

A NOTE ON THE SYSTEMATIC POSITION OF THE  
BUTTERFLY GENUS *CALINAGA* (NYMPHALIDÆ)

The genus *Calinaga* Moore has been assigned positions within the family Nymphalidæ (*s.s.*) by various authors, including SCHATZ & ROEBER, FRUHSTORFER, and MOORE. It has been placed in the "family" Danaidæ (Clark, 1947), and has been considered to represent a separate family, Calinagidæ, between the "families" Argynnidæ and Danaidæ (Clark, 1948). The present author (Ehrlich, 1958b: pp.346, 350-353) places the genus in a monobasic subfamily of the Nymphalidæ (*s.l.*) and, on the basis of characters of the adult integumental anatomy, suggests its close relationship to the subfamilies Satyrinæ and Morphinæ (*note* — through an error in making up the figure the positions of the names Charaxinæ and Calinaginæ have been reversed on my diagram of relationships [EHRlich, 1958a and 1958b]).

At the time of his study, the author was unaware of any data on the early stages of *Calinaga*. Recently Mr. TARO IWASE has been kind enough to point out the work of C. L. LEE (1958) on the life cycle of *C. buddha* Moore, and to forward copies of LEE's illustrations of the larva and pupa. The larva clearly shows the bifid tail characteristic of satyrines and morphines, and also twin cephalic processes which are also often found in these groups. The pupa is almost egg-shaped, not unlike that of a *Morpho*. If substantiated, these characters would tend to support the idea that *Calinaga* is related to the morphine-satyrine stem of the nymphalid diagram of relationships.

The difficulty in placing various nymphalid genera emphasizes the general uniformity of this superficially diverse group. This is quite probably due to the overall success of the Nymphalidæ. Selective extinction apparently has not yet had time to create the gaps that the taxonomist finds so useful in separating organisms into nomenclatorial pigeon-holes.

*Literature Cited*

- Clark, A. H., 1947. The interrelationships of the several groups within the butterfly superfamily Nymphaloidea. *Proc. Ent. Soc. Washington* 49: 148-149.
- ....., 1948. Classification of the butterflies with the allocation of the genera occurring in North America, north of Mexico. *Proc. Biol. Soc. Washington* 61:77-81.
- Ehrlich, P. R., 1958a. The higher systematics of the butterflies. *Lepid. News* 11: 103-106, 1 fig.
- ....., 1958b. The comparative morphology, phylogeny and higher classification of the butterflies (Lepidoptera: Papilionoidea). *Univ. Kansas Sci. Bull.* 39: 305-370.
- Fruhstorfer, H., 1927. *Die Indo-Australischen Tagfalter*. In Seitz, *Die Gross-Schmetterlinge der Erde*, Band 9: 1197 pp., 175 pls. Alfred Kern Verlag.
- Lee, C. L., 1958. *Butterflies*. Dept. Ent., Academia Sinica (Peking), Publ. no.4: 198 pp., 4 pls. 198 text figs. [in Chinese — not seen].
- Moore, F., 1901. *Lepidoptera Indica*, Vol.5: 248 pp., 87 pls. London: Lovell, Reeve & Co.
- Schatz, E., & J. Röber, 1892. *Die Familien und Gattungen der Tagfalter*. In Staudinger & Schatz, *Exotische Schmetterlinge*, 2: 284 pp., 50 pls. Fürth (Bayern): G. Löwensohn.

PAUL R. EHRlich  
Dept. of Entomology, Univ. of Kansas, Lawrence, Kansas, U. S. A.