

FLIGHT HABITS OF *BOLORIA TODDI*

While collecting butterflies along the Beaver River about four miles west of Cedar Falls, Black Hawk County, Iowa, on 3 September 1964, from 12:45 to 1:45 P.M., I made the following observations on *Boloria toddi toddi* Holland. The habitat is an open place in a wooded river bottom which is used as pastureland. Flowers in bloom were: *Helenium autumnale* L. (sneezeweed), *Solidago* (tall goldenrod), *Veronia altissima* Nutt. (tall ironweed), and *Cirsium lanceolatum* (L.) (bull thistle). Trees in this particular spot are a few scrubby *Crataegus* (hawthorn) and *Gleditsia triacanthos* L. (honey locust).

I was investigating *Phyciodes tharos* (Drury) and *Euptoieta claudia* (Cramer), which were quite plentiful, especially on the sneezeweed, when something flew by that looked like a tiny *Speyeria*; I assumed it was a *Boloria*. I tried to capture it but to no avail. However, I was surprised in a few moments to see it or another one fly past again. Then by careful observation, I was able to ascertain that this particular *Boloria* had set up a territory, roughly 100 feet north and south by 500–600 feet east and west. By standing in one spot I found that the butterfly would fly past me periodically. Presently, I discovered that there were two individuals and that both were following the same pattern of flight. Both butterflies circled back and forth in a roughly clockwise motion, east to west, never alighting during the hour-long observation period and never flying very high. The flight was jerky and fast with a circular, zigzag pattern making the butterflies extremely difficult to capture. They eluded the net very easily. Finally, after three quarters of an hour, I managed to capture one of them, a male, and was thus able to identify the species. The remaining one I made no attempt to capture.

The two *B. toddi* paid no attention to the flowers that were in bloom. Occasionally a *P. tharos* that was present on the sneezeweed flowers would rise up to engage in aerial conflict with the *B. toddi* as they flew past, but they did not seem to pay much attention to the apparently aggressive *Phyciodes*. The *Phyciodes* also flew at the *E. claudia* very aggressively.

The two *Boloria*'s were in good condition, with very bright colors, and looked as though they were freshly emerged. According to Klots (1951, *Field Guide to the Butterflies*: 92) this butterfly is double brooded. The two individuals which I observed must have represented the second brood, since they were so fresh late in the season.

This may be a new record for *B. toddi* in the Cedar Falls area, as this is the first time I have observed the species in this area.