

English form; those bred by Mr. Lorimer seem to substantiate this.

I drew attention to the fact that the ruby tiger has a series of black spots upon the dorsal aspect of the abdomen, and not a stripe. The second Orcadian specimen to emerge possessed a broad black dorsal abdominal stripe! I believe this to be an uncommon form, but which can only be identified before the insect dries out after death.

Although *fuliginosa* appears to be bivoltine in Counties Cork and Kerry, J. Bradley and E. C. Pelham-Clinton (*Ent. Gaz.* 18:115) produce evidence that it is single brooded in the Burren of Co. Clare, flying in May and June, although they do not indicate whether by day or by night.

On September 25th 1986 I found several *fuliginosa* larvae on spindle (*Euonymus europaeus*) near Swanley, Kent; they completed their growth on this. In view of the observation that many Arctiid moths tend to lay their eggs on shrubs (M. Shaw: *Ent. Rec.* 97:31) although the larvae feed mainly upon herbaceous plants, this particular incident seems worth recording. — B. K. WEST, 36 Briar Road, Bexley, Kent.

ZOROCHROS MINIMUS (BOIS. & LAC.) (COL.: ELATERIDAE) AT THE TOPS OF MOUNTAINS. The usual place to find *Z. minimus* (= *Cryptohypnus dermestoides* Herbst) is in gravel, under small stones or mats of vegetation at the sides of streams and rivers. In Scotland, it is widespread in this habitat and often very common, especially in the highlands. On two occasions I have come across the species in a different habitat — the tops of mountains. The first of these was in July 1974, when I found a number of examples near the summit of Ben More Coigach, Wester Ross (NC095045 alt. 742m) under small stones in an area practically devoid of vegetation. The second was in July 1983, when I met with the species near the top of Quinag, West Ross (NC205280 alt. ca. 700m), again under small stones on a gravelly base. The only previous mention I have found of this species occurring at high altitude in Britain is by Steel and Woodroffe (1969, *Trans. Soc. Brit. Entom.* 18: 91) who reported its occurrence at the roots of thyme at 634 m on Hallival on Rhum.

The finding of these specimens in an unusual habitat, together with the report of *Z. flavipes* (Aube) in Britain (Cooter, J. 1983 *Entomologist's mon. Magazine* 119:233) made me compare my high altitude specimens carefully with specimens found at low altitudes. In doing this, I have examined in all about 150 specimens from about 20 different sites in highland and lowland Scotland and have dissected many of them. These have included a large series from the Dorback burn site from which my friend Mr. Cooter obtained his specimens of *Z. flavipes*.

All I can state at this stage is that the mountain top specimens



fall within the considerable range of size, form and coloration, shown by low altitude examples, a variation often quite marked among examples collected at the same time from the same site. I cannot appreciate the presence of more than one species but whether my material constitutes *Z. minimus* or *Z. flavipes* is a matter for further study. I have shown the mountain specimens to my friend Mr. Mendel and he likewise could see no consistent difference between them and my low altitude specimens.

It is just conceivable that the mountain top colonies are sufficiently isolated to represent a stage in speciation but confirmation of this would seem beyond present day attainments. It may be relevant that all three mountains have high rainfalls, that on Hallival exceeding 3200 mm (130 in) annually, which could make a mountain top habitat less different from low lying streamsides than might at first be apparent.

I thank Mr. Howard Mendel for his comments on my specimens. J. A. OWEN, 8 Kingsdown Road, Epsom, Surrey KT17 3PU.

PSEUDATEMELIA JOSEPHINAE TOLL (LEP.: OECOPHORIDAE)  
IN CUMBRIA — This species, long confused with *P. flavifrontella* D. & S. seems first to have been recorded in Britain by P. A. Goddard (*Ent. Rec.* 78: 239; *Bull. amat.Ent.Soc.* 25: 88). D. J. L. Agassiz (*Proc. Trans. Br. ent. nat.Hist.Soc.* 13:83-84) provides taxonomic details for separating the two species and includes good figures of the genitalia of both sexes.

My Cumbrian records under *flavifrontella* all come from v.c. 69 — there being no records of either species from v.c.70 — are as follows: Windermere (J. B. Hodgkinson — Ellis List, 1940); Grange-over-Sands (A. E. Wright); Arnside, 1930 (H.C. Heyward teste A. E. Wright); Witherslack, 1970 (R. Fairclough); Yewbarrow (H. N. Michaelis); Witherslack and Roudsea Wood NNR (N. L. Birkitt); Ulverston (E. F. Hancock) and Glencoyne Wood, near Ullswater (G. A. K. Hervey).

I have in my possession the specimens from the A. E. Wright collection and have examined the genitalia of these, as well as my own specimens with the following results: Grange-over-Sands 18.vii.1917 (male) and 24.vii.1935 (male); Roudsea Wood NNR 28.vi.1959 (female); Witherslack 6.vii.1961 (female) all proved to be *josephinae*. Of the four specimens in the A. E. Wright collection under *flavifrontella*, only one has an abdomen, which proved to be a female of this species. It is worth noting that all of these four specimens are without data labels, and are mounted on old fashioned brass pins. It is unlikely that they are Cumbrian specimens.

Of the other records, Mr. Fairclough (*in litt*) confirms that his Witherslack specimen is in fact *josephinae*, as is Mr. Hancock's specimen; a Cumbrian female taken by H. N. Michaelis (in the Man-



Owen, J. A. 1987. "Zorochros [Zorochrus] minimus (Bois. & Lac.) (Col.: Elateridae) at the tops of mountains." *The entomologist's record and journal of variation* 99, 230–231.

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