

## FURTHER NOTES ON THE MIGRATION AND BREEDING OF *NYMPHALIS CALIFORNICA*

The reports by WHITTAKER, FENDER, and BAKER on a migration of *Nymphalis californica* Bdv. (*Lepid. News*, vol.7: pp. 9, 10, 15) I found very interesting in view of my experience with this species during the week of August 3, 1952, in Trinity and Siskiyou Counties of northern California.

Mr. J. DUNCAN GRAHAM, science teacher of the Benicia High School, and I were enroute on a trout fishing trip to a cabin in the Klamath National Forest when the migration was first noted about the town of Weed where *N. californica* were present in such large numbers that the migration was the topic of conversation in that area. The radiator grills of automobiles and the streets were littered with the bodies of migrants which had been struck and injured or killed by cars.

The migrants were traveling in a northwesterly direction at low elevation, two to six feet, which at the town of Weed was from nearby Mount Shasta.

During our fishing in the forest area along the South Fork of the Salmon River and its tributaries there was no observation of *N. californica* except for two or three stragglers during the five days. Enroute back to civilization from this wilderness area the trail took us past the Trail Creek mine, nearly 7000 feet elevation. Here, *Nymphalis* was again exceedingly abundant; however instead of migrating they were fluttering about and lighting on the blooms of a low plant of the mint family.

Adjacent to the mine was a heavy growth of brush. Practically all of the bushes in at least this fifteen acre area were entirely denuded of foliage, as though stripped by a fire. Robins, bluebirds, and jays and probably other birds were feeding on the millions of chrysalides of *Nymphalis* hanging from the denuded branches of *Ceanothus*, *Manzanita*, and other native shrubs some six feet in height. Because of the disturbance by the birds, the chrysalides appeared to be cognizant of danger as they were vigorously swaying as far as their attachments to the branches allowed. In fact, one of the gold-mine caretakers mistook the swaying action as caused by wind passing through the denuded brush. Only a few of the velvety black, dotted and lined caterpillars had not yet reached the chrysalis stage.

I picked a few twigs about ten inches each in length, bearing dozens of chrysalides, with the intention of finding if they would complete the metamorphosis to butterflies at the lower level of my home in Benicia, California. However, due to the heat of the Sacramento Valley through which I had to travel to reach my home, or because of the low altitude, near sea level, they all died without further development.

I have experienced other migrations of this species in California but this was the greatest breeding concentration of this or any species of Lepidoptera I have witnessed in forty years of interest in this science.

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## ON TRANSPORTING LEPIDOPTERA SAFELY

Two summers ago, while camping in the Sierra Nevada of California, I was confronted with the problem of transporting the Lepidoptera I had collected over trails by back pack and mule train. This problem was solved very simply and satisfactorily by taking two tin cans, a number 303 can and one a little larger, and telescoping the smaller can into the larger one. This whole container was then wrapped in paper and tied together. Small envelopes about  $2\frac{1}{4}$  by 4 inches fit into the cans very well (I used church envelopes!) and the curvature of the container keeps these envelopes from being shaken about. The telescoped cans give surprising strength and also good protection against parasites. In fact, I've found this method of storing and packing insects so effective that I now use it at home as standard practice.

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