

Agrodiaetus coelestina Eversmann (A.C.):
a Lycaenid new to Greece and Western Europe

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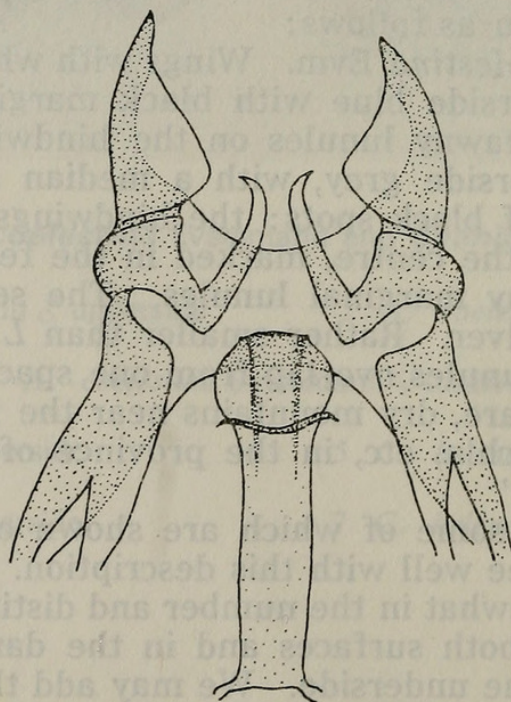
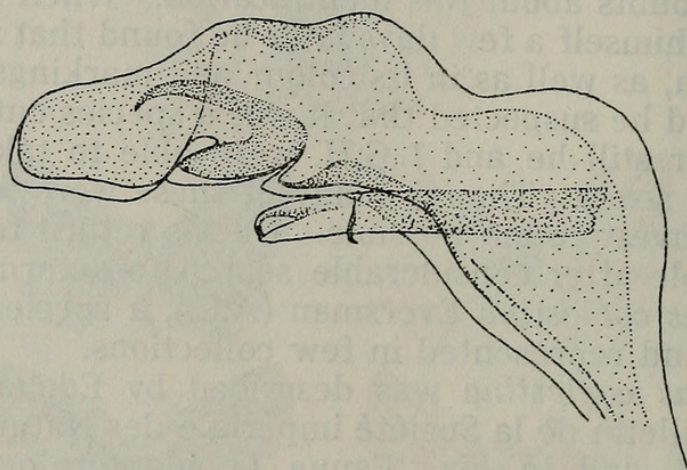
The authors were fortunate to discover, in May and June 1971 on a mountain in the Peloponnese, a Lycaenid which appears to be previously unknown both in Greece and in Europe west of the Soviet Union. The first four specimens, two males and two females, were caught by R.F.B. and C.G.M. de W. flying beside a forest track along with large numbers of *Cyaniris helena* Stdgr.; both species frequented the flowers of a tall yellow vetch. They were at first assumed to be some form of *C. semiargus* Rott., to which *C. helena* has itself been often referred. However, J.C., seeing them on the setting boards, felt doubts about this identification. When he caught a single male himself a few days later he found that it differed in its genitalia, as well as in its colour and markings, from *C. semiargus*; and he suspected that it was a species entirely new to him. Later still he and L.G.H. were able to take a short series of both sexes. Though many of these were worn, they made fuller investigation possible. On his return to England L.G.H. was able after considerable search to determine them as *Agrodiaetus coelestina* Eversman (A.C.), a species which is little known and represented in few collections.

Agrodiaetus coelestina was described by Edouard Eversman in the Bulletin de la Société impériale des Naturalistes de Moscow, 1843, and in his "Fauna Lepidopterologia Volgo-Uralensis", published in 1844. His description may be translated from the Latin as follows:

"*Lycaena coelestina* Evm. Wings with white fringes — on the upperside blue with black margins (male), or brown with tawny lunules on the hindwings (female); on the underside grey, with a median streak and a single row of black spots: the hindwings bronzy from the base to the centre, marked in the female with up to four tawny marginal lunules. The sea-blue colour inclines to silver. Rather smaller than *L. acis*. In the female the lunules overlap from one space to the next. It inhabits bare, dry mountains near the rivers Sacuraram, Ic, Taschla, etc, in the province of Orenburg; it flies in June."

Our specimens, some of which are shown on the colour-plate opposite, agree well with this description. The females, however, vary somewhat in the number and distinctness of the tawny lunules on both surfaces and in the darkness of the ground colour on the underside. We may add that the superficial features which best separate the species from *C. semiargus* Rott. (*acis* Schiff.) are, first, the brilliant shining blue of the males upperside; second, the heavy greenish scaling on the underside in both sexes; third, the even align-

ment of the spot in space 3 of the underside hindwings with its neighbours: in *C. semiargus*, and also in *C. helena*, this spot is sharply set back towards the centre of the wing. This detail is more obvious in the females of *A. coelestina* than in the males because in the latter the spot in space 2 may be missing; but the alignment of the spots in spaces 3 and 4 is still clear. Brilliant colour in the males and some greenish tinge in the scaling on the underside in both sexes may indeed be present in some races of *C. semiargus*, though never to nearly the same degree as in *A. coelestina*; but the even alignment of the spots on the underside hindwings is never found in *C. semiargus*. The male genitalia of *A. coelestina* are shown in the drawings by J.C. below. They differ greatly from those of *C. semiargus* and their form has caused modern authors to place the species in the genus *Agrodiaetus*, widely separated from *Cyaniris*.



Male genitalia of *Agrodiaetus coelestina* Eversman

Upper figure side view of labides, falces, aedoeagus, etc.

lower figure Ventral view, omitting valvae, vinculum, etc., which do not show good specific characters.

Herrich-Schaeffer included excellent colour plates of the upper and under sides of *A. coelestina* in his "Systematische Bearbeitung der Schmetterlinge von Europa", though there is no mention of it in his text, whose title-page is dated 1843, before Eversman's (A.C.) own work. The species was illustrated by Gerhard in his "Monographie" of 1853, and also, almost unrecognisably, by Lan (1884). Seitz (1907) figured the male upperside and the female underside, but in the former the colour is too dark a blue, and in the latter the greenish scaling is hardly shown. Of its distribution Seitz said: "In the South Russian steppes, at Sarepta, Orenburg, etc., and in the Caucasus". He added that *alticola* Christ is a smaller form from Armenia, with the ocelli of hindwings beneath obsolescent, the verdigris dusting occupying nearly the whole hindwing, with a broader border to the upperside forewing. W.G. Sheldon (1914) found *A. coelestina*, commonly mostly in poor condition, between 19th May and 26th June near Sarepta, on railway banks wherever there was a considerable growth of leguminous plants. Along with some of his specimens there are in the British Museum (Natural History) a few from Uralsk and Guberli, and a single worn male which is labelled "Shar-Deresy, N. Syria: native collector, 1900". Subsp. *iranica* Pfeiffer (1938) was named from the Elzburg Mountains in Iran, but we have not seen any examples.

The former Tsarist province of Orenburg lies at the south east of the Ural Mountains, on the extreme fringe of geographical Europe. Sarepta is on the river Volga a few miles below the city later made famous as Stalingrad. Even the Caucasus is a thousand miles east of the Greek Peloponnese. The discovery of *A. coelestina* there is therefore very surprising. Since as yet we know of only one colony, in a restricted locality where the species is apparently not abundant, it seems wise not to publish its precise position at present.

The colour plate opposite illustrates both *A. coelestina* and *C. helena*. The taxonomic position of the latter is still uncertain. First described by Staudinger in 1862 from southern Greece, it has been treated by most authors as a form or subspecies of *C. semiargus*. No differences have been detected in their genitalia, and the two are not known to be anywhere sympatric. The superficial differences are, however, so great that it is difficult to regard them as con-specific. *C. helena* is smaller than most, if not all, races of *C. semiargus*: it ranges from about 26 to 32 mms. in the males and from 25 to 30 mms. in the female. On the upperside, the males are of a paler, more violet, blue; and the females have four or more large orange marginal lunules on each hindwing and frequently up to three, more or less pronounced, on each forewing. On the underside, both sexes have a band of joined orange lunules on the hindwings, and traces of a similar band on the forewings are usually well developed in the females and frequently present in the males. It is true that in *C. semiargus parnassia* Stdgr. from the north side of the Gulf of Corinth

traces of yellow lunules are fairly frequent on the underside hindwings of both sexes; but these never form continuous bands as they do in *C. helena*. *C. helena* also has a weaker and more hesitant flight and looks very different from *C. semiargus* on the wing. Seitz, who treated *C. helena* as a form of *C. semiargus*, linked it with *C. antiochena* Lederer, which is found in the Lebanon and in Kurdistan. This has a similar pattern and degree of lunulation on the underside, but in the females the uppersides have a heavy suffusion of brilliant blue, of which there is no trace in *C. helena*.

C. helena has been found in several mountain areas of the Peloponnese, and has a considerable range of altitude, from at least 700 m. to 1,700 m. We do not know of any description of the larvae, and the food-plant is unknown. Clearly, more field study is needed before its relationships with *C. semiargus* or *C. antiochena* can be firmly established.

We are much indebted to Mr T. G. Howarth, of the British Museum (Natural History), who arranged for the production of the di-positive from which the colour plate has been produced.

References

- Eversman (A. C.), Edouard. 1843. *Bull. Soc. imp. Nat. Moscou* 16: 535; 1844, *Fauna lepidopterologica Volgo-Uralensis*, 44-45. Casan.
- Herrich-Schaeffer, G. A. W. 1843-1856, *Systematische Bearbeitung der Schmetterlinge von Europa*, 1, tab. 70. Regensburg.
- Gerhard. 1853. *Versuch einer Monographie der Europäischen Schmetterlings-arten*. Hamburg. Plate 16, i (a)-(d).
- Lang, H. C. 1884. *The Butterflies of Europe*, p. 130 and plate 21:6.
- Seitz. 1907. *Palaearctic Butterflies*, trans. Dr K. Jordan, p 317, 319, plate 82 c and f.
- Sheldon, W. G. 1914. In search of Russian butterflies (*Entomologist* 47: 233-242).
- Staudinger, O. 1862. *Stett. ent. Zeit.* 265
- Ellison, R. E. and Wiltshire, E. P. 1938, *Fauna of Lebanon* (*Trans. R. ent. Soc. Lond.* 33: 1-56).
- Higgins, L. G. 1958. *Butterflies in Kurdistan* (*Entomologist* 91: 43); 1970, *A Field Guide to the Butterflies of Britain and Europe*, p. 291, plate 55, map 307.

CLOSSIANA SELENE (Schiff.): SECOND BROOD — Prompted by the note by Mr R. F. Bretherton (*Ent Record*, 83: 352) I write to report a brood of 29 specimens bred out in August 1971. A female was caught on 8th June 1971; eggs were laid on or before 13th June and commenced hatching on 26th June. The larvae pupated between 23rd and 31st July and emerged between 3rd and 13th August. One larva did attempt to hibernate in July, but dried up in August. — A. S. WHEELER, Chelston, 18a Broadhurst, Ashted Surrey. 27.xii.1971.



Bretherton, Russell Frederick et al. 1972. "Agrodiaetus coelestina Eversmann (A.C.): a Lycaenid new to Greece and Western Europe." *The entomologist's record and journal of variation* 84, 29–32.

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