

view held by Messrs. Bates, Wallace, Trimen, and others, that resemblances of this kind are due to the assimilation of species in need of protection to the pattern of others which, owing to their odour, taste, or uneatable aspect, enjoy immunity from the attacks of insect enemies. This character consists in a longitudinal orange streak, so placed upon the abdominal area of the hind wings as to simulate (when the butterfly is in repose) the orange ventral surface of the abdomen in the moth; the same character may also be seen in *Papilio laglaizei*. If the *Papiliones* in repose retained the same flattened wing surface as do the species of *Alcidis*, it is obvious that the orange streak would rather hinder than assist the resemblance between the two; it is, however, well known that the abdominal border in *Papilio* is in this position so folded that the streak would appear to be on the body.

“ One must not, however, overlook one fact in connection with this question, and that

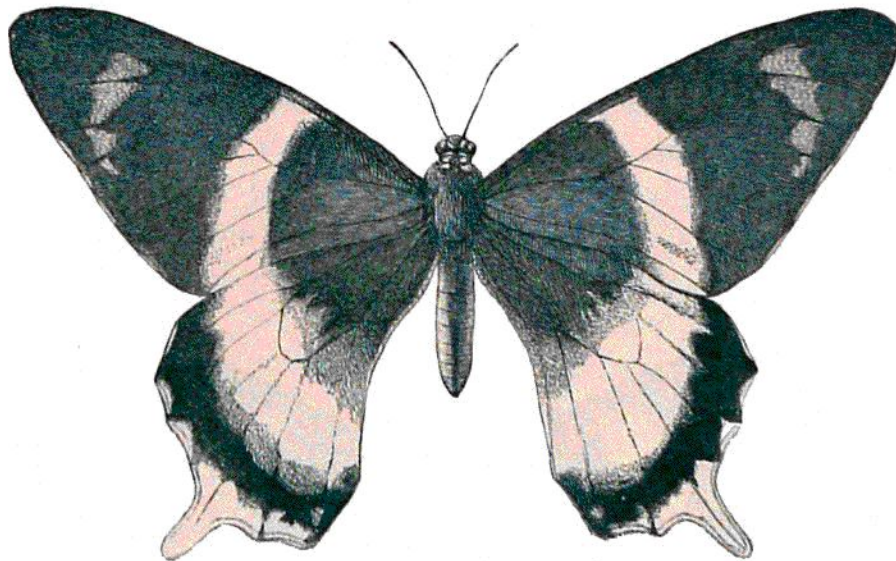


FIG. 194.—*Papilio alcidinus*, A. G. Butler.

is the fact of the apparent rarity of these copying Papilionidæ. If it be of great importance for one species to resemble another, inasmuch as that thereby the copying species shares, in common with its model, immunity from evil, one would naturally suppose that this advantage would be evidenced by abundance of specimens. It seems to me, however, that on the other hand, if the numbers of the butterfly and moth were equal, many of the former would fall victims to the inexperience of young birds before the association of an evil taste or smell with such a type of coloration was discovered; this would greatly reduce the number of the butterfly, whilst the moth escaped.¹ On the other hand, many of the butterflies which resemble Euploëinæ appear to be abundant; and I think we must look for the explanation of this in the abundance of examples in the species of that group, coupled with the abundance of species all much alike, and therefore repre-

¹ In fact, the young birds are taught by the parents, and thus profit by accumulated experience.—H. N. M.