NATURAL NON-VIOLA HOSTPLANT OF A SIERRAN SPEYERIA (NYMPHALIDAE, HELICONIINAE) AND AN ASSOCIATED PARASITOID (DIPTERA, TACHINIDAE)

Additional key words: Argynnis, Bistorta bistortoides, Madremyia saundersii, mormonia, Polygonaceae

Larvae of the North American genus Speyeria Scudder (some would argue Argynnis Fabricius, see Dunford 2009, de Moya 2016) are said to be very secretive, nocturnal feeders that subsist solely on Viola Linnaeus (Violaceae) (Scott 1986, Brock & Kaufman 2003, James & Nunnallee 2011, ad infinitum). Although a number of authors have, for example, either surmised (Bird et al. 1995), suggested (Durden 1965), proposed (James 2012), or observed (Christopher Durden pers. comm. 27 July 2005) that other plant families could be used, no conclusive proof has ever been presented. Herewith I belatedly report finding five probable Speyeria mormonia mormonia Boisduval caterpillars feeding exclusively on Bistorta bistortoides Pursh (Polygonaceae) in a California arctic-alpine meadow, with all larvae reared to pupation and four parasitoid flies obtained. Thus, to the list of “Argynnis s.l.” that eat both Violaceae and Polygonaceae—currently only Argynnis aglaja Linnaeus (Fric et al. 2005, plus new Fukuda et al. 1983, Chou 1994, but see Nishida 1993*)—previously overlooked Argynnis adippe Denis & Schiffermüller (Fukuda et al. 1983), Argynnis xipe Grum-Grshimailo (Lee 2005 fide Kim 1965), and now S. mormonia (this study) can be added. It will be interesting to note how these and future revelations of taxonomically unrelated foodplants affect our total-evidence understanding of the Argynnini and the phylogenetic placement of its genera.

On 4 July 1990, while on knees and elbows looking for Colias behrii W.H. Edwards (Pieridae) caterpillars to photograph at 3150 meters (10,335 feet) next to Middle Gaylor Lake, Tuolumne County, California, I encountered a last-instar Speyeria actively feeding on B. bistortoides (identified, verified, and accessioned at Jepson Herbarium, Berkeley, California, JEPS 84842 dated 28 July 1990). It crawled into the ground debris moments later, but was watched and then extricated; a careful check revealed no additional larvae. The time was about 12 noon PDT with a clear sky and pleasant temperature—a thorough examination of the vicinity disclosed zero violets. Seeing no other B. bistortoides nearby I left the area, only to return shortly to the same clump where yet another caterpillar in its penultimate stadium was discovered hiding among the tangled undergrowth.

Ten days later on 14 July 1990 I went back to the aforesaid alpine lakeshore for the sole purpose of finding more Speyeria preadults. Several hours of searching showed B. bistortoides to be abundant there, at least in places. However, leaves with only minor eaten damage were seen during this subsequent visit, inspection of which revealed no larvae. Just as a storm passed overhead in the early afternoon that would drop rain, hail, and the temperature, a patch with extensive fresh leaf incisions was finally found, which yielded a mature caterpillar resting on the bare ground next to the plant. Two weeks later on 28 July 1990 I again returned, this time circling the entire lake and checking every B. bistortoides for signs of recent feeding damage. In the seven hours so spent merely three such clumps were located, though many others exhibited older, scarred notches. From these promising plants, and with the aid of an iced tea spoon, two last-instar Speyeria were uncovered as they lay concealed at the base of two separate patches. Notably, the only other plant-eating insect encountered on all of the above B. bistortoides