

THE FEMALE OF *LYCAEIDES ARGYROGNOMON SUBLIVENS*

by V. NABOKOV

Last summer (1951) I decided to visit Telluride, San Miguel County, Colorado, in order to search for the unknown female of what I had described as *Lycaeides argyrognomon sublivens* in 1949 (*Bull. Mus. Comp. Zool.*, vol. 101: p. 513) on the strength of nine males in the Museum of Comparative Zoology, Harvard, which had been taken in the vicinity of Telluride half a century ago. *L. sublivens* is an isolated southern representative (the only known one south of northwestern Wyoming, southeast of Idaho, and east of California) of the species (the holarctic *argyrognomon* Bergstr.=*idas auct.*) to which *anna* Edw., *scudderi* Edw., *aster* Edw. and six other nearctic subspecies belong. I bungled my family's vacation but got what I wanted.

Owing to rains and floods, especially noticeable in Kansas, most of the drive from New York State to Colorado was entomologically uneventful. When reached at last, Telluride turned out to be a damp, unfrequented but very spectacular cul-de-sac (which a prodigious rainbow straddled every evening) at the end of two converging roads, one from Placerville, the other from Dolores, both atrocious. There is one motel, the optimistic and excellent Valley View Court where I stayed, at 9,000 feet altitude, from the 3rd to the 29th of July, walking up daily to at least 12,000 feet along various more or less steep trails in search of *sublivens*. Once or twice Mr. Homer Reid of Telluride took me up in his jeep. Every morning the sky would be of an impeccable blue at 6 a. m. when I set out. The first innocent cloudlet would scud across at 7:30 a. m. Bigger fellows with darker bellies would start tampering with the sun around 9 a. m., just as I emerged from the shadow of the cliffs and trees onto good hunting grounds. Everything would be cold and gloomy half an hour later. At around 10 a. m. there would come the daily electric storm, in several installments, accompanied by the most irritatingly close lightning I have ever encountered anywhere in the Rockies, not excepting Longs Peak, which is saying a good deal, and followed by cloudy and rainy weather through the rest of the day.

After ten days of this, and despite diligent subsequent exploration, only one sparse colony of *sublivens* was found. On that one spot a few males were emerging on the 15th. Three days later I had the pleasure of discovering the unusual-looking female. Between the 15th and the 28th, a dozen hours of windy but passable collecting weather in all (not counting the hours and hours uselessly spent in mist and rain) yielded only 54 specimens, of which 16 were females. Had I been younger and weighed less, I might have perhaps got another 50, but hardly much more than that, and, possibly, the higher ridges I vainly investigated between 12,000 and 14,000 feet at the end of July, in the *magdalena-snowi-centaureae* zone, might have produced *sublivens* later in the season.

The colony I found was restricted to one very steep slope reaching from about 10,500 to a ridge at 11,000 feet and towering over Tomboy Road between "Social Tunnel" and "Bullion Mine". The slope was densely covered with a fine growth of lupines in flower (*Lupinus parviflorus* Nuttall, which did not occur elsewhere along the trail) and green gentians (the tall turrets of which were assiduously patronized by the Broad-Tailed Hummingbird and the White-

Striped Hawkmoth). This lupine, which in the mountains of Utah is the food-plant of an alpine race of *L. melissa* (*annetta* Edw), proved to be also the host of *L. argyrognomon sublivens*. The larva pupates at its base, and in dull weather a few specimens of both sexes of the imago could be found settled on the lower leaves and stems, the livid tone of the butterflies' undersides nicely matching the tint of the plant.

The female of *sublivens* is of a curiously arctic appearance, completely different from the richly pigmented, regionally sympatric, locoweed and alfalfa-feeding *L. melissa* or from the *melissa*-like females of Wyoming and Idaho *argyrognomon* races, and somewhat resembling *argyrognomon* forms from northwestern Canada and Alaska (see for instance in the above mentioned work, p. 501 and plate 8, fig. 112). It also recalls a certain combination of characters that crops up in *L. melissa annetta*.

Here is a brief description of *L. sublivens* female: Upperside of a rather peculiar, smooth, weak brown, with an olivaceous cast in the living insect; more or less extensively dusted with cinder-blue scales; triangulate greyish blue inner cretules generally present in the hindwing and often accompanied by some bluish or greyish bleaching in the radial cells of the forewing; aurorae reduced: short and dullish in the hindwing, blurred or absent in the forewing, tending to disappear in both wings and almost completely absent in 3 specimens; lunulate pale greyish blue outer cretules very distinct in both wings; underside similar to that of the male.

Deposited: twenty males and ten females in the Cornell University collection, and eighteen males and six females in the Museum of Comparative Zoology, Harvard University.

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The KLAGES collection has come to Cornell University through the intermediary of an alumnus. The parts of most interest to a lepidopterist are Erycinidae, Hesperidae, and Euchromiidae (= Syntomidae, Ctenuchidae, Amatidae) collected by him at Suapure, Venezuela, in 1898 to 1900, including paratypes of many of the species described in the *Proc. U. S. Nat. Mus.*, vol. 29. 531-552; 1906.

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