Text-figs 1-3. Diagnostic characters (indicated) of European *Lythria* species. Text-fig. 1: *L. purpurearia* (Linnaeus, 1758). Text-fig. 2: *L. cruentaria* (Hufnagel, 1767). Text-fig. 3: *L. sanguinaria* (Duponchel, 1848).

**REMARKS:** Considered a subspecies of the preceding species since Zerny (1916). Rank as separate species justified by constant differences in wing pattern, in genitalia of both sexes and by molecular evidence (Öunap et al. 2008; 2009).

**Subfamilia Larentiinae** Duponchel, 1845

Currently validated, according to different concepts, with 19 to 23 tribes (Siivonen et al. 2011; Viidalepp 2011), 412 genera and 6,230 described species (Scoble & Hausmann 2007), more than 1,360 species belonging to the mega-diverse genus *Eupithecia*. Distributed worldwide, even on Iceland and Greenland (Wolff 1964), but absent from the Antarctic (as with all other Lepidoptera) and from some smaller islands of the Pacific. In the Palaearctic region represented by more than 1,500 species (Scoble et al. 1995), in Europe by 415 species, 151 of them treated in GME4 (Mironov 2003). Important revisionary papers and treatments at tribe and subfamily scale (Perizomini and Eupitheciini excluded): Choi (1997; 2001; 2002a; 2002b; 2003; 2006); Xue & Zhu (1999); Holloway (1997), Viidalepp (2006; 2011).

**NATURE HISTORY:** Name and concept for the subfamily were introduced in the 19th century (cf. Fletcher 1979) but its early diagnoses and delimitations are inadequate from the present point of view. The Linnean genus *Geometra* was repeatedly subdivided by many authors during the first half of the 19th century. Duponchel (1845) was one of the first authors to use French names for genus groups, and four of these – Eubolites, Cidarites, Larentites, and Melanthites – refer to Larentiinae in the modern sense. Later on, Guenée (1858) reorganized Duponchel’s groupings into the Larentidae and Eubolidae. Both Herrich-Schäffer (1843-1856) and Lederer (1853) substantiated the subdivision of Geometridae by using characters of wing venation. After validation in Staudinger’s catalogues (Staudinger 1861; Staudinger & Wocke 1871; Staudinger & Rebel 1901), Lederer’s system was generally accepted in mainland Europe. English-speaking countries, however, chose another way to approach the systematics of Larentiinae: Packard (1876) separated and described Larentiinae and Operophterinae at subfamily rank. Meyrick (1892) subdivided his superfamily “Geometrina” (loomer moths) into six families, the Hydriomenidae, Monocteniidae, Orthostixidae, Sterrhidae, Geometridae and Selidosemidae and was followed by numerous authors. Warren (1893, 1894) recognized six family-rank groups (e.g. Asthenidae, Hydriomenidae, Ortholithidae) within Larentiinae but was largely ignored by subsequent authors. Pierce (1914) divided the family Geometridae into two main groups, “Gnathoi” and “Agnathoi”, the latter including
Acadiinae, Cosymbiinae, and 12 subdivisions referring to the current concept of the subfamily Larentiinae: Astheninae, Oporiniinae, Eupitheciinae, Melanthiinae, Philereminae, Lobophorinae, Entephriniinae, Cidariinae, Therinae, Epirrhoinae, Xanthorhoinae, Ortholithinae and Chesiadinae.

Both English and German trends were synthesized in the early 20th century by L.B. Prout in his treatment of the Geometridae edited by A. Seitz (Prout 1912-1939). In the following years lepidopteran systematics and taxonomy shifted from external features to the analysis of genitalic characters. The shift, however, was controversial, with many entomologists being reluctant and fighting against usage of genitalia traits because of the unaesthetic and semi-destructive implication of this method requiring the separation of the abdomen from the voucher. One century later we have seen a similar reluctance against DNA analyses and DNA barcoding which will bring, however, a similar shift in geometrid systematics. The American school has been, through Forbes (1948), the first to propose a tribal classification of the subfamily, dividing Larentiinae into nine tribes based on characters of adult specimens. McGuffin (1958) tested this subdivision using larval and pupal characters. Herbulot (1961-1963) classified Larentiinae into fourteen tribes in his checklist of French Geometridae. The basic principles and diagnoses of Herbulot’s system have never been published but his arrangement of genera has been developed, and extended by Schmidlin (1964), Viidalepp (1976-1979, 1996), and accepted by a broad range of modern authors (e.g. Müller 1996; Leraut 1997). Until very recently tribe systematics in Larentiinae has been strongly biased towards concepts developed from the western Palaearctic fauna, i.e. 17 of the 18 Larentiinae tribes recognized in the ‘tribal classification’ of Heppner (2005) are based on genera distributed in Europe. As recently as 2002, Xue & Scole state ‘that the tribal classification of Larentiinae as a whole remains significantly unresolved. It has developed largely from a series of regional studies.’ At the 4th Forum Herbulot meeting 2006 in Tasmania, however, both S.W. Choi and J. Viidalepp presented updated, morphology-based analyses and insights into the subdivision and tribe systematics of Larentiinae, somewhat expanding the view to a global scale (Choi 2006; Viidalepp 2006). Another, slightly modified system with 23 recognized tribes is presented by Viidalepp (2011), still biased towards Europe with just three tribes not being distributed in Europe.

Differential diagnosis: The delimitation of the subfamily is insufficiently defined accord-