Before describing the various species dredged by the Challenger Expedition, it may be as well to mention that the Brachiopoda have been divided by Bronn into two great groups termed *Apygia* and *Pleuropygia*. Professor King, considering these to be inadmissible on certain grounds, substituted the name *Clistenterata* for the first group, on account of its including animals that are destitute of an anal aperture; and the term *Tretenterata* for the second, as it embraces animals provided with this opening. The former division contains species which have their valves articulated, and belong to the following genera and sub-genera—*Terebratula*, *Terebratulina*, *Waldheimia*, *Terebratella*, *Magasella*, *Laqueus*, *Megerlia*, *Kraussina*, *Bouchardia*, *Platydia*, *Argiope*, *Cistella*, *Gwynia*, *Thecidium*, *Rhynchonella*, and *Atretia*, among the recent forms. The latter division comprises species with unarticulated valves, such as *Lingula*, *Glottidia*, *Discina*, *Discinisca*, and *Crania*. Some very important modifications in the animal connected with these divisions, especially in what relates to the muscular system, are fully detailed in the anatomical memoirs to which we have already referred.

Long experience has shown that the subdivision of the large family TEREBRATULIDÆ into different genera and sub-genera, is not only necessary but fully warranted by the important differences assumed by the animal as well as by its skeleton or the calcified support of the labial appendages. It is, therefore, my firm belief that we are justified in maintaining *Waldheimia* as a distinct genus or section from *Terebratula*, just as much as to maintain *Terebratella* as distinct from *Terebratula* or *Waldheimia*. I, consequently, regret not being able to agree with my distinguished friend, Dr Gwyn Jeffreys, who seems inclined to unite the two first-named genera under the single name *Terebratula*, nor can I coincide with his statement (Proc. Zool. Soc., April 1878, p. 398):—"It is notorious that *Terebratulina* and *Waldheimia* gradually pass one into another, as well as into the main or typical genus *Terebratula*." My long study of the group would lead me to a completely different opinion, for not only are the differences presented between the animals of *Terebratula* and *Waldheimia* very great, but the characters of their loops are equally distinct. In *Terebratula* the loop is very short and simple, as is likewise the case in *Terebratulina*, while in *Waldheimia*, as so well shown by Herman Friele and by Mr Jeffreys himself, it has to go through a very complicated series of changes in the process of its development prior to attaining its full-grown and final condition, namely, that of a long, simple reflected loop. It also supports the principal branches of the labial appendages throughout their entire length, which is not the case in *Terebratula* or *Terebratulina*. There exists also in the dorsal valve of *Waldheimia*, a median septum which is not present in *Terebratula*, and which is a constant help to the Palæontologist, enabling him, without seeing the interior of the shell, or its animal, to distinguish in the fossil condition species that belong to *Waldheimia;* a dark median longitudinal line being generally observable through the thickness of the shell, and extending from the umbo to about one-third of its length. This is