

The studies by H. C. Gunton over the period 1919 to 1937 provided a reference work on the factors influencing emergence dates for macrolepidoptera. (Gunton, H. C. 1938. *Nature Study Above and Below the Surface*. London. Publisher H. S. & G. Witherby.) One of his conclusions was:— “— From a careful examination of the records of different years it appears that while, in the absence of exceptional drought, excess temperature is the principal factor in producing earliness, the maximum degree of earliness is often found to occur during a warm period which coincides with, or follows shortly after, a wet period.” Another was:— “--Early emergences depend on the occurrence of a warm period within a certain time distance in advance of the normal date for appearance.” *Argiolus* was one of 50 species he studied and his normal date was 30th. April; his earliest date was 2nd. April, but “time distance” was not quantified. Perhaps a month or 5 weeks would seem appropriate? (I once saw *argiolus* at Malvern in late March).

Thus the ‘Malvern blue’ in January 1983 conformed with Gunton’s deductions apart perhaps from the extreme earliness. However, since a holly blue of a third brood is occasionally seen in a warm October — which would normally remain in the pupa state until the following spring — it is foreseeable that a most exceptional warm period during the winter months might stimulate emergence. I should be interested to learn of any records for the months November — February, in order to further study the meteorological factor.

My grateful thanks to Mr. Frank Hill for his invaluable help, without which this analysis could not have been made. — J. E. GREEN, 25 Knoll Lane, Poolbrook, Malvern, Worcs, WR14 3JU.

VANESSA CARDUI L. AND HYLES LIVORNICA ESP. IN NORTH AFRICA, APRIL 1985 — Further to the article by P. A. Davey (*Ent. Rec.* 97: 165-167) on the immigration of the above species in 1985, the following observations may be of some interest : I was on holiday in Morocco from 4th to 18th April, first in Marrakesh and then Agadir. Both *cardui* and *livornica* were extremely common. On April 5th, and for a few subsequent days, I noted at Marrakesh “. . . clouds and clouds of *cardui* on the waste ground near my hotel . . . ” They appeared to be flying S. W., and maintained this movement for several days. The painted lady was also common in Agadir a few days later, but here *livornica* was the dominant species, swarming over flowers in the hotel gardens on 15th April. I noted “. . . lots of striped hawks washed up in the surf on the beach . . . ”, and the moth was also abundant around the light outside my room. It is probable that these insects were part of the migration that eventually reached the U. K. D. HALL, Lichfield School, The Palace, Lichfield, Staffs.



Hall, David. 1986. "Vanessa cardui L. and Hyles livornica Esp. in North Africa, April 1985." *The entomologist's record and journal of variation* 98, 40–40.

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