

SPEYERIA CALLIPPE AND ARTEMISIA,  
A POSSIBLE FOODPLANT

It is generally supposed that all *Speyeria* feed, as larvae, on some species of *Viola* and this assumption is supported by all species for which the life history is known. The author was thus startled to find *Speyeria callippe gallatini* McDunnough ovipositing on a woody *Artemisia* (sagebrush) probably *A. trifida*, and to find this butterfly consistently associated with sagebrush. At 11 localities in Broadwater, Madison, and Carbon counties, Montana; Park, Bighorn, and Lincoln counties, Wyoming; and Uintah County, Utah, where *S. callippe* was present in numbers, sagebrush was in all cases present within 100 feet of captures. These habitats range from a semiarid wash some tens of miles from the nearest forest, at 4,300 feet six miles northwest of Three Forks in Broadwater County, Montana (June 28, 1964), through montane park sage openings (the majority of localities) to tree line at 9,800 feet on Clay Butte west of Beartooth Butte in Park County, Wyoming (July 21, 1964). On the cliffs three miles north of Fossil, Lincoln County, Wyoming (August 2, 1964) where *S. callippe* was particularly abundant, several individuals were flushed from within *Artemisia* bushes where they had been crawling along the woody trunk and branches. A female was followed, observed to oviposit on the loose bark near the base of the trunk, allowed to crawl out of the bush, fly to another plant 10 feet distant, and repeat the process at which point she was captured. It might be postulated that *S. callippe* oviposits on branches aboveground, avoiding exposure of the possibly overwintering egg to ground moisture. The newly hatched larvae would then have to search for violets in the spring. No evidence of violet plants or fruits was found at Fossil in spite of a careful search.

Of great interest was the discovery of unidentified *Speyeria* larvae of several instars, resting in the upper branches and green shoots of sagebrush at Buffalo Creek, 25 miles east of Sheridan in Sheridan County, Wyoming (June 17, 1964). A search of the ground flora produced no *Viola* so it must be assumed in this case that violets are not the foodplant of at least one species of *Speyeria*. The presence of larvae perhaps otherwise unassociated with sagebrush in the upper branches of shrubs could be attributed to response to peculiar weather conditions preceding a storm in dry country where sheetwash is a danger to organisms near the soil. The larvae were observed at about 5:00 P.M. in a light rain which developed later into an all-night rainstorm depositing two inches of water and accompanied by flooding. It is the author's opinion that these normally nocturnal feeding larvae had moved into their feeding territory

under the abnormally overcast and humid conditions, but had not commenced to feed.

Taking all points into consideration; the oviposition of *S. callippe* on sagebrush; the occurrence of *Speyeria* larvae on sagebrush, and the presence of sagebrush at all the author's collecting sites for *S. callippe* it is suggested that sagebrush may serve as the larval foodplant. Specimens of the larvae and adults have been deposited in the Yale Peabody Museum.

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## A METHOD FOR OVERWINTERING HIBERNATING LARVAE OF BUTTERFLIES

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In a recent issue of the *Journal* (18: 201-210, 1964) Noel McFarland presented many useful tips for preserving the immature stages of lepidoptera. His statement that overwintering larvae are easily handled by storage in jars in shaded areas but subject to normal out-of-doors temperatures is true in part. There are some areas in the country where this can be done without too great loss of specimens. I have found here in Colorado, and W. H. Edwards discovered almost a century ago in West Virginia, that overwintering losses under such conditions are very high.

Edwards's solution was to send his larvae for overwintering to an ice-house and to have the boxes in which he stored the larvae packed in the cold, moist sawdust used to retard the melting of the ice. Alas, there are no longer such places.

The environment of our modern electric or gas refrigerators, household or laboratory, is much too dehydrating to be of use. I have had success with a simple and inexpensive device that I have passed on in letters to some friends. I repeat it here for a larger audience. I use a portable, or automobile, ice chest, the sort that has come into vogue for picnics or camping trips. These can be purchased in many places for less than \$20. I recommend one that is sturdily built. It will last for years. Mine has a good latch on it that seals the lid effectively against too much loss of moisture or ingress of heat. It is metal and plastic construction with a drain hole and a place for racks.

When larvae begin to go into hibernation, often in late July and August for some species of butterflies, I put each into a sterile shell vial and