

OBSERVATIONS AND RECORDS OF BUTTERFLIES ATTRACTED  
TO LIGHT IN INDIA

by JULIAN P. DONAHUE

Recent papers by THRONE (1961), ANDERSEN (1960), and MATHER (1959) have recorded observations of North American butterflies attracted to light at night. This paper will present new observations of Indian butterflies attracted to light, along with a brief summary of previous records. Six species of six different families are discussed.

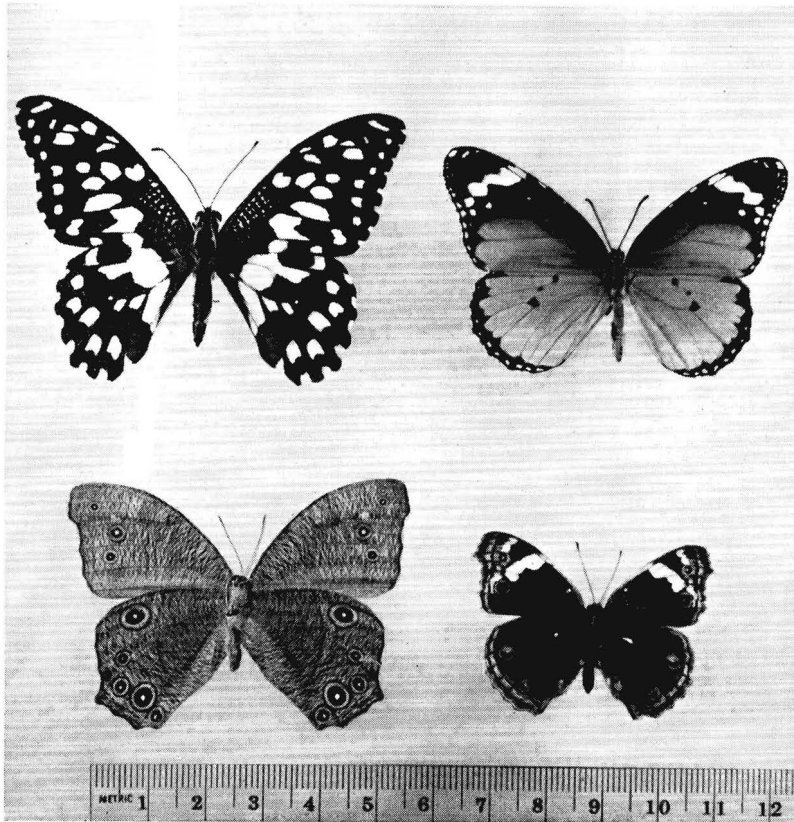
J. I. ALFREY states in a paper by BEST (1951) that he observed *Papilio demoleus demoleus* Linnæus (Papilionidæ) frequenting "Kitson oil lamps" at night, at the railway station in Jhansi (southern Uttar Pradesh State, north central India) during a migration. No date or other information was given. This species is very common throughout India, but is normally seen only in the daytime, and I have never seen it active in the evening.

USMAN (1956) records *Talicauda nyseus* (Guérin) (Lycænidæ) as being attracted to light sometime during March-May, 1955 in Bangalore (Mysore State, south India). The number of individuals attracted was not mentioned. Though this species is not common, WYNTER-BLYTH (1957) says it is locally abundant. He further states that it is a weak flyer, prefers shade to sunshine, and keeps on the wing until almost dark.

BEST (1956) mentions that a *Gangara thyrsis* (Fabricius) (Hesperiidæ) flew into his flat on Malabar Hill, Bombay (Maharashtra State, west coast) at 9 p.m., and settled on a lamp where he caught it with his fingers. The date was between early February and the end of June, 1956. WYNTER-BLYTH (1957) states that this large skipper is crepuscular — resting during the day but being active shortly after dawn and again at dusk.

In New Delhi, India, on October 1, 1961, I collected two *Danaus chrysippus* (Linnæus) (Danaidæ) at night. The first, a female, was collected at 11:05 p.m. When first noticed the butterfly was flopping about our 150 watt porch light, as a slow-flying moth would. When I returned with my net it had lit inside the shade of the light, and was less than four inches from the light. It flew out again and I had to net it in the air. It was a very "buggy" night — mostly Orthoptera and very few Heterocera. Temperature was 80°F.

At 11:30 p.m. on the same night, a male *Danaus chrysippus* was flopping about on the floor of our back porch, which was illuminated by a



TOP ROW: left, *Papilio demoleus*, New Delhi, India; right, *Danaus chrysippus* ♀, collected at light in New Delhi on 1 Oct. 1961.

BOTTOM ROW: left, *Melanitis leda*, form "determinata", underside, collected at light in New Delhi on 29 Aug. 1961; right, *Precis orithya* ♀, collected at light in New Delhi on 17 Nov. 1961.

(Scale numbered in centimeters. Photograph by the author)

60 watt bulb. When it was not flopping it rested on the floor, slowly opening and closing its wings. I let it crawl onto the rim of my net and held it up to the light, but the insect only walked slowly around the rim of the net. I nudged it off and it spiraled back down to the floor, apparently not so strongly attracted to the light as the female. Both specimens were in near perfect condition. This species is one of the commonest butterflies of the Indian plains. WYNTER-BLYTH (1957) says it flies from dawn to dusk.

coast). The insect was flying around a rather dimly lit porch and was very active. The Arabian Sea was about 150 feet away.

*Melanitis leda* is common throughout India, but is strongly crepuscular in its habits. It only begins flying at dusk, and I have often watched numbers of them flying about until it was too dark to see them any more. WYNTER-BLYTH (1957) said that this species is “. . . so common in certain areas as to be a nuisance around lights in the evening” (page 123).

#### SUMMARY AND DISCUSSION

Only a few general observations and comments can be made at this time. It will be noted that three of the species discussed (*Papilio demoleus*, *Precis orithya*, and *Danaus chrysippus*) are normally sun-loving species and retire at dusk, while crepuscular activity is recorded as normal for *Gangara thyrasis*, *Talicauda nyseus*, and *Melanitis leda*. However, it appears that some of these last three crepuscular species (especially *M. leda*) are more active at night than the three sun-loving species. In other words, from the data available it appears that crepuscular species occur more frequently at lights, which is what one might be led to suspect.

Most of the observations that were accurately dated (*M. leda*, *D. chrysippus*, and *Precis orithya*) were made either during or soon after the rains of the southwest monsoon (about mid-June to mid-September), when the majority of annual rainfall occurs in India. However, I have not had the opportunity to make observations during the spring and dry season (around February to June). It might also be noted that in arid areas, where my observations were made (New Delhi), butterfly numbers are greatest during the monsoon season, when there is an abundance of food. In this instance, therefore, the population peak coincides with the rainy season, and either one or both of these factors may influence the activity of certain species at lights.

For *M. leda*, the temperatures at time of attraction to lights ranged from 64°F. to 81°F., a spread of 17 degrees. However, from November 2, 1961 until the preparation of this paper (early February, 1962) I have not recorded any species attracted to our house lights in New Delhi. This is the winter season; the temperature between 10:00 p.m. and midnight is usually between 45° and 50°F., and may drop to near freezing before morning. A check of the immediate neighborhood has shown that the three species for which I have recorded observations do not appear to be present during the winter as active imagines. Tempera-

ture probably has some effect upon the nocturnal activity of the species in question.

THRONE (1961) suggests that a butterfly may fly to a light if it is disturbed at night, and is near the light in the first place. This may be so in some instances, but in other cases the butterfly probably would have to expend some effort to reach the light. For example *Gangara thrysis* flying into a room, and most of the butterflies observed on our porch — *Precis orithya*, *M. leda*, and *D. chrysippus* — which would have had to have flown over 50 feet, over a hedge, from the nearest spot that these species normally frequent. Granted, they may have settled on the property at dark, but in that case the only thing to disturb them would have been an occasional cat.

Further observations and experimentation will undoubtedly aid in the interpretation of this interesting phenomenon. A thorough search through literature on Indian Lepidoptera may produce further obscure references to butterflies being attracted to lights at night.

#### ACKNOWLEDGEMENTS

I would like to thank Dr. H. M. HARRIS of The Ford Foundation, New Delhi, for reviewing this paper.

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