

XIX. *On the Habits and Transformations of a Species of Ornithoptera, allied to O. Priamus, inhabiting the Aru Islands, near New Guinea.* By ALFRED R. WALLACE, Esq., Corr. Memb. Ent. Soc., London.

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THIS beautiful insect is very closely allied to *O. poseidon*, Doub., of which it may be a variety. It is not uncommon in Aru, but the males fly high and rest in high trees, so that it is very difficult to capture them. The females generally fly much lower and more slowly, and it is only when the males are in pursuit of them that the former can be easily taken. It is a beautiful sight to watch a pair of these noble insects fluttering among the thick underwood, the male following every movement of his companion, generally hovering immediately over her, the golden green of his wings absolutely luminous with a brilliancy which nothing in animated nature can surpass, while the other portions are of an intense and perfect blackness in all lights, equally extraordinary and unique. The males are generally about $6\frac{1}{2}$ to 7 inches in expanse of wings; the females 9 inches, and sometimes even $9\frac{1}{2}$ inches. The genus is admirably named, for no insects resemble birds in their flight so much as these, and as they sail majestically over head they may often be momentarily mistaken for such. They frequent the damp and lofty forests; often, however, coming out into the open patches and pathways.

The larva exactly resembles in form that of *O. Heliakon*, figured by Dr. Horsfield, except that the fleshy processes are much longer and more acute, the two dorsal rows being half an inch long. The colour is a rich purple or vinous black. On the seventh segment is an oblique reddish-white band, from the spiracle to the base of the dorsal process, which it incloses. The basal half of all these processes is crimson. The retractile tubercles at the back of the head are short, obtuse, Y-shaped, and of a transparent blood-red colour. They are exerted as in *Papilio*, and have no *separate sheaths*, a character which has been given by Boisduval to the genus *Ornithoptera*, on Dr. Horsfield's authority, in the case of *O. Heliakon*.

The larva feeds on a climbing plant, not observed in flower, but which has the habit and foliage of an *Aristolochia*.* It is sluggish in its movements, and feeds at intervals day and night. When about to change its form it seeks some neighbouring tree or shrub with a stronger and more rigid leaf, from the under surface of which it suspends itself in an inclined position approaching to horizontal. The two ends of the suspending thread are fastened at the same point on the midrib of the leaf, and the loop passes completely round the insect, as in all other *Papilionidæ*, and is not fastened to a tubercle on each side of the pupa, as stated by Boisduval, on the authority, I presume, of Dr. Horsfield. As the larva makes the thread and attaches it before escaping from its skin, any other mode than the usual one would seem to be impossible. The mistake has probably arisen from the weight of the pupa causing the fine sharp thread to be almost buried and hidden in its newly-formed soft skin. In the pupa case, which I have preserved, it may be distinctly traced round the back, forming a perfect loop.

The pupa is of a rich brown colour, on the back ochre-yellow, with the points and tubercles nearly black. It is very bulky, and nearly 3 inches long. Two specimens which I bred both produced females, and a third, also a female, was unable to free itself from the pupa case. Its duration in the pupa state is exactly a month (twenty-nine or thirty days), a very long period for a diurnal *Lepidoptera* in the tropics.

It would thus appear that there are no characters in the larva or pupa to separate *Ornithoptera* from *Papilio*; but the large size of the perfect insects, their long and powerful legs, the large anal valve of the males, their uniform and characteristic form, their striking colours and their limited geographical range, are, I think, sufficient reasons why the genus should be kept distinct.

* I have since seen the flower. It is an *Aristolochia*.