

principal results in the specialization of the lepidopterous wing (1896-1900) and claims that by applying these tests in connection with the zoological principle of convergence (previously very generally neglected by writers on the Lepidoptera) he has been able to give a clearer picture of the development of the butterflies and a firmer, more natural classification than any offered by others. The preface to the new Palearctic Catalogue, by Staudinger and Rebel, recognizes this fact, saying that "for the retention of the Papilionids at the beginning of the Rhopalocera, and for the arrangement of this group altogether, Grote's recent phylogenetic studies are authoritative" (l. c., p. X.). By showing from his wing-studies, a parallelism in development of the two main lines he separates in the butterflies, the author believes he has terminated the controversy as to whether the Papilionids or Nymphalids are "highest." In demonstrating that the *Papilionides* are a closed, the *Hesperiades* an open, group to the moths, the sequences adopted among others by Hübner, H.-S., Meyrick, Hampson, Scudder, Reuter and the Philadelphia List* are invalidated. We were, indeed, "familiar," as recently stated in print, with the commencement by *Papilio* in catalogues, as well as in works of Linné, Fabricius, Boisduval, W. H. Edwards, etc., but we were *not* previously "familiar" with its proper reason, which it is the aim of science to expose. It will be more correct, however, in future to inaugurate the Papilionid series with *Parnassius*, this showing the most specialized structure. The Papilionid forms which mimic Nymphalids, and they are many, are younger than the forms they copy.

The author has shown that in the Pieri-Nymphalid stem, the Pierids are the ascending and neurationally more advanced group, while in the Lycaeni-Hesperids, belonging to the same main line, the Blues take up the corresponding position. A synthetic type has been detected by the author in *Nemeobius*, proving the identity of the line itself. In the first main line, that of the Papilionides, the Parnassians are the more advanced and presumably the more modern group, while *Ornithoptera*, contrary to received opinion, has proved to be the more generalized form (cf. Proc. Am. Phil. Soc., Oct., 1899). The present paper under review elucidates some discrepancies in nomenclature between the new Catalogue and the final results of the author on the classification of the butterflies as

*"Dr. Skinner has placed the Nymphalidae at the head of the Rhopalocera, and, in my opinion, correctly so."—Ed. Phil. Check List. The list commences with the Linnads, which are generalized forms, of which fact neither Dr. Skinner or the editor seem to have been aware.