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PARNASSIANA NOVA LII

THE GENUS *PARNASSIUS* LATREILLE IN WILLIAM H. HOWE'S "THE BUTTERFLIES OF NORTH AMERICA" (1975)

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The critical remarks by Clifford D. Ferris of the chapter "*Parnassius*" in William H. Howe's treatise of the butterflies of North America stimulated me to write the review following below and send it in for publication to the Journal of the Lepidopterists' Society. Through this I hoped to open a discussion on and come to a classification of the *Parnassius* subspecies of North-America. Earlier attempts were never followed by any reaction. Since George L. Godfrey, Editor-in-chief of the said journal, to my regret informed me that the Editors had decided not to allow any space to discussions on Howe's book, I submitted my remarks for publication in the Zoologische Mededelingen of the Rijksmuseum van Natuurlijke Historie at Leiden.

The chapter on *Parnassius* has been dealt with by John H. Shepard and Sigrid S. Shepard. For years I have cooperated with Mr. Shepard, to whom I am indebted for many a series of well-labelled North American *Parnassius*. Meeting in San Francisco in 1968, we discussed at length the distribution of *Parnassius* in North America and came to agreement, as prove Mr. Shepard's drawings, which I still have before me.

As to *P. eversmanni thor* W. H. Edwards I have no comments. Regarding *P. clodius* Ménétriés the subspecies *hel* (mihi) is missing. It comes from Stevens Pass in the Cascade Mountains, Washington (at 4500 ft). It is a high altitude subspecies and in my collection there is no other series of *Parnassius clodius* so richly designed as the types depicted by me (1956, Parnassiana Nova 10: 243-244, pl. 3 figs. 1-6).

As to the subspecies *pseudogallatinus* Bryk, I still doubt whether specimens from the eastern part of the Vancouver territory still belong to it, whereas in most characters they come very close to ssp. *hel* Eisner. Most specimens

from British Columbia in my collection are smaller and poorer designed than specimens of *claudianus* Stichel. *P. clodius altaurus* has been described by Dyar as an aberration of *P. clodius clodius*, and consequently the name has no nomenclatorial status; if it is the same as ssp. *gallatinus* Stichel it should bear that name.

P. clodius menetriesii Edwards is not only known from Utah, but also inhabits Wyoming, Idaho and Oregon (for a description, also of the ♀, see Parn. Nov. 30: 173; for distribution: 1974, Parn. Nov. 49: 94).

As to the distribution and speciation of *P. phoebus* Stichel in North America I refer to the treatise under discussion here and to Clifford D. Ferris' "A proposed revision of non-arctic *Parnassius phoebus* Fabricius in North America (Papilionidae)" (1976, Journ. Res. Lepid. 15(1): 1-22), of which paper I just received a copy from Shepard.

The resemblance of the subspecies *apricatus* Stichel and *golovinus* Holland to *corybas* Fisher-Waldheim strongly suggests that *phoebus* reached north-western Alaska from eastern Siberia by crossing the Bering Strait.

Ferris speaks very haughty about "splitters" like Bryk, myself and other European authors. Evidently he has not understood why Bryk and I consider it important for the study of evolution at the subspecific level to mention the prevailing forms. When introducing nomina collectiva for certain types of designs of *Parnassius*, it was done in order to facilitate the recognition of the relevant elements in a design. To speak of "taxonomic philosophy" in this respect is certainly strange.

Before continuing I want to state that, though I have not collected in North America myself, I have received information about the different biotopes from reliable entomologists. Particularly I am indebted to F. M. Brown, Colorado Springs, for his advice.

Though the pictures of the various *Parnassius* in the book (plates 67-69) are very good they fail to show differences in size.

It strikes me as curious when Ferris groups a number of *phoebus* subspecies around *behrii* Edwards, while this subspecies differs from all others by the yellow instead of red pigments and the strong tendency towards blackening of the ocelli. The specimens depicted in Howe's book (pl. 69 figs. 3 and 4) have a comparatively rich yellow coloration. The subspecies *alaskaensis* Eisner is not mentioned. Contrary to Shepard's opinion *smintheus* Doubleday & Hewitson differs considerably from *olympianna*, especially as regards the ♂, which is characterized by a reduction or absence of the marginal and submarginal bands of the forewing. Ferris hardly gives a description of *smintheus*. I also wonder why Shepard does not even mention *P. phoebus manitobaensis* Bryk & Eisner (see my remarks in Parn. Nov. 49

(1976): 109), while he has extensively collected at lower altitudes in the Canadian Rocky Mountains. It is distinctly different from *montanula* Bryk & Eisner and certainly from *smintheus*.

As to *P. phoebus sternitzkyi* McDunnough I refer to my diagnosis (1976, Parn. Nov. 49: 112), made after para-topotypes. It is, like *magnus*, a large subspecies. The pictures of *magnus* (pl. 69 figs. 9, 10) are not characteristic. *P. phoebus magnus* occurs in a much wider area than *sternitzkyi*.

P. phoebus idahoensis is a synonym of *xanthus* Ehrmann, the description of which was not known to us at that time. Shepard also considers *P. phoebus montanulus* a synonym of *xanthus*, whereas Ferris treats *montanula* as a separate subspecies. I believe that *montanula*, inhabiting Montana and a part of Wyoming, connects *manitobaensis* with the more southern flight areas. I refer to my diagnosis of 1961 (Parn. Nov. 30: 182-183) and 1964 (Parn. Nov. 35: 134), and the pictures (1955, Parn. Nov. 4: figs. 1-4; 1957, Parn. Nov. 14: pl. 4 figs. 5-8; 1964, Parn. Nov. 35: pl. 2 figs. 1-2).

Shepard considers the subspecies *dakotaensis* and *hollandi* — and also *rubiana* Wyatt, which I don't know — synonymous with *P. phoebus sayii* Edwards. Ferris is of the opinion that *hollandi*, and its synonym *rubiana*, is at best a "weak subspecies", assigning it to *Sayii*; he sees no reason to maintain *dakotaensis* as a separate subspecies.

I believe that Shepard and Ferris have not enough parnassiological experience for a proper judgement on the characteristics and the distribution of *P. phoebus* within the flight area concerned, the more so because they don't seem to realize how strongly *Parnassius* properties are influenced by even minor changes in the habitat.

In a letter, which I received from Mr. F. M. Brown recently, it says: "The mountain ssp. in Alberta-British Colombia along the Rocky Mountains (actually along the border of the two provinces) is *smintheus*. This ssp. probably enter northern Montana in the Glacier National Park area. South of that, and at lower altitude I believe *montanulus-xanthus* occurs. This seems to be the form in the Bitterroot Mountains and n. Idaho. The isolated eastern ranges in Montana and the Beartooth and Absaroka ranges in Wyoming are *maximus*. Isolated in the Black Hills of SD and Wyo I find *dakotaensis*, close to but separable from *sayii*. In the Laramie Mts of Wyoming, The Medicine Bows of Wyoming & Colorado and along the Front Range at rather low altitude (7000-9000 ft in Colorado) is *sayii*. At higher altitude (the tree-line and above) populations are *hermodur*. In the southern ranges of Colorado, La Plata and San Juans, *pseudorotgeri* is found. What flies in the Sangre de Cristo Range and the Spanish Peaks I don't know! I'll get some this year to see. In Utah almost each isolated range has its own ssp.

The same is true for those ranges in southern Idaho and Nevada. What to do in the Great Basin area I don't know. To name each would create another 15-20 names. I have not yet seen every kind from those areas. *Hollandi* and *rubiana* are not *sayii* by any means."

I completely agree with Mr. Brown's views, except where he attributes too large a flight area to ssp. *smintheus*. Supported by his authority I maintain my distribution of the subspecies *hollandi*, *montanula*, and *dakotaensis* (as given in Parnassiana 3), *maxima* (Parnassiana 5), and *pseudorotgeri* (Parn. Nov. 36).

I am convinced that Shepard and Ferris would agree with my opinion on the distributions of the different subspecies, if they had an opportunity to examine the North American *Parnassius* in my collection, now in the Rijksmuseum van Natuurlijke Historie at Leiden.