them as great separate groups of distinct origin. Neumayr seems almost alone in this opinion. On the contrary, I regard the Desmodonta as derived from certain Heterodonta, and the close resemblance in the structure of the two series prevents me from separating them.

Finally, it will be seen that the forms with rudimentary gills belong to the terminal groups: Clavagellidæ, Cuspidariidæ, Poromyidæ, Tellinidæ, Lucinidæ, which is contrary to the opinion of Von Jhering, who regarded the latter as primitive.[1] But these terminal groups have distinct origins, as the phylogenetic table suggests, and cannot possibly be united in any natural classification.

III.—CONCLUSIONS.

As the subject is still new, and hitherto but little investigated, we cannot yet presume to formulate general and final conclusions. But few deep-sea Molluscs have as yet been studied, and many researches must still be undertaken before definite generalisations can be ventured.

Having made these reservations, I think, nevertheless, that in order to sum up the facts discussed above it is necessary to attempt to formulate certain results. From the observations which I have made on the Mollusca[2] from the deep sea, I conclude :—

1. An organ of special sense, the organ of vision, may atrophy and disappear, in consequence of the absence of sufficient light in the great depths: *Guivillea* and certain forms of *Pleurotoma*, *Fossarus* (?), and *Puncturella*, among Gastropoda; *Amusium* among Pelecypoda.

2. Correlatively, the organs of general sense may multiply and acquire a high degree of development: labial palps of *Trochus infundibulum;* siphonal tentacles of varied structure in the deep-sea Anatinacea and in *Malletia*.

3. The respiratory activity may diminish and the gills become rudimentary in various ways (certain Anatinacea: Poromyidæ, Cuspidariidæ; *Cryptodon*), or may retain great simplicity of structure (*Malletia*).

[1] Vergleichende Anatomie des Nervensystemes und Phylogenie der Mollusken, p. 64.

[2] These results, especially the first and second, agree with what has been observed of other animals from the deep sea, such as Crustaceans and Fishes.