

attendants who followed carried clusters of ripe dates, and flat baskets of osier-work filled with pomegranates, apples, and bunches of grapes. They raised in one hand small green boughs to drive away the flies. Then came men bearing hares, partridges, and dried locusts fastened on rods. The locust has ever been an article of food in the East, and is still sold in the markets of many towns in Arabia. Being introduced in this bas-relief amongst the choice delicacies of a banquet, it was probably highly prized by the Assyrians."

Mr. Douglas also read the following translation from the '*Entomologische Zeitung*' for April, of a "Report by Professors Goeppert and Cohn, of a Lecture by Professor von Siebold on Strepsiptera, at a meeting of the Silesian '*Gesellschaft für vaterl. Cultur*,' at Breslau, on the 9th of February."

"The Strepsiptera form such a remarkable and isolated group of insects, that the oldest French and English entomologists, who were the first to draw the attention of the naturalist to these exceedingly rare insect-parasites, raised them into a distinct Order. In Germany they remained almost entirely unnoticed; indeed, the ignorance of this interesting group was so great, that up to a very late period no account of it exists in any German zoological hand-book. The lecturer, at different times, in journals and papers of scientific Natural-History Societies, has published his observations upon the very singular organization of the Strepsiptera, so different from that of all other insects, and upon the history of their wonderful propagation, without having had here in Germany these communications completed or extended by others; whilst in England, they appear to be peculiarly fortunate in discovering and observing these insects. Through the researches of English entomologists, we know up to this time 14 species of Strepsiptera, in 5 genera; among which are 11 European species. In order not to repeat what the lecturer published on the Strepsiptera some years since, he referred to the last paper on the subject in the Proceedings of the '*Naturforschenden Gesellschaft of Danzig*,' Bd. iii. Heft 2, 1839; later in the '*Entomol. Zeitung*,' 1843, p. 113, and in Wiegman's '*Archiv für Naturgeschichte*,' 1843, Bd. i. p. 137. Herr von Siebold has continued, in Freiburg, the investigations into the Strepsiptera which he had commenced in Danzig and Erlangen, where it was easy for him to procure his materials: here in Breslau he laboured in vain to obtain Strepsiptera; and none of the many able Silesian entomologists could give him an idea where and how to procure these insects. Herr von Siebold hopes therefore, after his approaching return to South Germany, again to renew his researches, and to be able to complete his Monograph of the Strepsiptera. The reason why he now speaks about them is, that in the last '*Catalogus Coleopterorum Europæ*,' published by the Entomological Society of Stettin, the Strepsiptera are presented as a family of beetles, under the name of '*Stylopites*.' The Strepsiptera have had the fate to see themselves classified in all the hitherto known Orders of insects, by those entomologists who would not acknowledge them to be a distinct Order. The first proposition to bring the Strepsiptera among the Coleoptera, was put forth by Burmeister (in his '*Handbuch der Naturgeschichte*,' 1837, p. 643), without giving any further reason for his supposition that they should occupy their natural position among the family Mordellidæ: he was merely led thereto by the idea that the larvæ of Strepsiptera are parasites on bees, and the larvæ of *Symbius* and *Rhipiphorus*, belonging to the Mordellidæ, also live as parasites, the former on *Blatta*, the latter on *Vespa*. This view of Burmeister has recently been supported



in England, by Newman ('Zoologist,' 1850, p. 2684), who endeavours to prove that the Strepsiptera are genuine Coleoptera. We find the grounds of his arguments stated in extracts in the entomological 'Jahrsbericht' of Wiegman's 'Archiv,' (1851, Bd. ii. p. 200). Herr v. Siebold is not convinced by the reasons given, that the Strepsiptera are beetles. The resemblance of the larvæ of Strepsiptera to those of Meloë is referred to, but that is only very superficial; the latter have the parts of the mouth distinctly developed, in the former they are entirely wanting. In both sexes of beetles the parts of the mouth are always developed into very perfect biting organs; in the male of the perfected Strepsiptera they are reduced to two rudimentary jaws, and in the female they are entirely absent. The prothorax in all beetles is seen very strongly developed, and the upper part forms a large surface, furnished with many characters indicative of genera and species; while, in the Strepsiptera, this upper side of the prothorax has almost entirely vanished. The reduced and somewhat spirally twisted fore wings of the Strepsiptera are very movable appendages, and occupy the position of anterior halteres (Schwingkolben), corresponding to the hinder halteres of the Diptera; in beetles, the fore wings are simply coverings for the hind wings, and in flight are merely lifted up and held immovable, whether they are diminutive or not. All the male Strepsiptera want the claws of the last joint of the tarsi, an apparatus so necessary for Coleoptera, which use their legs in running, climbing, and clinging, that all species are provided therewith; moreover, they live for months, and even years, after they have thrown off their pupa-covering, whereas the male Strepsiptera, from the moment they emerge from the pupa, flutter incessantly, and do not live longer than a day. Though Herr v. Siebold is now convinced that the Strepsiptera are not Coleoptera, he still thinks that the attempt made by entomologists to place them in that position, must be borne with, and even received with welcome, as it has very good practical advantages, from which science may very shortly derive benefit. Hitherto, the entire group of Strepsiptera has been neglected in an unprecedented manner by German entomologists, but now, since Coleopterists find the Strepsiptera incorporated into the Catalogue of Coleoptera, they will be induced to adorn their collections with these pretty little creatures. They will now pay attention to these insects, will capture and pin them, and so must study the circumstances of their existence; they will be compelled to observe them, and the insects in which they live, with the greatest attention, for this is absolutely necessary, if they wish to possess winged Stylopidae. In this way, observations and communications respecting these hitherto little known creatures will be amassed, from which hereafter the scientific position of these insects will stand out with greater certainty. As the lecturer has already been called upon by several Coleopterologists to indicate some means by which these Strepsiptera may be procured, he thinks it right to recommend the following method of rearing them, which has even now proved to be very useful; as it is only by breeding that one can obtain possession of the winged males, for, on account of their smallness, tenderness, and short, hidden life, they can only very rarely and casually be taken at large. In the first place, a spacious, light, and airy cage or apartment (Zwinger) must be prepared, in which flowering Umbelliferae (which are eagerly sought by Hymenoptera) may be placed, and kept fresh by water in glasses; then, nothing must be thought of the trouble of catching the Apidae and Andrenidae which frequent the flowers of the shallows, and examining whether they are Stylopized or not, and then carefully placing in the afore-said cage those which are Stylopized, which may easily be distinguished from those that are not Stylopized. One proceeds in the same manner with the Stylopized



Vespidæ (*Polistes gallica*) and Sphegidæ (*Ammophila sabulosa*), which are found abundantly on Umbelliferæ. These insects, although as captives they at first miss their usual employment and care for their brood, live in their cage for several weeks, especially if they are from time to time supplied with fresh flowers of Umbelliferæ spread over with pounded sugar. Being accustomed to work, they are thus provided with employment; they busy themselves on the flowers, and lick up the sugar, and their life is prolonged as long as possible, so that the pupæ of the Stylopidae contained in their bodies obtain time to develope, and (in the case of the males) emerge as winged insects. The Stylopized Hymenoptera are known in the following manner:—The larvæ of Strepsiptera living as Entozoa in the cavity of the hinder part of the body of Hymenoptera, eventually, when about to assume the pupa-state, with the fore part of the body pierce through the soft portion between the hinder segments of the body of their foster-parent, where they continue to remain, so that the ever wingless and footless females end their lives there; the males, after a time, thrust the prominent forepart of their pupa-case out of the hinder part of the body of their foster-parents, and flutter out of their confinement. The Hymenoptera which are burdened with male pupæ, are known by the dark brown conical fore ends of the pupa-cases projecting between the segments of the bodies of the bees and wasps; the female Strepsiptera are distinguished by the light brown scale-formed projecting fore part of the body, which remains unchangeably fixed, whilst the conical fore part (cephalothorax) of the male pupa breaks off upon the exclusion of the perfect insect.”

Herr Schiödte, of Copenhagen, who was present as a visitor, made a few remarks in favour of the proposition that the Strepsiptera should be associated with the Coleoptera; observing that the characters of the latter Order are possessed generally by the Strepsiptera, though some are in a rudimentary state only, laying stress upon the form of the mouth and the metamorphosis, as more essential characters of the Coleoptera than the large prothorax; and arguing that in such a matter as the position of the Strepsiptera, the most essential characters of all the Orders, and not the minute detail, should be considered and compared: from which he was led to believe that the Strepsiptera, though apparently in some respects anomalous, were more nearly related to the Coleoptera than to any other Order; and that the opponents of this view should show that any of the characters of the Coleoptera are not represented in the Strepsiptera.

Mr. Waterhouse briefly opposed the junction of the Strepsiptera with the Coleoptera, confining himself chiefly to the different development of the prothorax in each Order, the form of which he considered very characteristic of different groups.

Mr. Westwood also made some similar observations: and argued that the Strepsiptera were more nearly allied to the coarctate Diptera.

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September 5, 1853.

J. O. WESTWOOD, Esq., Vice-president, in the chair.

The following donations were announced, and thanks ordered to be given to the donors:—The ‘Zoologist’ for September; by the Editor. The ‘Literary Gazette’ for