

THE CORRECT SPELLINGS AND TYPE LOCALITIES OF BUTTERFLIES NAMED FROM MOUNT RAINIER, WASHINGTON, USA

Additional key words: *Boloria*, *Clossiana*, *Speyeria*, *chariclea*, *titania*, *rainieri*, *mormonia*, *bischoffi*.

The original description of the taxon *Brenthis chariclea ranieri* Barnes and McDunnough, 1913 is titled "B. CHARICLEA RAINIERI subsp. nov. (Pl. II. Figs. 1–4)." The figure captions read: "Fig. 1. *Brenthis chariclea ranieri* B. & McD. Paradise Valley, Mt. Ranier. ♂ Co-type."; "Fig. 2. *Brenthis chariclea ranieri* B. & McD. Paradise Valley, Mt. Ranier. ♀ Type."; "Fig. 3. *Brenthis chariclea ranieri* B. & McD. Paradise Valley, Mt. Ranier. ♂ underside."; and "Fig. 4. *Brenthis chariclea ranieri* B. & McD. Paradise Valley, Mt. Ranier. ♀ underside." (Barnes & McDunnough 1913). The subspecies name is not otherwise mentioned in the original description. Therefore there are two spellings of the new subspecies in the original description, *rainieri* and *ranieri*, and the correct spelling must be determined through application of the International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature 1999).

Statements in the original description include "HABITAT. Mt. Ranier, Wash. (July 24–31) (6–7000 ft.) (McDunnough), 7 ♂, 7 ♀. Types. Coll. Barnes." and "The species was the commonest butterfly collected, being found all over the grassy slopes around the so-called Paradise Valley." Immediately prior to the original description, on the same page, Barnes and McDunnough state "Two years ago we captured a long series of specimens on Mt. Ranier, Washington. . . .", and on the previous page of the publication "Mt. Ranier" is given as the type locality of *Argynnis bischoffi washingtonia* Barnes and McDunnough. It is therefore clear that the type locality is Paradise Valley, Mt. Ranier, Washington. It is also unambiguously clear that the subspecies was named after Mt. Ranier.

The International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature 1999) states:

"32.5. Spellings that must be corrected (incorrect original spellings).

32.5.1. If there is in the original publication itself, without recourse to any external source of information, clear evidence of an inadvertent error, such as a lapsus calami or a copyist's or printer's error, it must be corrected."

and

Examples. If an author in proposing a new species-group were to state that he or she was naming the species after Linnaeus, yet the name was published as *ninnaei*, it would be an incorrect original spelling to be corrected to *linnaei*."

and

"33.2.2. The correction of an incorrect original spelling in accordance with Article 32.5 is a "justified emendation," and the name thus corrected retains the authorship and date of the original spelling [Art. 19.2].

33.2.3. Any other emendation is an "unjustified emendation". . . . [Article 33.2.3 continues with conditions under which "prevailing usage" requires use of an emendation even if it was unjustified.]

Prevailing usage (Art. 33.2.3) is clearly only a factor if article 32.5 does not apply. Articles 32.2.1 and 32.2.2 refer to the choice of correct spelling by a first reviser and are only pertinent when the incorrect spelling is not demonstrably incorrect through article 32.5, which is not the case in this example. Since article 32.5 applies, because it is unambiguous that the subspecies was named after Mt. Ranier, the incorrect spelling *rainieri* in the title of the original description must be corrected to *ranieri*. Miller and Brown (1981, taxon 589b and note 475) were incorrect in emending the spelling of the name to *rainieri*.

We have also reviewed topographical maps and other information to confirm the correspondence of the stated type locality data to modern information. Paradise Valley is a flat-bottomed mountain valley on the south side of Mt. Rainier through which runs Paradise River. This is now the most visited location in the park, with abundant alpine flowers in the summer and deep (6 meter) snow in the winter (Reese 2001). The flat bottom of Paradise Valley is at 5000–5100 feet elevation. The original description states that *ranieri* was "found all over the grassy slopes around the so-called Paradise Valley," indicating that the true elevation at which the type series was collected may have been 5–6000 feet. The steep slopes at the upper (north) end of the valley, from which the headwaters of the Paradise River originate, rise above 6000 feet to Mt. Rainier. Hence, for lack of any strong evidence to the contrary, we recommend leaving the stated elevation of 6–7000 feet unchanged. The boundary between Pierce County and Lewis County almost exactly bisects Paradise Valley. The type specimen of *ranieri* may have originated from either County. The type locality of *Brenthis chariclea ranieri* Barnes and McDunnough, 1913 should be therefore be cited as "Paradise Valley, Mt. Ra[i]nier, [elevation] 6–7000 ft., [Pierce or Lewis County], Wash[ington], USA," with the square brackets indicating extrapolated data.

Barnes and McDunnough (1913) also described the subspecies *Argynnis bischoffi washingtonia* (now referred to as *Speyeria mormonia washingtonia*), with a similar type locality to *ranieri*. The differences in type locality citation were in the elevation (7000 ft.) and reference to only Mt. Ranier and not Paradise Valley. This indicates that the type series of *washingtonia* was probably collected on the steep slopes above the upper (north)

end of Paradise Valley, within Pierce County. The type locality of *Argynnis bischoffi washingtonia* Barnes and McDunnough, 1913 should therefore be cited as “Mt. Ra[i]nier, [elevation] 7000 ft., [Pierce County], Wash[ington, USA],” to reflect accurately the information in the original description. It is worth noting that the spelling *bischoffi* is the original spelling (Edwards 1870) and Barnes and McDunnough’s (1913) spelling of *bischoffi* was incorrect (International Commission on Zoological Nomenclature 1999, Article 31.1).

Gunder (1932) named “*Argynnis eurynome* [= *Speyeria mormonia*] *washingtonia* B. & McD., form *ranierensis*” from specimens collected at “Paradise Valley, Mount Ranier, Pierce Co., Washington, Aug. 12, 1931.” Miller and Brown (1981) incorrectly and without explanation emended the name of this form to *rainierensis*. The correct spelling is form *ranierensis*, because it is unambiguously clear that the form was named after Mount Ranier. The type locality for form *ranierensis* should be cited as “Paradise Valley, Mount Ra[i]nier, Pierce Co[unty], Washington, [USA].”

Mount Rainier, elevation 14,411 feet, is in the center of Mount Rainier National Park. Captain George Vancouver named it in 1792 to honor Rear-Admiral Peter Rainier of the Royal Navy (Reese 2001). On 2 March 1899 President McKinley signed into law the bill that created a new national park around Mount Rainier. The national park was named after the mountain, but was misspelled “Mount Ranier National Park” in the bill. An image of the original bill, showing the misspelling, can be viewed on the Library of Congress website at <http://lcweb2.loc.gov/law/GLINv1/GLIN.html>. The official, but misspelled, name may well have been used on

signs in the park in 1911, when the specimens of *ranieri* were collected, and in 1931 when the types of *ranierensis* were collected. We made contacted the National Parks Service, but could not determine when, if ever, the name of the national park was changed to “Mount Rainier National Park”. However, it appears that up until at least 1931 the spelling “Mount Ranier” was a valid and widely used alternate spelling for Mount Rainier. This is the origin of the spelling Mount Ranier as the type locality for the two butterfly names *ranieri* Barnes and McDunnough, 1913 and *ranierensis* Gunder, 1932.

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