

SCIENTIFIC NOTE

**Notes on the taxonomy and status of the genus *Hesperia*
(Lepidoptera: Hesperiiidae) on Vancouver Island**JAMES W. MISKELLY¹

The genus *Hesperia* includes five species in British Columbia (BC), the most widely occurring of which are *Hesperia comma* (Linnaeus) and *Hesperia colorado* (Scudder) (Layberry *et al.* 1998). Although *H. comma* and *H. colorado* have sometimes been considered conspecific (Guppy and Shepard 2001), most recent authors recognize them as distinct species (Layberry *et al.* 1998, Pyle 2002, Acorn and Sheldon 2006). *H. comma* is presently considered to be a holarctic species found throughout the boreal forest in North America, extending into southern BC at higher elevations, with *H. colorado* occurring throughout the western United States and ranging north into southern BC (Guppy and Shepard 2001). In the northern part of its range, *H. colorado* generally occurs in dry grassland at low elevations (Layberry *et al.* 1998, Acorn and Sheldon 2006). Apart from differences in habitat, the two species may be distinguished by differences in size and in the colouration of the ventral hind wings.

On Vancouver Island (VI), *Hesperia* skippers live in two habitat types: dry meadows at low elevations on the southeast of the island and in natural meadows and disturbed areas in upper montane to alpine zones. There are few recent records from low elevations and few records at all from high elevations. *Hesperia* skippers on VI were once considered *H. comma manitoba* (Hardy 1954), but, more recently, they have been considered *H. colorado oregonia*, which is found west of the Cascade Mountains from VI south to northern California (Layberry *et al.* 1998, Guppy and Shepard 2001). Until now, the scarcity of specimens from the mountains of VI has prevented a comparison of the high and low elevation populations in series.

Between 2006 and 2008, a series of eight specimens (seven male, one female) of *Hesperia* skippers from subalpine habitats at five locations on VI was obtained by combining new collections made by the author with material borrowed from the research collection of Crispin Guppy. These were compared to the 24 male specimens from low elevations that are held in the entomo-

logical collection of the Royal British Columbia Museum in Victoria. Based on the colouration of the ventral hind wings, the mountain populations are clearly *Hesperia comma*. Compared to lowland specimens, mountain specimens have a darker base colour on the ventral hind wings, with medial markings that are white rather than light yellow (Figure 1). On the dorsal surface, the brown margins are wider and darker on mountain specimens and the apical spots within the margins are smaller. Mountain specimens are also consistently smaller. The average fore wing length is 12.5 mm (range 12.0 mm – 14.0 mm, n = 7) for male mountain specimens, compared to 14.5 mm for male lowland specimens (range 13.6 mm – 15.2 mm, n = 24). The high-elevation specimens are consistent in size and colouration, despite being collected from an altitudinal range of over 500 metres. Similarly, the morphology of the low elevation specimens is consistent; there are no trends in size or colouration along gradients of altitude or latitude.

Hesperia skippers on VI, therefore, represent two species, *H. colorado oregonia* at low elevations and *H. comma* (subspecies undetermined) at high elevations. *H. colorado oregonia* has been collected from at least 17 locations, but has been recently confirmed at only two of these (Table 1). It is believed to be extirpated from at least eight of the historic locations (Miskelly, unpublished data). It is associated with Garry oak (*Quercus garryana*) ecosystems, which have been reduced to less than five percent of their historic coverage and are declining rapidly due to urbanization (Fuchs 2001, Lea 2006). *Hesperia colorado oregonia* is apparently very rare in Canada. *Hesperia comma* is probably widespread in the mountains of VI, though more sampling is required to confirm its status and determine to which subspecies it belongs. Specimens examined appear similar to *H. comma manitoba* collected from interior and northern BC. No comparison has yet been made to specimens of *H. comma hulbirti* from the nearby Olympic Peninsula.

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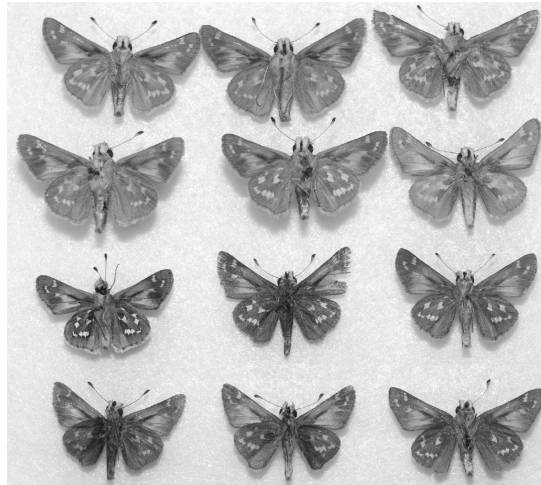


Figure 1. Ventral view of six male *Hesperia* specimens from low elevations (top two rows) and high elevations (bottom two rows) on Vancouver Island, showing differences in size and patterning.

Table 1.

All known location records for *Hesperia colorado oregonia* in Canada, with current status as of 2009.

Location	Last Record	Status
Blenkinsop Lake	1951	Extirpated
Braefoot	1953	Extirpated
Camas Hill	2009	Extant
Cordova Spit	2008	Extant
Goldstream	1952	Unknown
Island View Beach	1963	Extirpated
Langford	1955	Unknown
Malahat	1923	Unknown
Maple Bay	1935	Unknown
Mt Douglas	1953	Extirpated
Mt Wells	1953	Unknown
Observatory Hill	1955	Unknown
Quamichan Lake	1917	Extirpated
Rithet's Bog	1961	Extirpated
Royal Oak	1956	Extirpated
S Wellington	1970	Unknown
Shawnigan Lake	1894	Unknown
Uplands Park	1953	Extirpated

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