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A new species of blue from Turkey, *Neolycaena soezen* Seven, sp. n. (Lepidoptera: Lycaenidae)

S. Seven

Abstract

In this paper, the genus *Neolycaena* de Nicéville, 1890 distributed in Central Asia is recorded for the first time from Turkey. A new species of blue, *Neolycaena soezen* Seven, sp. n. is described from Turkey. The other species flying together with the new species in the field are also listed in the article. *Satyrium (Superflua) ledereri* (Boisduval, 1848), *Tomares dobrogensis* (Caradja, 1895) and *Lycaena (Thersamonia) ochimus* (Herrich-Schäffer, 1851) are new records for the province of Eskişehir. *Caragana grandiflora* is a new recorded host plant of the species of the genus *Neolycaena*.

KEY WORDS: Lepidoptera, Lycaenidae, *Neolycaena*, new species, *Caragana grandiflora*, host plant, Turkey.

Una nueva especie para Turquía, *Neolycaena soezen* Seven, sp. n.
(Lepidoptera: Lycaenidae)

Resumen

En este trabajo, se registra por primera vez para Turquía el género *Neolycaena* de Nicéville, 1890 distribuido en Asia Central. Se describe una nueva especie para Turquía *Neolycaena soezen* Seven, sp. n. También se listan en este artículo otras especies que vuelan con la nueva especie. Son nuevas citas para la provincia de Eskişehir *Satyrium (Superflua) ledereri* (Boisduval, 1848), *Tomares dobrogensis* (Caradja, 1895) y *Lycaena (Thersamonia) ochimus* (Herrich-Schäffer, 1851). *Caragana grandiflora* es registrada como una nueva planta nutricia para las especies del género *Neolycaena*.

PALABRAS CLAVE: Lepidoptera, Lycaenidae, *Neolycaena*, nueva especie, *Caragana grandiflora*, planta nutricia, Turquía.

Introduction

The genus *Neolycaena* de Nicéville, 1890 is placed in the family Lycaenidae Leach, 1815, in subfamily Theclinae Swainson, 1831, in tribus Eumaeini Doubleday, 1847. Type species is *Lycaena sinensis* Alphéraky, 1882, Type Locality: "Kuldja" [W. China]. The genus *Neolycaena* is mainly distributed in Central Asia. It consists of two subgenera, the nominate subgenus *Neolycaena* de Nicéville, 1890 and subgenus *Rhymnaria* Zhdanko, 1998 (ZHDANKO, 1998).

ZHDANKO (2000) reviewed 17 species of genus *Neolycaena* and illustrated genitalia of some species. LUKHTANOV (1993, 1994, 1999) described some new species from Kyrgyzstan and Kazakhstan. Papers about *Neolycaena* in recent years include CHURKIN (2004); ZHDANKO ([1996]a, [1996]b, 1998, 2000); ZHDANKO & YAKOVLEV (2001); KEMAL (2006); KORB (2011). NEKRUTENKO & TSHIKOLOVETS (2005) recorded *N. rhymnus* (Eversmann, 1832) from Ukraine, with a distribution map. YAKOVLEV (2012) recorded *N. rhymnus davidi* (Oberthür, 1881), *N.*

rhymnus musa Zhdanko & Yakovlev, 2012, *N. chimaera* Churkin, 2004 and described a new species *N. sapozhnikovi* Yakovlev, 2012. KORB & BOLSHAKOV (2011) gave new combinations and new status in their monographic study. No *Neolycaena* species are known from Turkey (HESSELBARTH *et al.*, 1995, KEMAL & KOÇAK, 2011).

Caragana Fabricius, 1763, is a genus of about 91 species of flowering plants in the family Fabaceae native to Asia and Eastern Europe. *Caragana* species are used as food plants by the larvae of *Neolycaena* species. These species are *C. pygmaea* (L.) DC., *C. spinosa* (L.) DC., *C. microphylla* Lam., *C. murantiaca* Köhne, *C. frutex* (L.) K. Koch, *C. jubata* (Pall.) Poir., *C. balchaschensis* (Kom.) Pojark., and *C. turkestanica* Kom. *Caragana grandiflora* (M. Bieb.) DC is only known from Turkey and recorded from Ankara, Konya, Erzurum and Kars provinces (DAVIS, 1970, HUBER-MORATH, 1983, EKIM *et al.*, 1991).

The range of *Neolycaena rhymnus* is closer to Turkey than the ranges of other species of *Neolycaena* distributed in Central Asia. Three subspecies are known from their range stated to be "S. European part, W., Central and E. Kazakhstan to the Altai and Sayan Mts." The nominotypical subspecies is from Sergievsk (Volga River), ssp. *betbakdalensis* Zhdanko, 1998 from W. Kazakhstan (Betbakdala) and ssp. *rufina* Lukhtanov, 1994 was described from SE Kazakhstan (Katutau Mts. Dzhungarsky Alatau). Specimens collected from Eskişehir have been compared to *Neolycaena rhymnus*.

Material and methods

Specimens were collected from Eskişehir province in May 2013, 2014, prepared and labeled according to the standard museum methods. After this preparation, illustration of genitalia were photographed with the digital camera attached to a Nikon stereomicroscope. The specimens were deposited in the Zoology Museum of Gazi University (ZMGU).

Results and discussion

Neolycaena de Nicéville, 1890

Type species: *Lycaena sinensis* Alphéraky, 1882, *Horae Soc. ent. Ross.*, **16**: 383, pl. 14, fig. 7.

Type Locality: "Kuldja" [W. China].

Eyes with hairs. Upper side of wings brown. Androconial scales close to costa on fore wing. Underside of wings brown, basal part of wings of some taxa with metallic blue-green scales. White spots are located on marginal and submarginal area; some species have black and orange scales in this area (DUBATOLOV *et al.*, 2005).

Neolycaena soezen Seven, sp. n. (Figs. 1-2, 4-5)

Holotype: ♂, Turkey, Prov. Eskişehir, Günyüzü, 780 m, 8-V-2014, leg. S. Seven (GP77♂) (Fig. 6). Paratype: Turkey, Prov. Eskişehir, Günyüzü, 780 m, 28-V-2013, 2 ♂♂, ibid. loc., 8-V-2014, 4 ♂♂, 4 ♀♀, 15-V-2014, 5 ♂♂, 5 ♀♀.

Description: Forewing length 15-23 mm. Antennal club cylindrical. Uppersides of wings brown. Forewing underside gray-brown, base lighter colored with metallic blue-green scales. Marginal edge white and cilia darker, moon like shape at the end of the wing veins. Marginal spots black and arranged regularly at the termen. Black spots surrounded by white color, without orange. Except the first two black spots, the others extend to the white marginal area. Submarginal spots arranged regularly and distant from marginal spots. White spots on radius and median considerably distant to the other white spots. White spot on distal cell linear. Hind-wing underside grayish brown, basal part of wing with metallic blue-green scales. Marginal spots regular, white, inside with a black spot and with orange scales. Orange spots well developed. Submarginal band with irregular hollow white spots. 3rd

submarginal spot almost combined with 3rd marginal spot. Subdistal area with white spot. Distal area without spot. Cilia on the edge of wing with black and white stripe.

Habitat (Fig. 7): Anatolian gypsum steppe, *Astragalus* area. Dominant plants: *Astragalus macrocephalus*, *Caragana grandiflora*, *Astragalus spp.*, *Phlomis*, *Hypericum*, *Artemisia*. Host Plant: *Caragana grandiflora* (Fabaceae) (Fig. 8) is a new recorded host plants of genus *Neolycaena*.

Diagnosis: The main difference from the similar species *N. rhymnus* is the more pronounced black and orange spots. However black and orange spots on submarginal band are significantly smaller than white spots in *N. rhymnus*, these spots are well developed in the new species.

Further differences between *N. rhymnus* and *N. soeken* are in the position of the submarginal white spots which are regularly aligned in the first species, but irregularly aligned in the latter. Another difference with *N. rhymnus*, is the 3rd white submarginal which is almost combined with the 3rd white marginal spot. The white discal spot on the fore-wing underside is absent. Additionally, the host plant of *N. rhymnus* is *Caragana frutex* (KUZNETSOV & MARTYNOVA, 1954; ZHADANKO, 1997) whereas the host plant of *N. soeken* is *Caragana grandiflora*.

Etymology: This species is named after Prof. Dr. Mustafa Sözen, who took the photos of specimens from the field studies during the duration of TANAP Project, Pre-Construction Environmental Study, and for realizing the existence of a new species.

List of other butterfly species flying with the new species in the field

21 taxa were determined to fly together with the new species in the area.

PIERIDAE

Pontia daplidice (Linnaeus, 1758)
Euchloe (Euchloe) ausonia taurica Röber, 1907
Colias (Eriocolias) crocea (Fourcroy, 1785)

NYMPHALIDAE

Hyponephele (Hyponephele) lupina intermedia (Staudinger, 1886)
Melanargia (Turcorgia) larissa (Geyer, [1828])
Pseudochazara (Achazara) anthelea (Hübner, [1824])
Vanessa (Cynthia) cardui (Linnaeus, 1758)
Melitaea (Cinclidia) phoebe (Goeze, 1779)

LYCAENIDAE

Satyrium (Superflua) ledereri (Boisduval, 1848). **New records for Eskişehir province.**
Tomares dobrogensis (Caradja, 1895)

Remark: *Tomares dobrogensis uighurica* Koçak, Seven & Kemal, 2000 (Fig. 9) was recorded from Ankara. The most significant difference between *T. nogelii* and *T. dobrogensis* is size (KOÇAK, 2000). The specimens collected from the field are significantly larger than *T. nogelii*. The specimens were observed laying eggs on *Astragalus macrocephalus* and photos taken (Fig. 10). **New records for Eskişehir province.**

Satyrium (Superflua) ledereri (Boisduval, 1848)
Cupido (Cupido) osiris (Meigen, [1829])
Glaucomysche (Glaucomysche) alexis (Poda, 1761)
Pseudophilotes vicrama schiffermuelleri (Hemming, 1929)

Turanana endymion (Freyer, [1850])

Polyommatus (Aricia) agestis ([Denis & Schiffermüller], 1775)

Polyommatus (Polyommatus) icarus (Rottemburg, 1775)

Plebejus (Kretania) carmon (Herrich-Schäffer, 1851)

Plebejus (Plebejides) sephyrus (Frivaldszky, 1835)

Lycaena (Thersamonia) ochimus (Herrich-Schäffer, 1851). **New records for Eskişehir province.**

HESPERIIDAE

Spialia (Spialia) phlomidis (Herrich-Schäffer, 1845)

Thymelicus lineola (Ochsenheimer, 1808)

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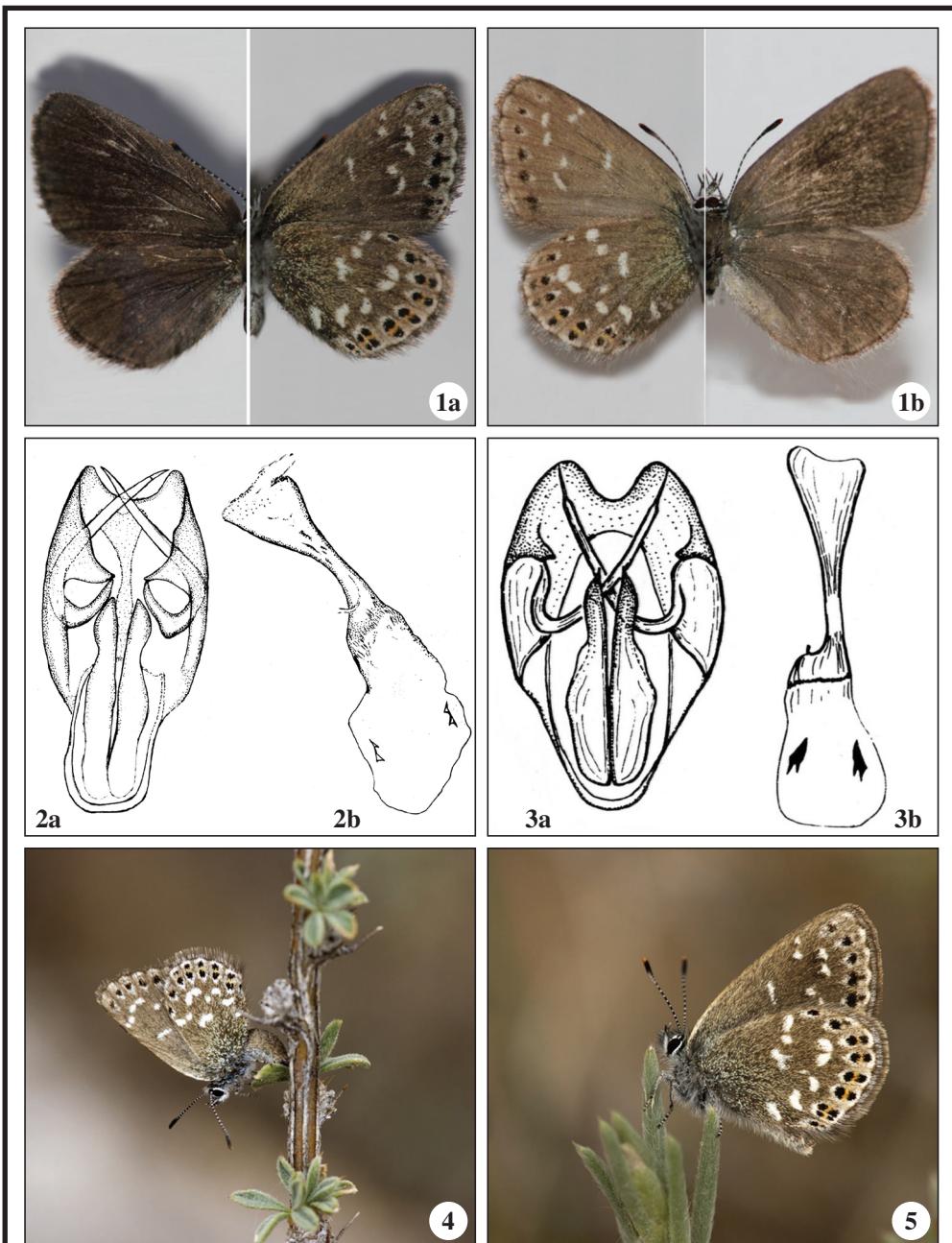
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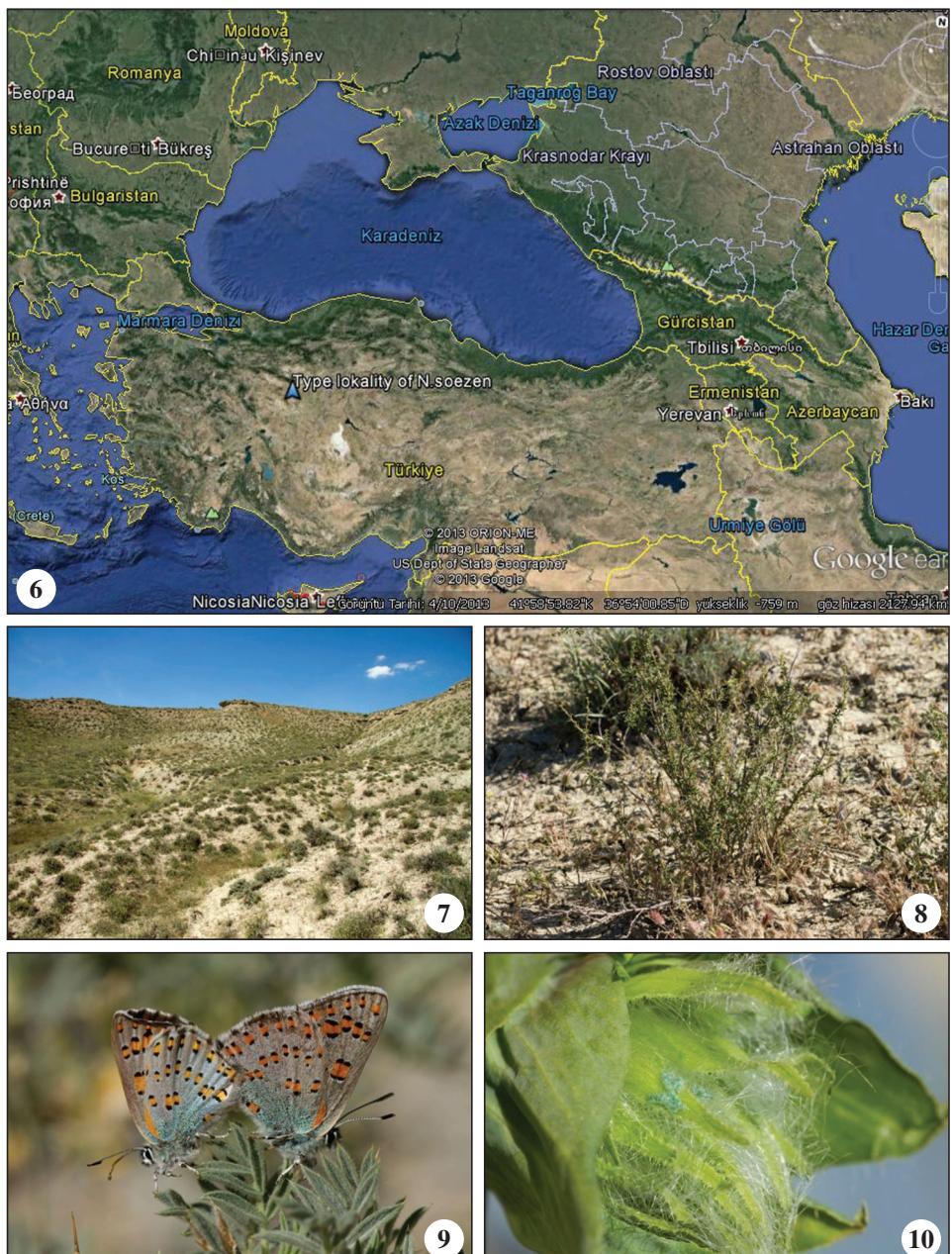
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Figs. 1-5.- 1. *N. soezen* Seven, sp. n.; **1a.** Male; **1b.** Female; **2.** Genitalia of *N. soezen* Seven, sp. n.; **2a.** Male; **2b.** Female **3.** Genitalia of *N. rhymnus* (Eversmann, 1832) (ZHDANKO, 2000); **3a.** Male; **3b.** Female; **4.** Male of *N. soezen* Seven, sp. n.; **5.** Female of *N. soezen* Seven, sp. n.



Figs. 6-10.— 6. Turkey, Eskişehir province, Günyüzü (Type locality of *Neolycaena soezen* Seven, sp. n.; 7. Günyüzü, type locality of *N. soezen* Seven, sp. n.; 8. *Caragana grandiflora*, host plant of *N. soezen* Seven, sp. n.; 9. *Tomares dobrogensis* (Caradja, 1895); 10. Eggs of *T. dobrogensis* (Caradja, 1895).