

Distribution and voltinism of *Lycaena dispar* Haw. (Lycaenidae) populations in Northern Italy

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The distribution of *Lycaena dispar* in Europe is very irregular, the species being connected with fens. Higgins and Riley (1975 : 243-244) distinguished *Lycaena dispar dispar* Haworth, which became extinct in 1848, for England, *Lycaena dispar batava* Oberthur for Holland and *Lycaena dispar rutila* Werneburg for France, Germany, Czechoslovakia, Hungary, Rumania, Bulgaria and Northern Italy. Verity (1943 : 60-61) knew this species from several localities of the Pianura Padana, Northern Italy (Fig. 1). This is referred to the race *rutilus* Werneburg.

A second colony known by Verity is at Versilia, on the Tyrrhenian coast of Central Italy (Prov. Lucca e Massa). The specimens collected in this locality have been described as a separate race *centralitaliae* Vrtv for they possess a very large orange submarginal band on the underside of the hind-wing which is extended, as in the race *batavus* Obth., from the anal angle to v6. (Fig. 2 ; Higgins and Riley, 1975 : 243-244).

I can confirm the continued presence of this beautiful butterfly in Versilia, in spite of the intense degradation of the environment that has occurred over the last few years in Italy. During the researches I have found *Lycaena dispar* very locally in fens some distance from the Tyrrhenian coast : ex-Lake of Bietina, small Lake of Sibolla, Fen of Fucecchio, Calambrone (Prov. Lucca, Pisa, Pistoia, Firenze). This shows that until the last century, before the great land reclamations, the species was probably widespread in the large marshy area of the inferior basin of the Arno river.

I have made a second very important observation concerning their voltinism. Higgins and Riley give only a single generation in June-July for *Lycaena dispar batava* ; two for *rutila* in May-June and in August-September. Verity also gives two generations for *Lycaena dispar rutilus* : the first from May to July, the second in September. Verity has always found a first generation of the race *centralitaliae* Vrtv in July and a second in September, stating that in Versilia *Lycaena dispar* has never been collected in June. I have discovered that in all the localities of the



FIG. 1. – Northern Italy. Scale 1 : 5.000.000. 1. Versilia ; 2. Ex-Lake of Bientina ; 3. Small Lake of Sibolla ; 4. Fen of Fucecchio ; 5. Calambrone.

- Localities described by Verity.
- New localities described by the author.

Arno basin and in Versilia, the race *centralitaliae* in fact shows three generations. The first in the last half of the may, the second in the last half of july and the third in september. The three distinct generations further characterize the race *centralitaliae* Vrtý.

The subject of this paper is the result of many years of research. The first specimens were collected in the various localities, respectively : Versilia, september 1969 ; Sibolla, september 1970 ; Fucecchio, may 1974 ; Bientina, may 1976 ; Calambrone, september 1980.

This is a local species inhabiting fenland, a habitat that is rapidly being lost to agriculture and industry. Consequently, individual colonies are becoming more and more isolated. Special efforts should therefore be

made to ensure the continued existence of this butterfly and its habitat. *Lycaena dispar* is perhaps most abundant, very locally, in the fens of Fucecchio, where it is important to protect the distinct race *centralitaliae* Vty. from the rapidly encroaching land reclamations.

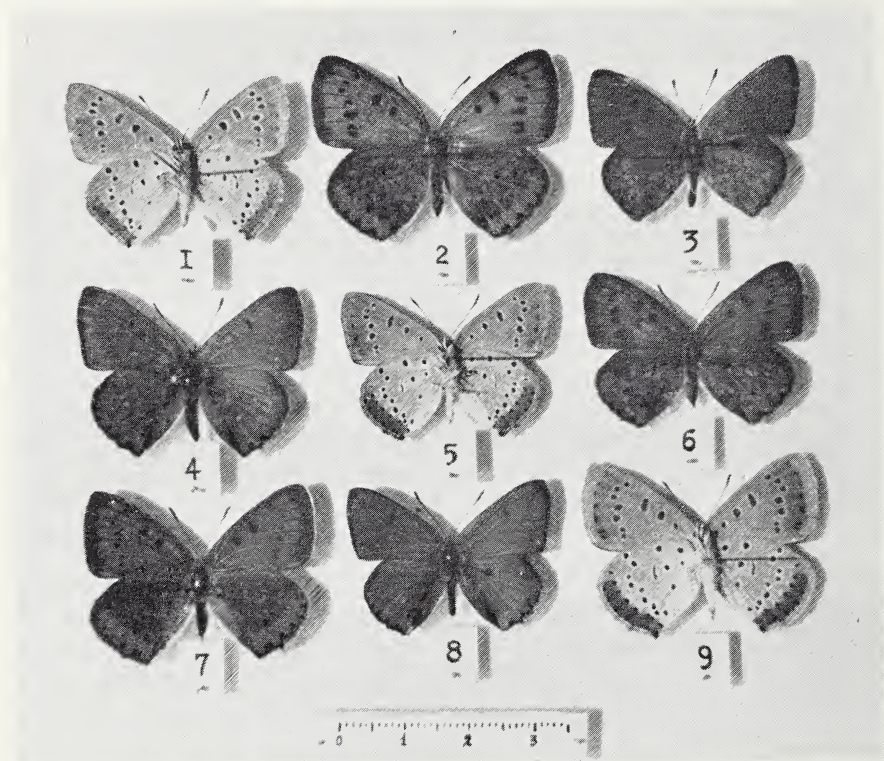


FIG. 2

First generation :

1. ♂ Fen of Fucecchio (Prov. Firenze) – 15/5/76.
1. ♀ Fen of Fucecchio (Prov. Firenze) – 26/5/74.
3. ♂ Fen of Fucecchio (Prov. Firenze) – 15/5/76.

Second generation :

4. ♂ Fen of Fucecchio (Prov. Firenze) – 20/7/75.
5. ♂ Fen of Fucecchio (Prov. Firenze) – 16/7/77.
6. ♀ Fen of Fucecchio (Prov. Firenze) – 20/7/75.

Third generation :

7. ♀ Calambrone (Prov. Pisa) – 8/9/80.
8. ♂ Ex-Lake of Bientina (Prov. Lucca) – 10/9/78.
9. ♀ Lake of Porta-Versilia (Prov. Massa) – 9/9/69.

Verity, R., 1943. Le farfalle diurne d'Italia, II. Marzocco, Firenze.

Higgins, L. G., N. D. Riley, 1975. A field guide to the Butterflies of Britain and Europe. Collins, London. 3rd edition.

Résumé

Lycaena dispar Haw. ne se trouve que dans peu de localités en Italie du Nord. La race *centralitaliae* Vrtý, connue dans la Versilia (Côte Nord de la Mer Tyrrhénienne), a été capturée par l'auteur dans de nouveaux biotopes, dans le bassin inférieur du fleuve Arno.

Les générations sont au nombre de trois, et non pas deux, communément connues : la première en mai, la deuxième en juillet et la troisième en septembre.

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