

**REDESCRIPTION OF THE PUPAL EXUVIAE OF *POTTHASTIA MONTIUM* EDWARDS (= *IBERICA* SERRA-TOSIO SYN. NOV.)  
(DIPTERA: CHIRONOMIDAE)**

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In the key to the pupal exuviae of British Chironomidae (Langton, 1984), a pupal form widespread in hilly regions in Britain is identified as *Potthastia montium*. That identification was little more than a calculated guess: the hypopygium of the only reared specimen (leg. A. Brennan) is identical to that described for *iberica* by Serra-Tosio (1971), but the absence of any pupal form for *montium* in collections from suitable regions of Britain suggested synonymy. In 1987 Dr P.S. Cranston at the British Museum (Natural History) remounted the hypopygium of one of Edwards' specimens in the presence of one of the authors (P.H.L.), which showed it to be similar to that of described *iberica*. Professor B. Serra-Tosio has compared the reared specimen of *montium* with his *iberica* and confirms that they are the same species.

*P. iberica* was described by Serra-Tosio from a single male collected near Grenade in the Spanish Pyrenees. In 1985, Doughman described the pupal exuviae of *iberica* from material collected in Georgia, Idaho and Wyoming in the USA. Here we give a redescription of the exuviae of *montium* (= *iberica*) from material collected in the French Pyrenees and Britain.

**REDESCRIPTION OF PUPA (N=10)**

Total length of male exuviae 6.05–6.30 mm, of female 6.85–6.95 mm. Length of abdomen; males 4.60–4.72 mm, females 4.95–5.05 mm. General colour brownish in French populations, golden in British populations. Thorax with a dark median transverse band. Abdominal segments VI–VIII darkened laterally. Frontal apotome (Fig. 1): frontal setae 206–209 µm long, 102–111 µm apart. Thorax (Fig. 2) without granulations; with two median and one anteprenotal setae (95–96 µm long), three dorsocentral setae (dcs2 and dcs3 66–72 µm long, dcs4 66–81 µm long; dcs1 missing) and two metanotal setae (37–39 µm, 51–54 µm long), without supraalar and prealar setae. Abdomen (Figs 3,4). Lateral setae of segments I–VIII: 3,4,4,4,4,4,2; lateral, dorsocentral and ventrocentral setae on segments VII and VIII simple or branched. Shagreen present on tergites II–VIII and sternites I–VIII arranged as on Figs 3 and 4. Apical bands of spinules present on tergites II–VI, the spinules larger than the posterior points of the tergite shagreen. Posterior angle of segment VIII acute.

Anal segment (male Fig. 5, female Fig. 6). Apical projection of anal lobes triangular, sclerotized and overreaching the lobe by 30–33 µm; 10–15 small sharp teeth present anterolaterally at the insertion of the anal macrosetae; macrosetae short (197–230 µm long), stout, not curved at apex. Male genital sac somewhat conical. Female anal segment more sclerotized than male.

**MATERIAL EXAMINED**

France: 4 ♂, 3 ♀ pupae; 31 ♂, 36 ♀ pupal exuviae. French Pyrenees: St Engrace



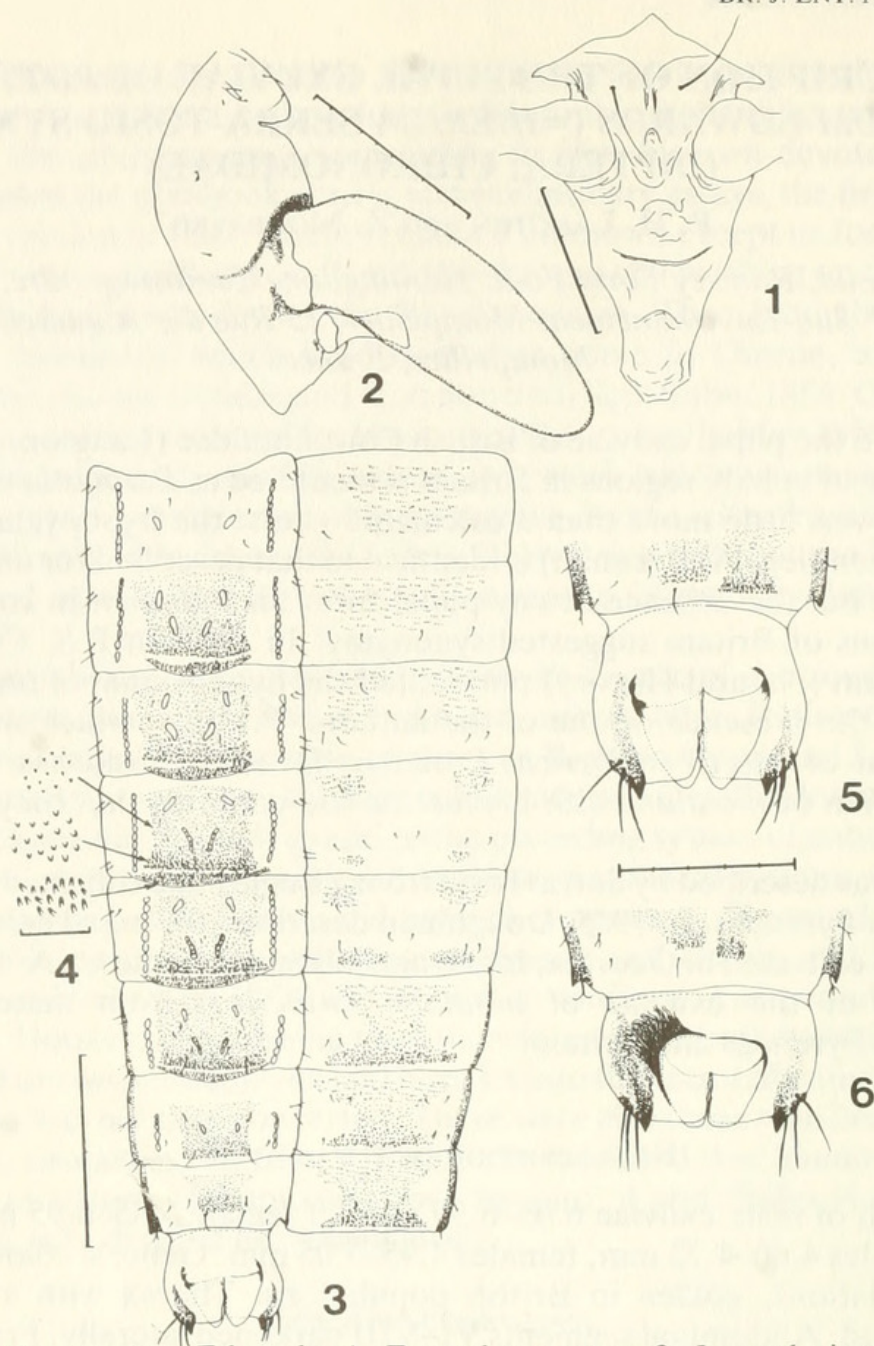


Fig. 1-6. *Pottastia montium* Edwards. 1. Frontal apotome. 2. Lateral view of thorax. 3. Abdominal armament; dorsal on left, ventral on right. 4. Detail of the armament of tergite IV. 5. Male anal segment; dorsal on left, ventral on right. 6. Female anal segment; dorsal on left, ventral on right. Scale line divisions on Figs 1, 2, 5 and 6, 0.1 mm; on Fig. 3, 0.5 mm; on Fig. 4, 0.01 mm.

River, 310 m, Larrau and Saison Rivers, 330 m and 220 m, 15/16.vi.87; Asped River, 650 m, 29.ix.88.

Wales: 3 ♀ pupal exuviae, Lake Bala, 160 m, 28.v.78; 1 reared ♂, River Wye, iv.82 (leg. A. Brennan).

Scotland: 6 ♂, 3 ♀ pupal exuviae. River Don, Dyce, 30 m, 23.viii.82; River Tummel, Balanluig, 80 m, 26.v.88; Carie Burn, Rannoch area, 270 m, 14.v.85 (leg. J. Foster & S. Hogg); River Tay, Kinclaven, 40 m, 26.v.88.

England: 1 ♂, 3 ♀ pupal exuviae, River Duddon, Boothe Holme, 60 m, and Duddon Bridge, 5 m, 13.vi.77 (leg. R.S. Wilson).

#### ACKNOWLEDGEMENTS

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 BOOK REVIEW

**The moths and butterflies of Great Britain and Ireland, Vol. 7, Part 1, Butterflies**, edited by A.M. Emmet and J. Heath. 380 pages, 24 colour plates, Harley Books, £49.50.—Originally planned to include some of the larger moths, the sheer wealth of available information on butterflies meant that an entire book would be required to do it justice and the moths were excluded. Thus we have what is intended to be the foremost reference on butterflies for the next few generations and really the last since South in 1906.

The first chapter gives an interesting account of the early literature and naming of butterflies, and the second deals with the topic of insect introductions/reintroductions. This is a subject not devoid of objectors and an entire chapter in a volume intended to last many years may seem to be overkill. An objective assessment shows it to be a learned and instructive read, detailing successful and failed butterfly introductions with careful consideration of the ecological factors involved. The subjective view of this reviewer is that this is a critical part of the book. Distribution and life histories of our butterflies are now pretty clearly understood and the study of butterflies is shifting from these areas to the wider concept of ecology. It is now vital that the requirements of butterflies are understood as suitable habitats decline and planned habitat management is the only way to protect many colonies. The studies of Jeremy Thomas and his colleagues detailed in this chapter illustrate the huge strides made in understanding butterfly ecology in recent years and whether or not one approves of introductions it is often only through them that the theories and practical applications of butterfly management can be tested, and it can only be to the benefit of our fauna that such work continues. We must hope that by the time this book is out of date the principles of ecology detailed here will be widely understood and practised.

The general text deals with each species on the British list and a number of others recorded very occasionally. The specialist knowledge of many entomologists has been employed in a great task of coordination, each species being dealt with by one or more of its own experts. There is a description of the imago and its variation, details of the life history and distribution (with the standard 10-km square maps) and a summary of the vernacular names in history. Each is dealt with in a thorough and scholarly manner (the 'full story' of the life history of *Maculinea arion* being especially so) as befits such a well studied group of animals. A few errors have crept into the text: one relates to *Argynnis paphia* in which it is stated that f. *valezina* 'occurs regularly in the New Forest but rarely elsewhere', echoing similar statements in earlier references. *Valezina* occurs regularly in other areas (Dorset and Wiltshire from personal experience) and whilst it was undoubtedly once most frequent in the New Forest, *paphia* itself is now almost a rarity in the Forest and *valezina* must be rarely seen. Two other small points relate to aberrations—ab. *bernhardi* of *Boloria*





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