

NOTES ON LIFE HISTORIES AND HABITS OF SOME  
WESTERN THECLINAE

E. J. NEWCOMER

1738 N.E. Naomi Place, Seattle, Washington 98115

Realizing that very little was known about life histories of several Theclinae, I made some studies of some of them. It was not difficult to get adults to oviposit in small (1.50 × 3.75 in.) "season salt" bottles which have plastic shaker tops. Eggs would be deposited on a supposed food-plant or on the sides of the bottles. Larvae were reared in metal pill boxes with fresh food supplied usually twice daily.

*Callipsyche behrii* (Edwards). This species occurs throughout most of the area from the Rocky Mountains to the Pacific Coast. It has been recorded as feeding on *Lupinus* ssp., *Astragalus* ssp., and *Lotus* ssp. (Brown, 1957; Jones, 1951; Comstock, 1927). But in central Washington the foodplant is primarily something quite different, antelope bush (*Purshia tridentata* (Pursh) DC, which is in the Rosaceae. This plant is quite common in the arid transition zone and it occurs from British Columbia and Montana to central California and New Mexico. The eggs are deposited on the stems and occasionally on the leaves of this shrub.

**Egg:** typical theclid form, diameter 0.8 mm, very light greenish, does not appear to be denticulated but is covered with small nodules. **First instar:** 2 mm, head black, body pinkish with many small dark dots and some setae. **Second instar:** 3.5–4 mm, light green with many dark green dots and small setae. **Later instars:** light green with diagonal lighter green markings laterally on each segment and a lateral light stripe. This coloring blends very well with the small leaves of the foodplant. **Pupa:** not seen.

*Incisalia fotis* (Strecker) is also found throughout the West but rather localized. It flies early in the spring and hence may be missed by some collectors. The foodplant is sedum.

**Egg:** diameter 0.6 mm, height 0.4 mm, very finely reticulated, light blue green. **First instar:** light tan with double pink stripe dorsally and single pink stripe laterally; two tubercles on each segment lateral of the pink stripes, each with two setae; head dark brown. **Mature larva:** light greenish, pronounced double pink stripe dorsally, lateral pink stripes and a ventral white stripe; dark red diagonal "hash" marks on each segment; hairs numerous, golden brown; head, light brown, sunken into the first segment. **Pupa:** length 10.5 mm, width 5.25 mm, purplish brown, dorsum lighter with many fine darker reddish lines; two rows of dark spots on each side of dorsum; dorsal line dark, many short, light brown hairs scattered over body except on wings.

*Incisalia eryphon* (Boisduval) is well distributed over the area west of the Rocky Mountains. In May 1964, I was able to get 30 or 40 eggs of

this species but have not succeeded in getting any since that time. Holland (1930) stated that the early stages were unknown. He reported that Scudder had "elaborately described" the early stages of the related *niphon*, and that the caterpillars fed on pine. Scudder (1889) did not elaborate on what part of the pine tree the larvae fed upon. The only published information I could find on *eryphon* was a brief paper by Hardy (1959). Hardy reared larvae on lodgepole pine (*Pinus contorta* Loudon) and found that they fed "in the soft and succulent base" of the needles. He described the various stages. Llewelyn Jones (1951) also reported that the larvae fed on the western white pine (*P. monticola* Douglas).

When the eggs started to hatch, I assumed the larvae would feed at the base of the needles of the yellow pine (*P. ponderosa* Lawson) that I had them on, but they died without feeding. So I tried the staminate catkins, which were ripening in May, and found that the larvae fed on them readily. They had some difficulty in boring into the catkins, so I scraped away a bit of the outer coating, after which they had no difficulty and soon had disappeared within. As the larvae grew, they were often partially outside of the catkins, but usually had the head and fore part of the body buried. One would think that, with such food, their color would be different than if they were feeding on the needles, but this was not the case. In the first instar they were honey colored and I would have expected them to remain that color in the later stages. But when they reached the third instar they became bright green. They were usually well powdered with pollen, which constituted a very rich food for them. Under laboratory conditions eggs hatched in 5 or 6 days. Because of the manner of feeding, it was not feasible to keep track of the various instars, but the total feeding time was about two weeks.

**Egg:** light green, the usual lycaenid form, diameter 1 mm, height 0.6 mm. **Newly hatched larva:** length 1.5 mm; head brown, body honey colored, a whitish line on each side of the dorsum with very short setae on each segment; anal plate small, round. **Third (?) instar:** length 11 mm; light green with a lighter green line on each side of the dorsum; many very small dark points on the abdomen from which grow short, light-brown hairs of various lengths; cervical shield greenish brown; head light brown; anal plate not evident. **Full-grown larva:** length 18 mm; ground color green; head and thoracic shield light brown; a latero-dorsal white stripe on each side of dorsum. **Pupa:** length 7.5–8 mm, width 3.5–4 mm; at first green, turning brown; dark area on each segment dorsally and a smaller round, dark spot subdorsally; a few irregular dark brown spots on wings; very fine setae scattered over body but not on wings.

*Strymon saepium* (Boisduval) occurs from the Rocky Mountains to the Pacific Coast and from southern British Columbia to southern California. In this region there are some 50 species of *Ceanothus* which is evidently the preferred foodplant. It undoubtedly feeds on more than one species,

possibly even in one area, but its preferences among the many species are not known.

Eggs were deposited on the stems and leaves, mostly on the under surface, of *Ceanothus velutinus* Douglas, and a few on *C. sanguineus* Pursh.; and on oak, in this case between the buds. Larvae would not feed on oak but fed readily on both species of *Ceanothus*, starting on the under surface. The upper surface of *C. velutinus* is somewhat sticky and feeding there is difficult. The larger larvae ate holes through the leaves and they also fed on the flower buds.

**Eggs:** the usual flattened shape, reticulated over the entire surface except the base; area about the micropyle depressed but also reticulated; light greenish; diameter 0.8 mm. **Newly hatched larva:** length 1 mm, sluglike; cream colored with many long hairs; a darker mid stripe and a lateral stripe; head light brown. **Second instar:** length 2.5 mm; light green, latero-dorsal ridges whitish; lateral ridge whitish; head black. **Third instar:** length 4-5 mm; same color and stripes; dorsal area dark green; many short spines all over body. **Fourth instar:** length 10 mm, width 3.5 mm; uniform light green except for narrow dorso-lateral whitish line. **Full-grown larva:** length 15 mm, width 5 mm; light green, two whitish dorsal stripes separated by a narrow green area; lateral stripe whitish; body covered with short golden hairs; ventral side lighter green; head small, dark brown, posterior part lighter brown. **Pupa:** length 11 mm, width 5 mm; chestnut brown with many irregular darker flecks on dorsum; head and wing covers with few hairs, many light brown ones dorsally.

#### LITERATURE CITED

- BROWN, F. MARTIN. 1957. Colorado Butterflies. Proceedings Denver Museum of Natural History. Nos. 3-7. Denver, Colo.
- COMSTOCK, J. A. 1927. Butterflies of California. Los Angeles.
- HARDY, A. 1959. On the life history of *Incisalia eryphon* (Lycaenidae) on southern Vancouver Island. J. Lepid. Soc. 13(2): 70.
- HOLLAND, W. J. 1930. The Butterfly Book. Doubleday, New York.
- JONES, J. R. J. LLEWELLYN. 1951. An Annotated Check List of the Macrolepidoptera of British Columbia. The Entomological Society of British Columbia.
- SCUDDER, S. H. 1889. The Butterflies of the Eastern United States and Canada. Cambridge.

---

#### PRELIMINARY REPORT ON COMMUNAL RESTING OF *SMYRNA KARWINSKII* ADULTS (NYMPHALIDAE)

Since 1962 we have observed adults of *Smyrna karwinskii* (Geyer), resting in groups of ten individuals to more than 100, at all times of the day, either in small caves on a lava wall, or under concrete slabs covering alleys between some cabins on Cerro Verde. Cerro Verde, a mountain ca. 2000 m. elev., overlooks Izalco Volcano, about 50 km. WNW of San Salvador, capital of El Salvador. This phenomenon has been observed at different times of the year: March-April, August, and November-January, during both the dry and rainy season.

It had been our assumption that the groups were drinking filtration water, but this year we had a chance on 31 March to observe five groups more closely: one of about 15 individuals, one of about 20, two of about 50 and one of more than 100. All were in places protected against the wind. None of the individuals had the proboscis uncoiled, and there was no moisture present, yet the groups stayed there from the time first detected, 1015, to the time we left, 1700. From time to time individuals would fly away, and individuals would join the group. Males and females were mingled in each group, but no sexual activity was noticed.

All groups followed a certain pattern: a nucleus of about eight individuals had the heads together, so that the antennae, upraised, formed a tight fascia. Then a row of individuals formed a tight circle around this nucleus, with the antennae touching the wings of the inner group. In this way row after row were formed. Some rows did not form a complete circle, and eventually there was a line of four to five individuals breaking the regularity of the pattern, but they were encircled by the next row. All heads were pointing inward. The groups looked very much like dried moss growths.

When at the resting places the butterflies are very tame, so that specimens can be captured by hand from any place in the group, without disturbing the rest. If handled roughly the whole group will take flight, fully alert, and disperse among neighboring trees and rocks. In the surrounding woods individuals were observed while feeding on sap from wounds caused by other insects or woodpeckers high up in tree trunks.

We have not investigated yet if the individuals keep to their own groups after their occasional flights, or if they exchange locations with others; nor have we investigated if this species has acquired the behavior of forming groups just to protect themselves from the wind or predation. This behavior has not been observed in *Smyrna blomfieldia datis* Fruhstorfer, a closely related species abundant in the lowlands.

We intend to present the full results of our investigation on this phenomenon in a future article.

ALBERTO MUYSHONDT, 101 Ave. N., 322, Lomas Verdes, San Salvador, El Salvador.

---

#### BIRD PREDATION ON *PAPILIO POLYXENES* F. (PAPILIONIDAE)

Birds have been shown to exert substantial predation pressure on many butterfly species (Carpenter 1940, Entomol. Mon. Mag. 76: 224-229; Rawson & Bellinger 1953, Lepid. News 7: 27; Betts 1956, Entomol. Mon. Mag. 92: 68-71; Gibb 1958, J. Anim. Ecol. 27: 375-396). However, a shortage of field observations exist in the literature dealing with bird predation on larvae and adult butterflies.

During the summer of 1971, while carrying out field studies in Ithaca, New York, on the eastern black swallowtail (*Papilio polyxenes*), several observations on bird predation were made. On 3 June, a female butterfly was taken by a bluejay (*Cyanocitta cristata* L.) as she was ovipositing on carrot (*Daucus carota* L.). In the same area on 1 July, another bluejay was seen attacking a 5th instar larva on a carrot plant. Near Homer, New York, on 31 July, a male swallowtail was taken on the wing by a catbird (*Dumetella carolinensis* L.) just after the butterfly flew from the common burdock (*Arctium minus* (Hill) Bernh.) flower upon which it had been feeding.

JAMES M. ERICKSON, Department of Entomology, Cornell University, Ithaca, New York 14850.