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Papilio alexanor ESPER from Italian Maritime Alps: a new subspecies

(Lepidoptera: Papilionidae)

by

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Riassunto: li autori descrivono *Papilio alexanor radighierii* nov. subspec. della Val Gesso (CN), Alpi Marittime Italiane. Vengono fornite alcune notizie sulla biologia ed ecologia della nuova sottospecie.

Abstract: A new subspecies of *Papilio alexanor* ESPER from Val Gesso (Cuneo Province), Italian Maritime Alps, is described and named *radighierii*. Some notes about its biology and ecology are given.

Introduction

The presence and distribution of *Papilio alexanor* ESPER in Italy have not been modified from 1927 until today, except for its confirmed presence in Sicily (HENRICKSEN, 1981) and the Italian Maritime Alps (BALLETO & TOSO, 1976). VERITY (1947) had reported the species in Sicily (Nizza di Sicilia), Calabria (S. Luca) and the oriental Maritime Alps. During some investigations into the Italian Papilionidae the authors, especially because of indications and the kind cooperation of ELVIO CORTESE and CAMILLO FORTE, put together a significant number of specimens collected in Val Gesso (Cuneo Province) and made observations about their larval and imaginal stages. The results of the morphological analysis compared with those obtained from the nominal subspecies and *P. alexanor destelensis* NEL & CHAULIAC, led the authors to conclude that the northern Italian population belongs to a new, undescribed subspecies:

Papilio alexanor radighierii subspec. nov.

Holotype: Piemonte, Valdieri (CN), 24.VI.1989, 600-800m, leg. G. SALA, in coll. SALA, Salò (BS).

External characters: Head: Frons medially black, yellow laterally, palps yellow. Antennae: black, distal third of the club yellow. Prothorax and metathorax dorsally black, laterally bordered with yellow, laterally and ventrally yellow. Abdomen dorsally and ventrally black, laterally yellow. Valvae black, Forewing length: 37.3 mm.

Upperside forewings: Ground colour deep yellow, more intense than that of *destelensis* and very different from the pale yellow colour of the nominal subspecies. Black marginal band (width: 2 mm) deeper and more contrasting in colour than that of *alexanor alexanor* and *a. destelensis*, and so all the other black bands. Black submarginal band with a more intense yellow scaling in the subcostal portion, exceeding R4-R5 branching off (width

7 mm at R5, 3 mm at 1A+2A). Black postmedian band 2 mm wide, median 3.8 mm wide, submedian 4.1 mm and basal 3 mm wide. Yellow submarginal band with well marked black veins, 2 mm wide. The coarsely comma shaped postmedian yellow band is wider on costa (width 2.5 mm at R4-R5 root, 0.8 mm at M2). Yellow median band 2.2 mm wide and submarginal one 3 mm in breadth. The triangular yellow postbasal band based at the anal margin and 4 mm broad at cellular vein. Black costa with yellowish suffusion basally and deeper yellow medially.

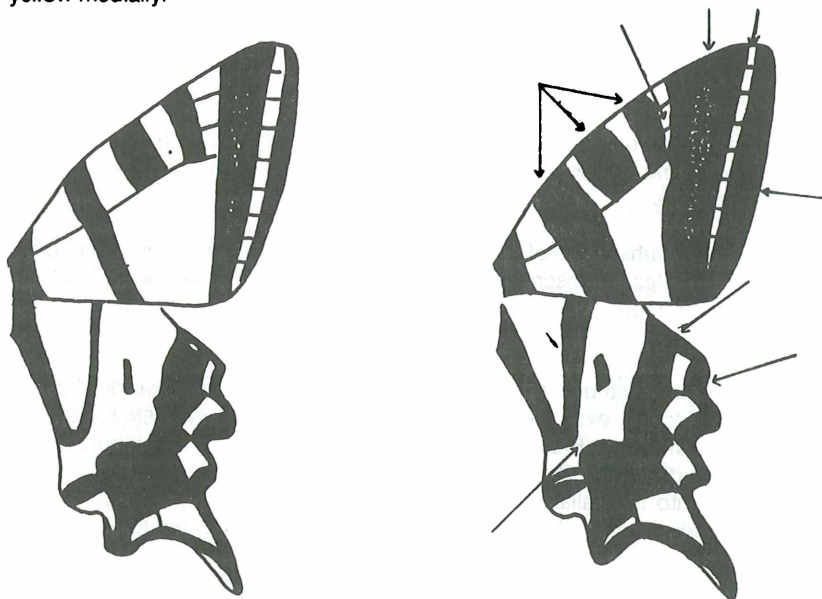


Fig. 1: Schematic difference between *P. a. alexanor* (A) and *P. a. radighierii* (B).

Underside forewings: deepless yellow ground colour, with the same pattern of upperside, but with a wider yellow submarginal band and black median band with median deep blue suffused scaling.

Upperside hindwings: ground colour as in forewings. Black marginal lunules wide (2 mm) and so the yellow submarginal ones. Black postmedian band broad (3.8 mm at SC+R1, 7 mm at CuA1), with a deep and bright blue scaling at ce CuA1-CuA2, deepless and thickless at ce M3-M2-M1. The coarsely rectangular shaped discocellular spot is 2 mm in breadth. Black submedian band wider at the costal margin, reaching the anal band in ce 1A+2A. The anal spot is ochre, and 2.5 mm in breadth.

Underside hindwings: like upperside, but paler in ground colour, and blue scaling is brighter and more intense.

Paratypes: 14 ♂♂, 7 ♀♀, Italia, Cuneo Prov., Val Gessò, Valdieri, 600-800m, VI.1985-1989, in coll. SALA, Salò (BS); 19 ♂♂, 16 ♀♀, idem, in coll. CORTESE, Cuneo; 3 ♂♂, 3 ♀♀, idem, in coll. DE CASTRO, Como; 10 ♂♂, 4 ♀♀, idem, in coll. BOLLINO, Lecce; 1 ♂, idem, in coll. CRNJAR, Cagliari; 4 ♂♂, 4 ♀♀, idem, plus 1 ♂, Val Stura (CN), in coll. FORTE, Torino; 1 ♂,

Alpi Marittime, Entracque (CN), 1100m, 19.VII.1961, leg. MORISI, in coll. GIACOMAZZO, Venice.

Derivatio nominis

The new subspecies is dedicated to Mrs. CLEMENTA RADIGHIERI, for her encouragement into the study of Italian Papilionidae.

Discussion

Papilio alexanor radighierii differentiates in the greater size of the males (\bar{m} = 37.5 mm) from *alexanor alexanor* (\bar{m} = 34.5 mm in our specimens, 34.01 mm in NEL & CHAULIAC (1983)), and from *alexanor destelensis* (\bar{m} = 36.03 mm (NEL & CHAULIAC, 1983)). Females of *radighierii* present a \bar{m} = 41.5 mm, much greater than that of *alexanor alexanor* (\bar{m} = 37.9 mm in our specimens, 37.64 mm in NEL & CHAULIAC (1983)), and very close, on the contrary to *destelensis* (\bar{m} = 41.23 mm (NEL & CHAULIAC, 1983)). The ground colour is a very deep yellow, deeper, especially in the females (colour plate XVII, fig. 2), than in *destelensis*, and very dissimilar from the straw-yellow colour of *alexanor alexanor*. The wider black bands are deeper in colour and more contrasting with the ground colour than in French subspecies (colour plate XVII, figs. 3a-3c). The general pattern of *radighierii* subsp. nov. very melanic is reminiscent the balcanic populations more than those beyond the Alps.

Distinctive characters of *radighierii* subsp. nov. (colour plate XVII, fig. 1): Forewings with very broad marginal and submarginal black bands, the latter always beginning before R4-R5 branching off. A constant and typical feature in nearly all *radighierii* specimens is the thin design of the yellow postmedian band that is comma shaped in ce R3 and ce R5 (it is missing in two extreme specimens). The three cellular black bands are wider than in nominal subspecies (black postmedian band, \bar{m} = 3.7 mm in male and 4.4 mm in female of *radighierii*, 3.1 mm in male and 3.8 mm in female of *a. alexanor*). Hindwings almost always (95% of our specimens) lacking the yellow submarginal lunule in ce SC+R1, on the contrary of nominal subspecies and *a. destelensis*. Moreover the yellow submarginal band is not so separated from the margin that the resulting black space is twice wider than in French subspecies. The black postmedian band at CuA2 is so broad that it nearly touches the apex of submedian one. In an extreme specimen the postmedian band is so broad that it merges the discocellular spot (colour plate XVII, fig. 4).

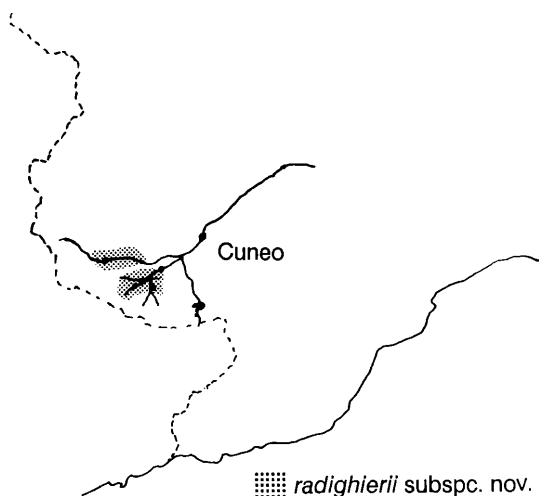
Distribution (see map)

Papilio alexanor radighierii subsp. nov. is confined, until today, to the eastern slopes of the Italian Maritime Alps, along the Torrente Gesso and Stura di Demonte Valleys (CORTESE collected some caterpillars at different stahes near Vinadio, 1000m in July 1990). Moreover we know that some specimens, collected at Limonetto, Molini di Trioria (Imperia Prov.), and Val Nervia, exist in private collections. As we did not succeed in examining such material, we do not include ligurian material in the distrubutional area of *radighierii* subsp. nov., as more investigations are needed and planned.

Biological notes

The habitats of *Papilio alexanor radighierii* are characterized by rocky slopes with high bent for erosion and landslip (colour plate XVIII, figs. 5-7). On such slopes the food-plant

Trinia glauca (L.) DUMONT grows. On its inflorescens only 3-4 eggs are laid, as the caterpillars feed on the flowers only and the plant does not grow very much. Sometimes, both *Papilio machaon* L. and *Papilio alexanor* caterpillars are found on the same plant, but only the former are parasitized (FORTE, pers. comm.). The flight period is very constant and covers the second half of June and the first half of July. The males, highly active during the warmest hours, fly vigorously along the slopes, then reascend and continuously repeat the same route, patrolling the area looking for the much less active females. The males do not show any territorial behaviour. They are rarely seen on flowers, mainly *Lavanda*, *Centaurea* and *Cardus defloratus*.



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Colour plate XVII (p. 369):

- Fig. 1: *Papilio alexanor radighierii* subsp. nov., holotype ♂, upperside
- Fig. 2: *Papilio alexanor radighierii* subsp. nov., paratype ♀, upperside
- Fig. 3: Differential pattern of a) *Papilio alexanor alexanor* ESPER, b) *Papilio alexanor radighierii* subsp. nov. and c) *Papilio alexanor destelensis* NEL & CHAULIAC
- Fig. 4: Extreme melanic specimen of *P. alexanor radighierii* subsp. nov.

1	2	4
3 a	3 b	3 c

Colour plate XVIII (p. 371):

- Fig. 5-7: Typical biotope of *P. alexanor radighierii* subsp. nov.: Valdieri (Cuneo Province), 800m, June 1990, photo by G. SALA.

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Colour plate XVII

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Fig. 1: *Papilio alexanor radighierii* subspec. nov., holotype ♂, upperside

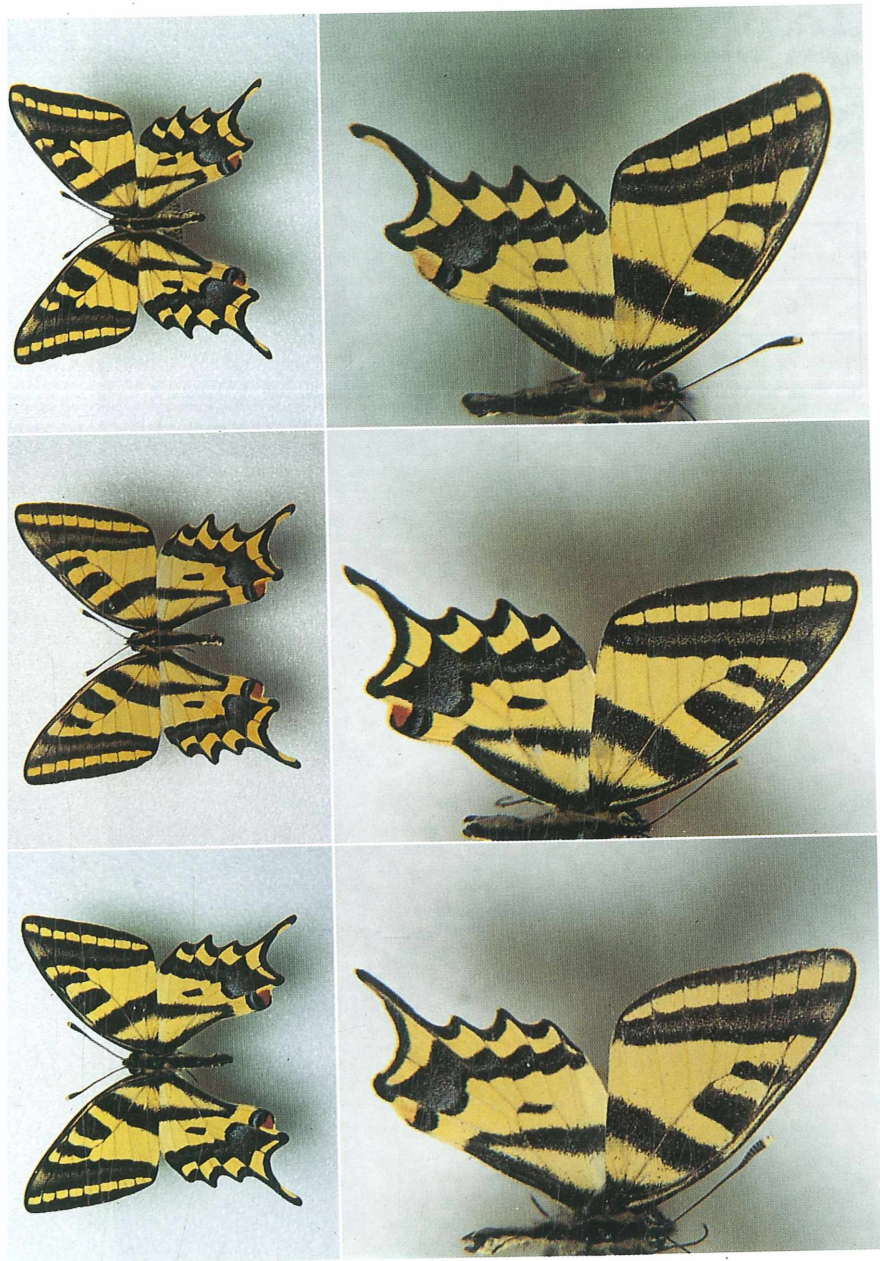
Fig. 2: *Papilio alexanor radighierii* subspec. nov., paratype ♀, upperside

Fig. 3: Differential pattern of a) *Papilio alexanor alexanor* ESPER, b) *Papilio alexanor radighierii* subspec. nov. and c) *Papilio alexanor destelensis* NEL & CHAULIAC

Fig. 4: Extreme melanic specimen of *P. alexanor radighierii* subspec. nov.

1	2	4
3 a	3 b	3 c

Colour plate XVII



Colour plate XVIII

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Fig. 5-7: Typical biotope of *P. alexanor radighieri* subsp. nov.. Valdieri (Cuneo Province), 800m, June 1990, photo by G. SALA.

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Colour plate XVIII



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