

giraffe was exalted because of its tongue, or of the sensitive papillæ! If a *Lycænid* butterfly, expanding half an inch, has papillæ on his tongue twice as long in proportion as his great neighbour *Papilio*, he probably has need of them, and it is pleasant to think he has got them, and is comfortable, and his gastronomic enjoyment big for his size. Surely that "prime feature" does not outweigh the "curious resemblances" spoken of as running through the whole life history.

The resemblance between the pupating habit of the *Papilionidæ* and the *Hesperidæ* must be a very obscure and distant one, if, as is stated in *B. N. E.*, 72, it has been observed by no author save Mr. Scudder. The facts have been known from the day of Linnæus to every systematist; but no one has thought of any particular resemblance between the styles of pupating. And now that Mr. Scudder expatiates eloquently upon it, I, for one, fail to see the point. There are attachments of the pupæ that are clear, but they are very different. But allowing all that the author claims, inasmuch as he denies that he has ever said that the *Papilionidæ* were evolved from the *Hesperidæ*, one of these modes of attachment cannot have grown out of the other; one is no advance on the other. It is held that both families were evolved out of a "common stock," but what feature that stock had no man can tell.* It may not have been a moth; but the moths and butterflies may both have arisen independently from something else and now unknown. Any resemblance, therefore, whether distant or near, must be charged to the conditions and environment when the types of these families first appeared, and of that we can and shall know nothing. "The necessities" may as well have been "overwhelmingly great" in this case as in the one cited by Mr. Scudder, and being the same for both types, there may have resulted a form of attachment suited to each, and bearing some resemblance. But this involves no relationship. In other words, resemblance is not identity, nor does it imply identity.

As the argument runs, the moths pupate inside a cocoon, with no

* I am informed by Prof. J. A. Lintner that suspension of pupa is very rare among the moths, but that cases occur in which certain members of a family are suspended by the tail alone, and others of same family by both tail and girdle. "In the *Geometridæ*, the pupa of the *Ephyridæ* is suspended by the tail, and in some of the species there is also a transverse girdle as in the *Papilionidæ*." That is a queer state of things if one mode of suspension is more advanced than the other, or than none at all. Among the moths what are called the higher families are not suspended. Some pupate naked, some in cocoons, and neither mode implies rank.