

Maculinea alcon limitanea nov. ssp. / Lepidoptera:
Lycaenidae / from Transsylvania, Rumania

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Abstract: A new subspecies of Maculinea alcon D. & SCH. 1775 described. Some remarks on its habitat, ethology and taxonomic problems are given.

Introduction

There is a great number of Maculinea alcon D. & SCH. from the Eastern Carpathians in the Lepidoptera Collection of the Hungarian Natural History Museum. These specimens are different from the other Carpathian Maculinea alcon D. & SCH. specimens in the form of their wings, ground colour and pattern as well as fenology and ecology.

I read through the referring literature and data and examined the Lycaena material of the Hungarian Natural History Museum and I am convinced that the Maculinea alcon populations of the Eastern Carpathians represent a new undescribed subspecies.

Material

Holotype, ♂ Persányi-hegység, Vargyasi-szoros; 1980. VII. 4., leg. Kovács.

Allotype, ♀ Persányi-hegység, Vargyasi-szoros; 1980. VII. 5., leg. Kovács.

Paratypes, 23 ♂ and 14 ♀ Transsylvania, Gyilkostó; E. VII. 1941., coll. V. Bartha / 1 ♀; Mikóújfalu, Nagypatak; 1975. VI. 29., leg. Kovács / 2 ♂, 1 ♀; Uzonkafürdő; 1975. VII. 18., leg. Kovács / 1 ♂; Mikóújfalu, Nagypatak; 650 m; 1976. VII. 1., leg. Kovács / 1 ♂; Békási-szoros, 1100 m; 1978. VII. 16., leg. Kovács / 1 ♀; Békási-szoros, 1000 m; 1979. VI. 25., leg. Kovács / 2 ♂; Vargyasi-szoros, 700 m; 1980. VII. leg. Kovács / 1 ♂, 2 ♀; Vargyasi-szoros, 700 m; 1980. VII. 5., leg. Kovács / 2 ♂, ♀; Vargyasi-szoros, 700 m; 1980. VII. 6., leg.

Kovács /5 ♂, 2 ♀/ Erdély: Békás-szoros, Kupás-patak; 1980.
 VII. 21., leg. Bálint and Ronkay G. /5 ♂, 2 ♀/ Gyergyó, Csi-
 szér; 1980. VIII. 10., leg. Kovács /1 ♀/ Gyergyó, Borzont;
 1980. VII. 13., leg. Kovács /2 ♂, 1 ♀/; Csíki-havasok, Poty-
 tyond; 1981. VII. 19., leg. Bálint /2 ♂/; Románia, Gyilkostó;
 1981. VII. 24-26., leg. Bálint /1 ♂, 1 ♀/; in coll. Hung. Nat.
 Hist. Mus. Budapest /Hungary/

Description

Males: Alar expanse of Holotype 31 mm. Variation on type series 25 - 35 mm. Wings long and narrow. Upper side of wings deep blue with a delicate black suffusing. Wide black marginal border flowing into the post discal area near the veins but never separating sharply from the ground colour. Most of the specimens has a discoidal spot.

Underside's ground colour dark, brownish grey. Outer line of submarginal spots indistinct, inner line well marked, brownish black. Postdiscal spots small, rings grey and not well defined. Spot in discal cell of fore wing sometimes missing, sometimes only on one side. Fringes white.

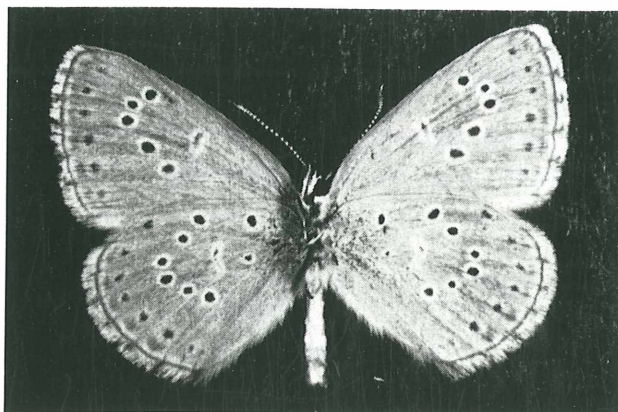
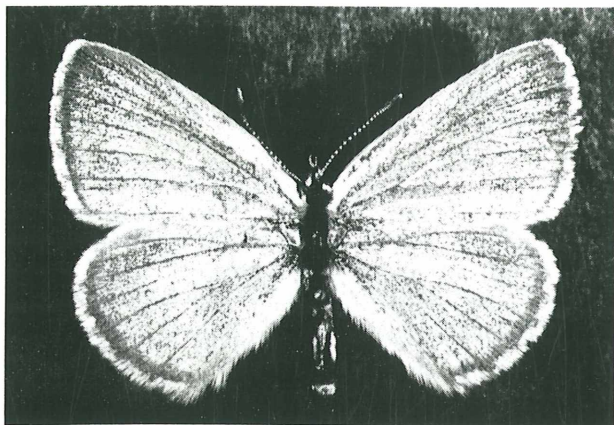
/ The upperside of some specimens have a grey ground colour without brownish shade. The postdiscal spots are bigger, rings are whiter and can be better seen on these specimens. /

Females: Alar expanse of Allotype 33 mm. Variation in type specimens 28 - 38 mm. Wings as the male's, but rounder.

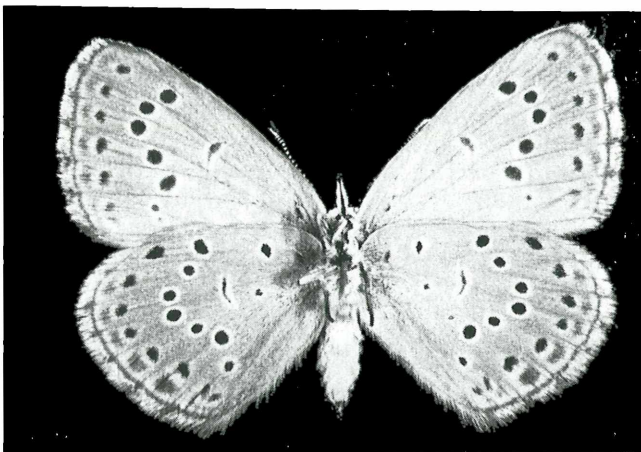
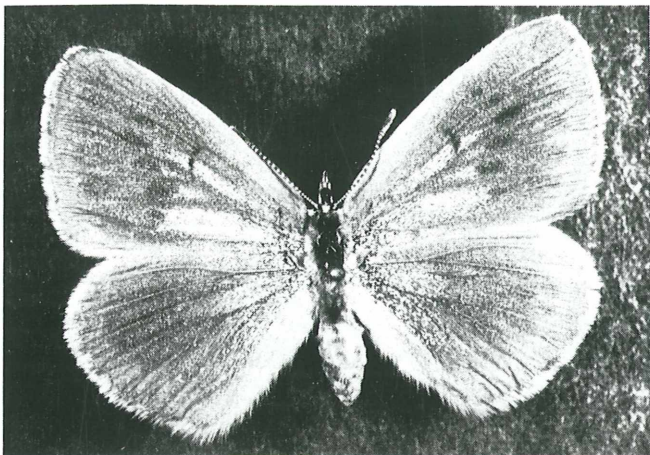
Upperside of wings greyish brown, totally ground coloured / rarely there are some specimens which has a few blue scales on the base of underwings /. Postdiscal spot line shining softly through.

Underside ground colour greyish brown with rufous shade. Submarginal pattern well marked. Postdiscal spots of fore wings smaller and rings darker as on hind wing. On the base single silvery green scales. Fringes grey.

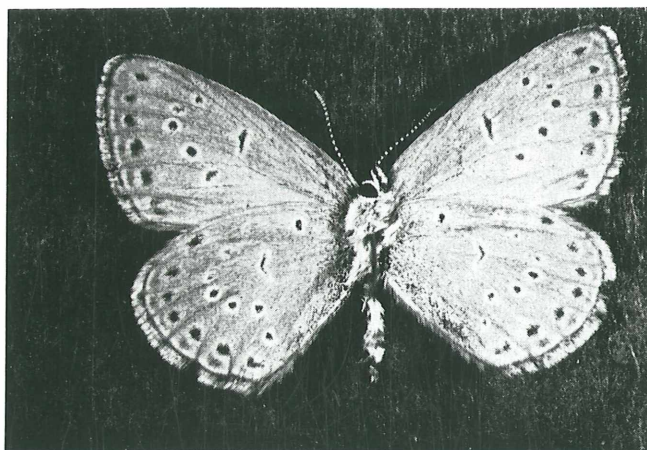
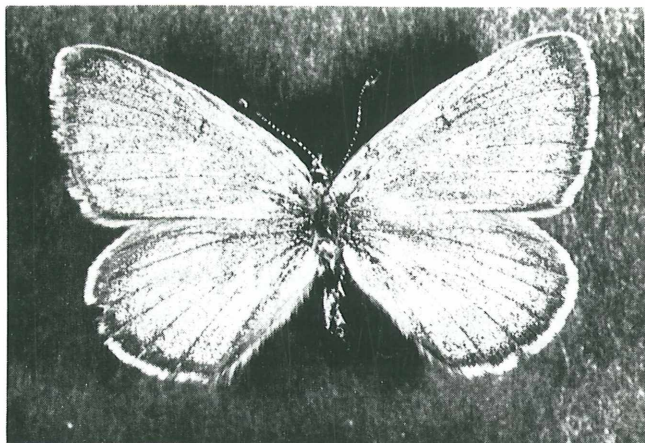
/ There is only one female specimen on the type series, whose basal area of upperside is blue /Erdély: Békás-szoros, Kupás-patak; 1980. VII. 21., leg. Bálint and Ronkay G./ Its wing form



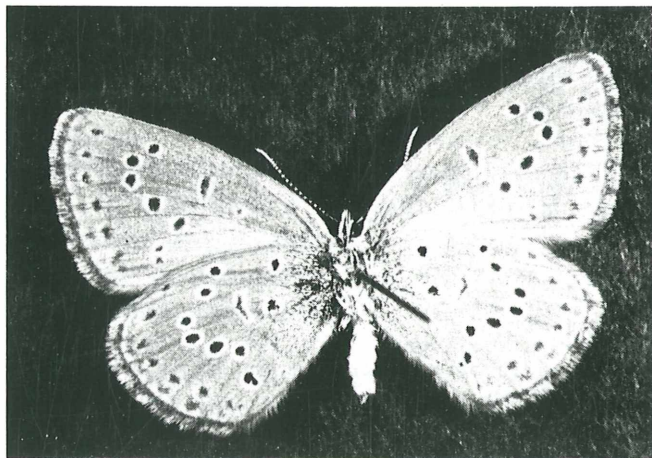
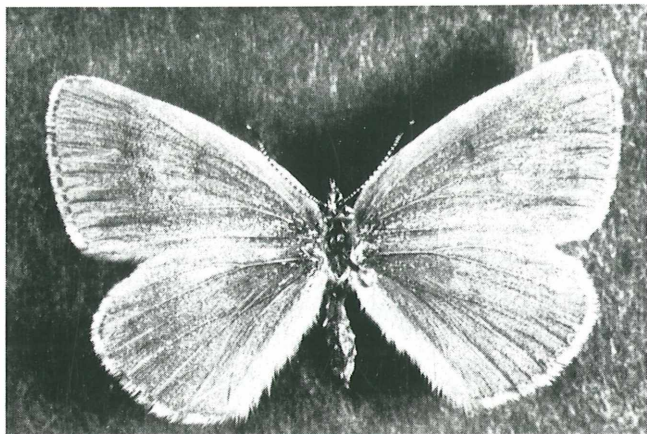
1. *Maculinea alcon alcon* D. & SCH. 1775 ♂¹
Budapest, Rómaifürdő; 1951 VII. 15., leg. dr. Szabó
underside



3. *Maculinea alcon alcon* D. & SCH. 1775 ♀
same locality data
4. underside

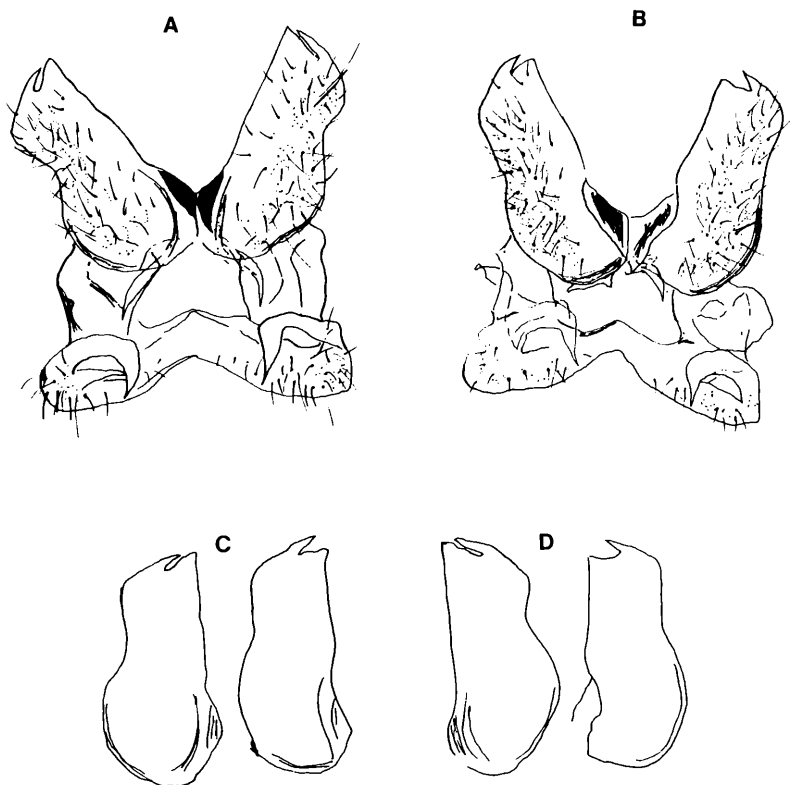


5. *Maculinea alcon limitanea* ssp. HOLOTYPE ♂
 6. underside



7. *Maculinea alcon limitanea* ssp. ALLJOTYPE ♀

8. underside



- A) male genitalia of *Maculineaalconalcon* D. & SCH.
Budapest, Rómaifürdő; gen. prep. Bálint, NO.
- B) male genitalia of *Maculineaalconlimitanea* ssp.
Transsylvania, Vargyasi-szoros; gen. prep. Bálint, NO. 17.
- C) left valva of *Maculineaalconalcon* and *Maculineaalconlimitanea*
- D) right valva of *Maculineaalconalcon* and *Maculineaalconlimitanea*

and underside is similar to the others. This variation is very
/

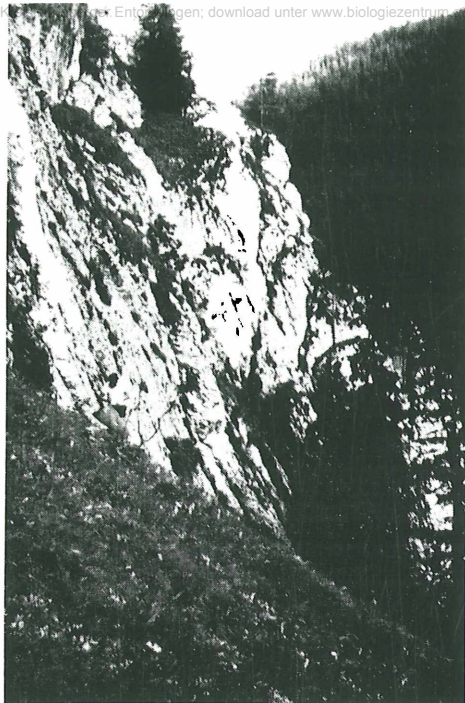
Male genitalia: Like alcon alcon. Its size similar, but valve narrower and apex not so curved. Terminal tooth of valve wider and shorter, terminal incision bigger.

Phenologic and ecologic notes

The habitats of limitanea nov. ssp. can be divided into three groups:

- 1/ subalpine xerophilous meadows on chalk and limestones
/rocky grass-slopes, talus slopes/
- 2/ montanic mesophilous meadows on volcanic stones
/meadow-lands wood clearings/
- 3/ hygrophilous meadows
/bogs, only two places in Gyergyó /Gheorghieni/ Basin,
Borzont and in Háromszéki Basin, Rétyi Nyír/ judetul Covasna

We met limitanea mostly on rocky grass-slopes and talus slopes /Persányi-hegység/Muntii Persani/, Békás-szoros /Cheile Bicazului/, where its flying period lasts from the first week of July to the beginning of August. The adults can be found in the surroundings of the foodplant Gentiana cruciata L. The butterfly fauna is rich: Parnassius apollo transsylvanicus SCHWEITZER 1912, Melitaea didyma ESP. 1779, Maculinea arion L. 1758, Plebicula dorylas magna BÁLINT 1985, Pyrgus alveus BHN. 1803 also flies here. On the mesophilous meadows /Csiszér, near Gheorghieni/ the new subspecies is living in a different butterfly association. Its interesting members in the aspect of July are the following: Clossiana titania transsylvanica TILTSCHER, 1913, Brenthis ino ROTT. 1775, Erebia ligea carthusianorum FRUHST. 1909, Palaeochrysophanus hippothoe eurydice ROTT. 1775, Plebicula dorylas magna BÁLINT 1985. Hardly anybody collected in its hygrophilous habitat where the specimens of limitanea are smaller. It is worthy of note that in the birch fen of Háromszéki Basin /judetul Covasna: Rétyi Nyír/ it flies together with Maculinea teleius BERGST. 1779 and Colias myrmidone ESP. 1781. This district is warmer as the Gyergyó /Gheorghieni/ Basin which is



9. 10. Rocky grass-slopes /Békás-szoros /Cheile Ricăzului,': Ku-
pás-patak/, habitat of *Parnassius apollo transsylvanicus*,
Maculinea alcon limitanea, ssp. *Maculinea arion*,
Plebicula dorylas

the coolest place of the Carpathian Basin. The females of alcon limitanea lay eggs on Gentiana pneumonanthe L. as it was observed by Sándor Kovács and Zoltán Kovács in Retyi Nyír.

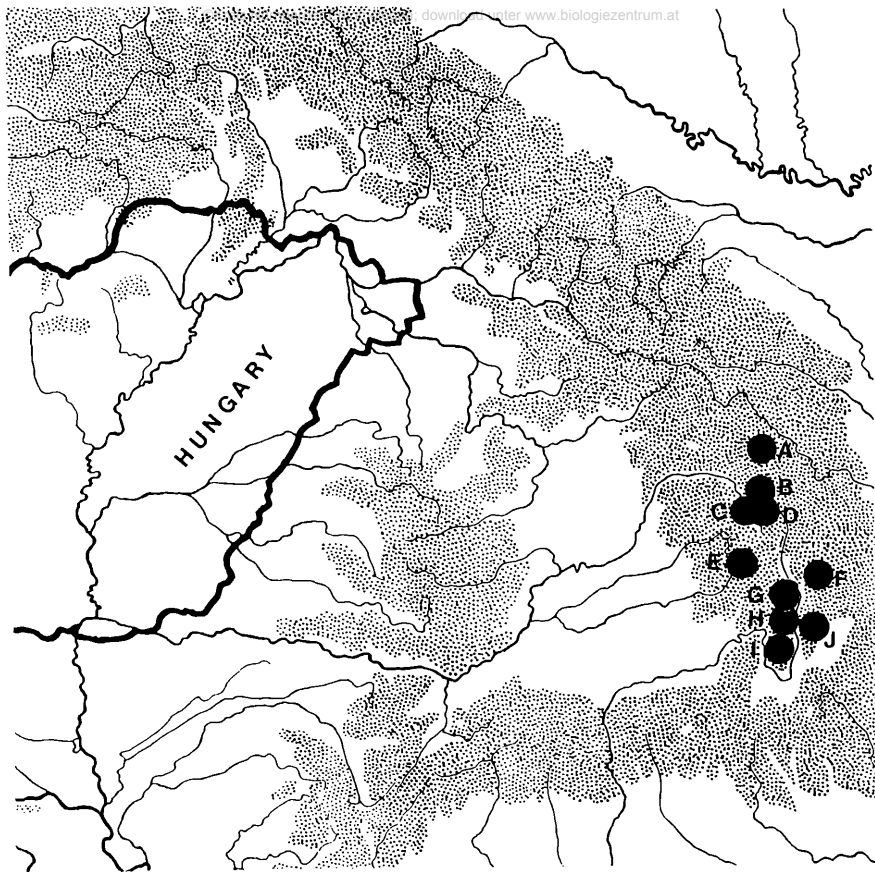
Nomenclatoric and taxonomic notes

Hormuzaki /1897/ mentions that Maculinea alcon is wide-spread and frequent in the hills of Bukowina, above 400 m. He lists many habitats from the Transcarpathians and describes a new aberration with the name ab. cecinae. He thought that the alcon populations of Bukowina belongs to the nominate race. He gives a description of a male alcon from the Rárau Mountains and he writes that this specimen may be a new "geographical race". The descriptions of the specimens from Bukowina and Rárau Mountains are not clear, so we can not know how far the habitat of limitanea ranges. The new subspecies resembles to ssp. sevastos RBL. & Z. 1934 which is described from Macedonia. But the wings of sevastos are wider, the ground colour of males is violet blue and that of females warm brown. The markings of the underside of sevastos is clearer, the rings and the spots are more distinct. Ssp. tolistus FRUHST. 1917 from Bosnia has a blue base on the females. Its description is similar to that of xerophila BERGER 1946 and curiosa SZABO 1956. I do not share the opinion of Varga /1961/ and Fazekas /1984/. They mention tolistus from Transsylvania and South Transdanubia. It does not occur in the Carpathian Basin.

Maculinea alcon still flies in many places in Transsylvania / Bálint 1980; Coichia & Barbu 1982; Czekelius 1917; Diószeghy 1939/30; Haltrich 1982; Kovács, S. & Kóvacs, 1982; König 1975 and 1982; Popescu-Gorj 1964; Rotschild 1912; /, but it's impossible to determinate their subspecific status because we do not have enough material.

Acknowledgements

I wish to express my gratitude to my wife Annamária Kertész for correcting the English manuscript, to Sándor Kovács and Zoltán Kovács / Sfîntu Gheorghe, Rumania/ for presenting their material



Distribution map of *Maculinea alcon limitanea*
Transsylvania, Rumania

- A) Gyergyótölgyes, Holló-patak
- B) Gyilkostó, Békásszoros
- C) Gyergyó, Borzont
- D) Gyergyó, Csiszér
- E) Székelyudvarhely
- F) Csíkménaság, Pottyond
- G) Tusnád
- H) Baróti-hegység
- I) Persányi-hegység:
Vargyasi-szoros
- J) Bodoki-hegység

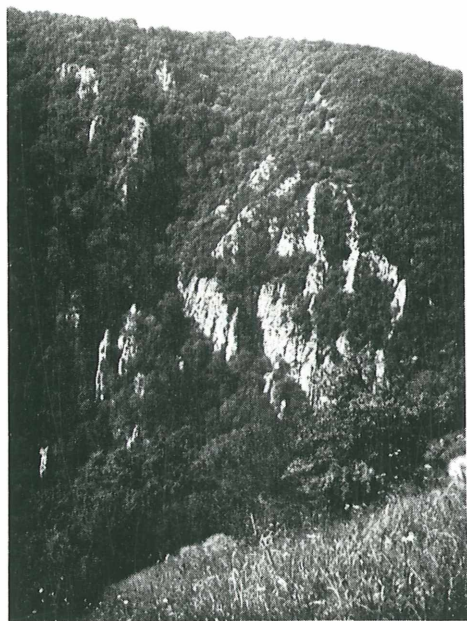
- Tulqhes, Valea Corbu
- Lacu Rosu, Cheile Bicazului
- Gheorghieni, Borzont
- Gheorghieni, Csiszér
- Odorheiul Secuiesc
- Armaseni, Potioud
- Tusnad
- Muntii Baraolt
- Muntii Persani:
- Cheile Virghisului
- Muntii Bodoc

and for their kind help, and also to László Peregovits for taking the photos.

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11. Vargyasi-szoros /
Muntii Persani:
Cheile Virghisului/
Locus-typicus of
Maculinea alcon
Limitanea n.

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Jahr/Year: 1985

Band/Volume: [1](#)

Autor(en)/Author(s): Balint [Bálint] Zsolt

Artikel/Article: [Maculineaalcon limitanea nov. ssp. / Lepidoptera: Lycaenidae / from Transsylvania, Rumania 62-74](#)