

Mr. S. H. Scudder stated that he had purposed to watch the transformation of our grasshoppers, during the coming summer, to determine the relative rank of the families of Orthoptera. All entomologists, German as well as French, English and American, have placed the Forficulina (unless distinguished as a separate order) at the head of the group, the Blattina second, the Phasmidæ and Mantidæ third, the Gryllodea, Locustina and Acrydii last. Burmeister and De Haan have changed the order of the latter families, but the general arrangement remains the same.

Graber has recently published* some observations which bear directly upon the point, but he has drawn no deductions from them. His studies on the transformations of these insects lead him to divide them into two groups, the saltatorial and non-saltatorial orthoptera.

In the latter group, the first indication of wings in the young insect is a slight expansion of the outer hinder borders of the dorsum of the meso- and meta-notum; this grows larger with succeeding moults, and, just before the final moult, becomes an extensive lappet, which shows no sign of disruption from the segments; the veins of the future wing are already mapped out, but they are only horizontal dorsal extensions of the thoracic segments. In the former group the wings arise as little lappet-like vertical extensions of the pleura of the meso- and meta-notum, and are directed slightly backward; in a second or third period they become separated by a suture from the segments of which they are but prolongations, and in the succeeding stages the wings are bent over, separated clearly from their segments as proper appendages, and assume a dorsal, horizontal or roof-like position instead of their former lateral and vertical one. They have left the embryonic position retained by the other group through life, and have attained a higher one. The saltatorial orthoptera must then be placed above the other groups of orthoptera, contrary to the usage of all previous writers.

The Custodian announced the purchase of a large collection of birds, reptiles and insects, obtained by Dr. C. H. Van Patten during his residence in Guatemala.

*Zur Entwicklungsgeschichte und Reproductionsfähigkeit der Orthopteren. Sitzungsber. der K. Akad. der Wissenschaften zu Wien; Math.-naturw. Classe; Band LV., 307.