

never seen in either *Terebratula* or *Terebratulina*. There are, likewise, important differences between the two genera in the shape of the cardinal process and hinge-plate. The characters of a genus must be taken from the full-grown animal and its shell, and not from its immature condition, for, prior to its having attained its real and final character, it has to pass through various and gradual changes. No one would describe a frog from its young or larva, or when the tadpole presented a fish-like form, without feet or legs, nor would the zoologist describe the animal or the loop of a fully-developed *Waldheimia* from its early stages of development. Dr Jeffreys adopts *Terebratella* as a distinct genus, while he considers *Waldheimia* as only a sub-genus of *Terebratula*. In my opinion the differences between *Waldheimia* and *Terebratula* are even greater than those separating *Terebratella* from *Waldheimia*.

In vol. iii. of the *Geologist* (p. 441, 1860), Mr Charles Moore made some observations On the Development of the Loop of *Terebratella*, having previously submitted for my inspection, opinion, and illustration, several examples of a small species he had discovered in the Oolites of Hampton Cliff, near Bath. I made the enlarged drawings which were subsequently badly reproduced in pl. xiii. of that periodical. Mr Moore's observations and my illustrations proved that a certain modification of the loop takes place prior to its having attained its final and full-grown condition. In a subsequent paper by Mr C. J. A. Meyer, entitled On the Development of the Loop and Septum in *Terebratella* (*Geol. Mag.*, vol. v. p. 268, 1868), the author dissents from the views expressed by Mr C. Moore, and adds: "With regard, therefore, to the attachment or non-attachment of the loop at different ages of the shell in the sections *Waldheimia*, *Terebratella*, &c., the rule appears to be that the loops are either constantly attached to the septum, as in *Terebratella*, *Megerlia*, &c., or constantly free, as in *Waldheimia*;" but this is a mistaken view. Dr S. P. Woodward and I observed in 1853, that a modification in the development of the loop of the sub-genus *Terebratulina* took place from the young to the adult, for we showed that when quite young, and up to a certain age, the loop was very short and simple as in *Terebratula*, but that with age it was rendered annular by the gradual union of the oral processes. The subject was, however, in 1875, seriously taken into consideration by Herman Fricke,¹ when he pointed out that the skeleton of *Waldheimia cranium*, Möll., and *Waldheimia septigera*, Lovén, underwent a peculiar change, that the apophysary system exhibited a much more complicated construction at an early stage of growth, than at that of maturity. In a subsequent paper, illustrated by six well-drawn plates, H. Fricke continues his investigations on this important question,² and states: "Having resumed the study of *Waldheimia*, I have become satisfied that my description given of the young state of the apophysary system

¹ Bidrag til Vestlandets Mollusk fauna, Christiania, Videnskabs-Selskabets Forhandlinger.

² The Development of the Skeleton in the Genus *Waldheimia*, Archiv for Mathematik og Naturvidenskab. Christiania, 1877.