. 10) and *firdussii* (Pl. 2, fig. 11), forewing more grey than hindwing, hindwing a little more brownish.

General pattern resembling that of *cyanea*. On forewing postdiscal black dots well developed, broadly ringed white, somewhat like in *carmon* but white rings wider, clearly contrasting with groundcolour (in *damone* and *firdussii* not contrasting much). Black discal dot well developed, larger than the same dot in *damone* and *firdussii*. Two black dots in cell 1b well developed, though smaller than other dots, and connected with each other in 85% of the specimens (in *damone* and *firdussii* these dots are small and separated or even absent). Border of wing with sharp line, dark grey to black. Basal half of fringes grey, outer half white.

Hindwing: basal blue-green suffusion inconspicuous, in some specimens almost absent (better developed than in *damone* but less so than in *firdussii*). Black postdiscal dots small, but all present, ringed white. Black discal dot present, V-shaped (in *damone* and *firdussii* very small or absent). White «*Agrodiaetus*-stripe» well developed (much more strongly contrasting with groundcolour than in *damone* and *firdussii*), in most specimens enlarged in marginal area. In most specimens brownish submarginal lunules well developed, resembling those of *admetus*. Fringes as on forewing.

Male genitalia (fig. 1) do not differ significantly from those of other species in the subgenus *Agrodiaetus*.

Female : mean forewing length 16,0 mm (min. 15,0 mm, max. 17,5 mm).

Upperside (Pl. 1, figs. 4-6): groundcolour brown, black discal dot apparent. Some specimens completely brown, but most with orange submarginal lunules on hindwing. Margin of hindwing evenly rounded in anal area (in *hopfferi* female anal area not evenly rounded (Pl. 1, fig. 13)). At the base of the median vein very few blue scales, same blue as male (*poseidon* females (Pl. 1, fig. 15) also have very few blue scales in the same area, but the blue of *poseidon* male; in most *hopfferi* females no blue scales, except in a few specimens, the grey-blue of *hopfferi* male). Fringes grey, basal half darker grey (fringes are darker in *hopfferi*, pure white in *damone* and *firdussii* (Pl. 1, fig. 14).



Figure 1 : *Polyommatus (Agrodiaetus) merhaba* sp. n., male genitalia, paratype, Turkey, prov. Artvin, Çoruh valley, env. Kiliçkaya, 14-20 km SW Yusufeli, 1000 m, St. 542, 24-25.VII.1989, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN, [GP WDP 3096].

Underside (Pl. 2, figs. 4-6): like male but deeper brown (brown more intense than in *damone*). Black discal dot small, but apparent. «*Agrodiaetus*-stripe» not as clear as in male, not widened towards margin. Fringes darker than in *damone*.

Males of *Polyommatus (Agrodiaetus) merhaba* sp. n. can readily be distinguished from *damone* and *firdussii*, species resembling *P. merhaba* sp. n. most (and from all other *Agrodiaetus* species) by the dark grey-brown colour on the underside and the well developed black postdiscal dots, except *cyanea* which can easily be distinguished by the strongly developed veins on fore- and hindwings.

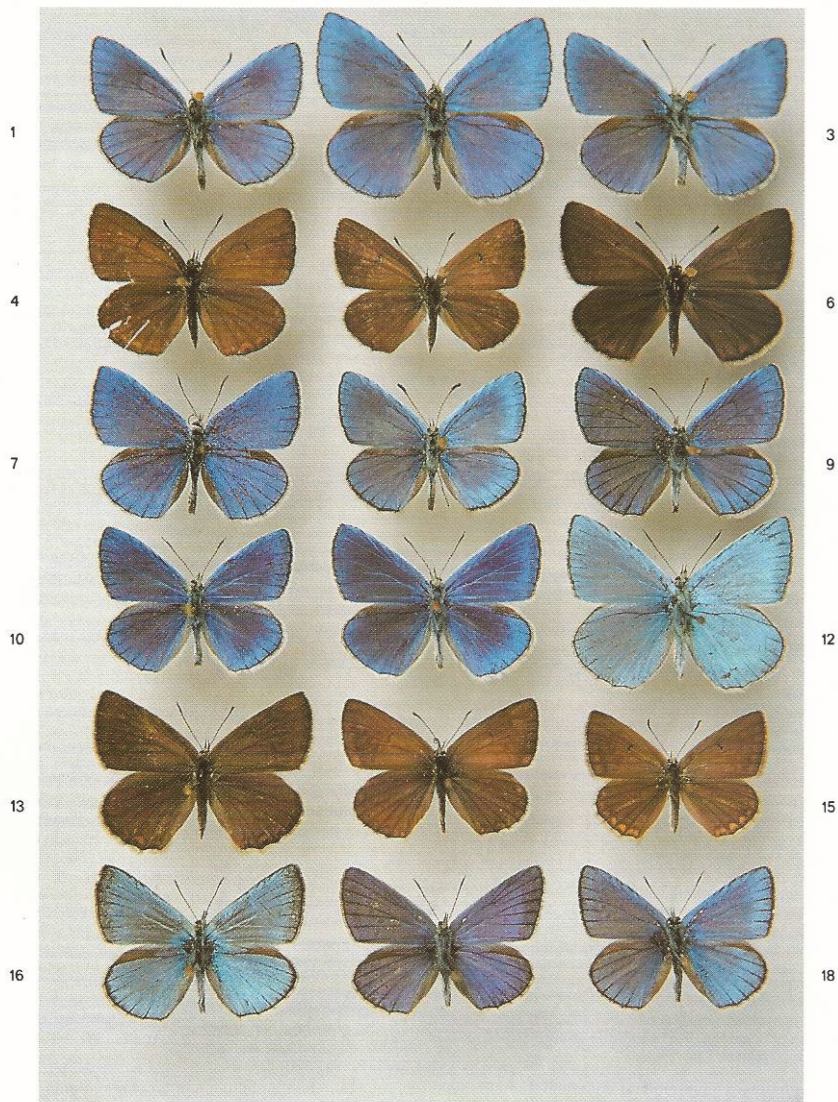
Material examined

Holotype male (Pl. 1-2, fig. 1), forewing length 15,5 mm, Turkey, prov. Artvin, env. Kiliçkaya, 14-20 km SW Yusufeli, Çoruh valley, 1000 m, 24-25.VII.1989, St. 542, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN, in coll. Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam.

Paratypes (Pl. 1-2, figs. 2-3, 7-8) : 4 males and 2 females, same data as holotype.

1 male, Turkey, prov. Erzurum, env. Yukari Sivri, 13 km E Tortum, 1800-2000 m, 9.VII.1989, St. 518, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

Plate 1



Figs. 1-8: *Polyommatus (Agrodiaetus) merhaba* sp. n., 1 Holotype male, 2-3, 7-8 paratypes male; 4-6 paratypes female; Fig. 9: *Polyommatus (Agrodiaetus) cyanea* (STAUDINGER, 1899) male; Fig. 10: *Polyommatus (Agrodiaetus) damone* (EVERSMANN, 1841) male; Figs. 11, 14: *Polyommatus (Agrodiaetus) firdussii* (FORSTER, 1956) 11 male, 14 female; Figs. 12, 15: *Polyommatus (Agrodiaetus) poseidon* (HERRICH-SCHÄFFER, [1851]) 12 male, 15 female; Fig. 13: *Polyommatus (Agrodiaetus) poseidon* (HERRICH-SCHÄFFER, [1851]) 12 male, 15 female; Fig. 13: *Polyommatus (Agrodiaetus) poseidon* (HERRICH-SCHÄFFER, [1851]) 12 male, 15 female
(continued under plate 2)

Plate 2



(continued from plate 1)

(*Agrodiaetus hopfferi* (HERRICH-SCHÄFFER, [1851]) female; Fig. 16: *Polyommatus (Agrodiaetus) iphigenia* (HERRICH-SCHÄFFER, [1847]) male; Fig. 17: *Polyommatus (Agrodiaetus) turcicus* (KOÇAK, 1977) male; Fig. 18: *Polyommatus (Agrodiaetus) transcaspica* (HEYNE, 1895) male.

Plate 2, same specimens as in plate 1, underside.

1 male, Turkey, prov. Artvin, 8-10 km SW Yusufeli, Çoruh valley, 900 m, 24.VII.1989, St. 541, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

1 male, Turkey, prov. Artvin, 25-30 km SW Yusufeli, Çoruh valley, 1100-1200 m, 26.VII.1989, St. 543, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

2 males, Turkey, prov. Erzurum, Gölyurt Geçidi, N.side, 19-21 km S Pazar-yolu, 2200-2500 m, 27.VII.1989, St. 548, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

1 male, Turkey, prov. Erzurum, 30 km S Olur, 1100 m, 2.VIII.1989, St. 565, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

4 males, Turkey, prov. Artvin, 12-14 km SW Yusufeli, 14.VII.1990, leg. J.-P. BORIE.

(Legend of plate 1 and plate 2)

Figs. 1-8 : *Polyommatus (Agrodiaetus) merhaba* sp. n.

1. Holotype male, Turkey, prov. Artvin, env. Kiliçkaya, 14-20 km SW Yusufeli, Çoruh valley, 1000 m, 24-25.VII.1989, St. 542, leg. H. v. OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

2. Paratype male, Turkey, prov. Artvin, 14 km SW Yusufeli, Çoruh valley, 1000 m, 18.VII.1991, St. 726, leg. D. VAN DER POORTEN & W. DE PRINS.

3. Paratype male, Turkey, prov. Erzurum, env. Yukari Sivri, 13 km E Tortum, 1800-2000 m, 9.VII.1989, St. 518, leg. H.v.OORSCHOT, W. DE PRINS, F. COENEN & R. KOOLBERGEN.

4. Paratype female, same data as fig. 2.

5. Paratype female, same data as fig. 1.

6. Paratype female, Turkey, prov. Artvin, 12-14 km SW Yusufeli, 23.VII.1991, J.-P. BORIE leg.

7. Paratype male (aberrant underside), Turkey, prov. Erzurum, 12-25 km NE İspir, Çoruh valley, 1100 m, 4-12.VII.1991, St. 710, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.

8. Paratype male, same data as fig. 1.

Fig. 9 : *Polyommatus (Agrodiaetus) cyanea* (STAUDINGER, 1899), male, Turkey, prov. Ağrı, 29 km W. Dogybayazit, Road Dogubayazit-Ağrı, 17.VII.1990, St. 631, leg. H.VAN DEN BRINK & W. DE PRINS.

Fig. 11 : *Polyommatus (Agrodiaetus) damone* (EVERSMANN, 1841), male, Turkey, prov. Erzurum, Gölyurt Geçidi, N. side, 19-21 km S Pazar-yolu, 2300 m, 13.VII.1991, St. 721, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.

Fig. 11 : *Polyommatus (Agrodiaetus) firdussii* (FORSTER, 1956), male, Turkey, prov. Van, 40 km N Çatak, 1800 m, 2-5.VII.1990, St. 603, leg. H. VAN DEN BRINK, W. DE PRINS & D. VAN DER POORTEN.

Fig. 12 : *Polyommatus (Agrodiaetus) poseidon* (HERRICH-SCHÄFFER, [1851]), male, Turkey, prov. Artvin, 8-10 km SW Yusufeli, Çoruh valley, 900-1000 m, 4-9.VII.1991, St. 711, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.

Fig. 13 : *Polyommatus (Agrodiaetus) hopfferi* (HERRICH-SCHÄFFER, [1851]), female, same data as fig. 2.

Fig. 14 : *Polyommatus (Agrodiaetus) firdussii* (FORSTER, 1956), female, same data as fig. 11.

Fig. 15 : *Polyommatus (Agrodiaetus) poseidon* (HERRICH-SCHÄFFER, [1851]), female, Turkey, prov. Elazığ, E-side Firat, Rd. Malatya-Elazığ, 800 m, 14.VI.1986, St. 319, leg. H. & Th. VAN OORSCHOT, H. VAN DEN BRINK, & J. HUISENGA.

Fig. 16 : *Polyommatus (Agrodiaetus) iphigenia* (HERRICH-SCHÄFFER, [1847]), male, Turkey, prov. Erzurum, 6-10 km NE İspir, Çoruh valley, 1500-1700 m, 3-18.VII.1991, St. 709, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.

Fig. 17 : *Polyommatus (Agrodiaetus) turcicus* (KOÇAK, 1977), male, same data as fig. 10.

Fig. 18 : *Polyommatus (Agrodiaetus) transcaspica* (HEYNE, 1895), male, same data as fig. 7.

1 male, Turkey, prov. Erzurum, 12-25 km NE İspir, Çoruh valley, 1400 m, 4-12.VII.1991, St. 710, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.
36 males, Turkey, prov. Artvin, 8-10 km SW Yusufeli, Çoruh valley, 900-1000 m, 4-9.VII.1991, St. 711, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.

1 male, Turkey, prov. Artvin, Yusufeli, Çoruh valley, 900 m, 4-15.VII.1991, St. 712, leg. W. DE PRINS, D. VAN DER POORTEN & A. RIEMIS.

2 males and 1 female, Turkey, prov. Artvin, 14 km SW Yusufeli, Çoruh valley, 1000 m, 18.VII.1991, St. 726, leg. D. VAN DER POORTEN & W. DE PRINS.

14 males and 3 females, Turkey, prov. Artvin, 12-14 km SW Yusufeli, 12-23.VII.1991, J.-P. BORIE leg.

Paratypes are deposited in the Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam, Natuurhistorisch Museum Leiden, the Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel, and the collections of the authors.

Distribution

As can be seen from the type series, the species is currently known from several localities situated in the Çoruh valley from just north of the village Yusufeli (prov. Artvin) to about 10 km northeast İspir (prov. Erzurum), from a mountain pass ca. 20 km SW İspir (Gölyurt Geçidi) and from two localities about 60 km east of the Çoruh valley. Except for the locality north of Yusufeli all the other localities in the Çoruh valley are situated on the eastern slopes or in small eastern sidevalleys. The butterflies fly at an altitude of 900-1400 m (one specimen was found at an altitude of 1800 m, another at 2200-2500 m).

Ecology

The biotope of *Polyommatus (Agrodiaetus) merhaba* sp. n. consists of loose dry steppe-like vegetation, mostly on steep slopes, with scarce flowers, e.g. *Thymus*, and scattered bushes, e.g. *Paliurus spina-christi*. Males rapidly fly low over this vegetation in a powerful flight. We never observed them sitting on wet soil, as other butterflies (especially species of the genus *Polyommatus*) like to do, although there were some moist patches in the neighbourhood.

Other species that fly in the same biotope together with *Polyommatus (Agrodiaetus) merhaba* sp. n. include amongst others : *Pieris krueperi* (STAUDINGER, 1860), *Thaleropis jonia* (EVERSMANN, 1851), *Hipparchia parisatis* (KOLLAR, 1849), *H. fatua* (FREYER, [1844]), *Lycaena thetis* (KLUG, 1834), *L. ochimus* (HERRICH-SCHÄFFER, [1851]), *L. asabinus* (HERRICH-SCHÄFFER, [1851]), *L. thersamon* (ESPER, 1784), *Tarucus balkanicus* (FREYER, [1844]), *Pseudophilotes vicrama* (MOORE, 1865), *Polyommatus admetus* (ESPER, [1785]), *P. hopfferi* (HERRICH-SCHÄFFER, [1851]), *P. poseidon* (HERRICH-SCHÄFFER, [1851]), *P. iphigenia* (HERRICH-SCHÄFFER, [1851]), *P. transcaspica* (HEYNE, 1895), *Eogenes alcides* (HERRICH-SCHÄFFER, 1852), *Thymelicus hyrax* (LEDERER, 1861) and *T. nova* (REVERDIN, 1916).



Figure 2 : Habitat of *Polyommatus (Agrodiaetus) merhaba* sp. n., Turkey, prov. Artvin, Çoruh valley, 8-10 km SW Yusufeli, 900 m, St. 541, 24.VII.1989 [photo : H.v.OORSCHOT]

The known flight period extends from 9 July to 2 August. Most specimens were captured in the second week of July.

Etymology

The name **merhaba** refers to the Turkish word 'merhaba' (English «hello!») which is used every time one meets somebody in the field. The name was chosen to honour the kindness and hospitality of the Turkish people.

Acknowledgments

We would like to thank the following persons for allowing us to study their collections : Dr. R. DE JONG (Natuurhistorisch Museum Leiden), Dr. H. DUFFELS (Instituut voor Taxonomische Zoölogie, Zoölogisch Museum, Amsterdam), Dr. P. GROOTAERT (Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel), G. HESSELBARTH (Diepholz), and Dr. S. WAGENER (Bocholt). We also would like to thank H. HENDERICKX (Mol) for preparing the colour plates.