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MULTIPLE CAPTURE OF *HYPAUROTIS CRYDALUS* AT LIGHT

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In recent years several notes and short papers have been published in the *Journal of the Lepidopterists' Society* concerning captures of Rhopalocera at lights. I have on occasion observed *Leptotes marina* (Reakirt), *Hemiargus isola* (Reakirt), and *Hylephila phyleus* (Drury) attracted to lights at my home in Tucson. Since these three species abound in the immediate vicinity, I attached no special significance to their presence at lights. I accepted the suggestion of Throne (1961) and Welling (1963) that the butterflies had merely been awakened from their nearby resting sites.

Therefore, when John F. Burger, a graduate student in entomology at the University of Arizona, reported the capture of a female *Hypaurotis crysalus* (Edwards) at a black light he had operated on 26 June 1964 at 6,700 feet in the Pinaleno Mts. of Arizona, I dutifully recorded the information and forgot about it.

My memory was severely jolted when, on the night of 8 Aug. 1964, while collecting at a 6-watt G.E. black light at 6,050 feet in the Pinaleno Mts. my companion, Norman Seaborg, discovered a specimen of *H. crysalus* resting on the window of my car about 20 feet from the light. Since there was little activity at the light, the night being rather cool, I retired to my sleeping bag and left the vigil to Seaborg. When I awoke at 1:00 A.M. he told me that he had taken a second *H. crysalus*. While he was speaking a third specimen landed on the sheet. By 3:00 A.M. two more had been captured, making a total of five specimens of which two were females and three males. With the exception of the report of "6 or 7" *Pieris rapae* (L.) at a street light mentioned by Phillips (1962), this represents the largest number of a single species of butterfly at a light on one night which I have seen recorded.

A superficial search of the immediate area early the next morning

failed to turn up a single specimen of *H. crysalus* and there was no abundance of the oak on which the species apparently feeds higher on the mountain. It seems extremely unlikely that five specimens of this species would have chosen resting sites within a few feet of the light considering the apparent scarcity of the species in the area by day. Higher on the mountain we found numerous *H. crysalus* resting on the oaks.

The behavior of the butterflies which were taken at light was quite different from the "... lively beast, darting out from its perch in the tops of oaks at the slightest provocation" described by Brown (1957). At the light the butterflies seemed stupefied and reluctant to move. They were easily captured with a cyanide jar and had to be nudged from the sheet. This lethargic behavior of butterflies at light was also noted by Andersen (1960), Donahue (1962), and Mather (1959). This would seem to indicate that a factor is operating other than a belief on the part of the insect that morning has arrived and it is time to get about the business of the day. An inability of the insect's eye to adapt itself to the light suggests itself but presents the paradox of a diurnal insect with a light adapted eye under normal daylight conditions and a loss of this adaptive ability under artificial light conditions. If the lethargy of the butterfly were due to low temperature then it is difficult to explain the phototactic response which caused the insect to fly to the light.

It seems futile to speculate further at this time on possible explanations of the phenomenon of butterflies attracted to light. If the answer is to be found it will probably require rather sophisticated morphological and physiological investigations. Considering the observed behavior of *H. crysalus*, this species might prove to be particularly suited as an experimental organism.

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