

## RELATIONS AND PHYLOGENY OF THE TUNICATA.

---

It may reasonably be expected that at the end of a Report upon such an extensive collection as the Challenger one, containing representatives of all groups of the Tunicata, I should state the conclusions at which I have arrived in regard to the relations of the Tunicata to one another, and to other groups of animals. Such conclusions are of necessity speculative in their nature, and may therefore be regarded as quite distinct from the preceding systematic and anatomical parts of the work.

I am aware that by some naturalists speculations as to the affinities and phylogeny of animals are still regarded as worthless and even dangerous; but probably such views will become rarer year by year as biology, by means of theories and reasoning, becomes more and more a true science and less of a mere accumulation of facts. I regard phylogenetic conclusions founded upon the structure and development of the animals as not only most valuable and interesting in themselves, but as exercising an important influence upon the further progress of the science. And I consider that it is the duty of a biologist, who has made a special study of a group of animals or plants, to attempt to express any views he has formed as to their relations in a phylogenetic form. Such theoretical inductions from his observations are most suggestive and helpful to other workers. If his conclusions be correct, they form an important contribution to knowledge; and if they be incorrect, they may still be useful in directing attention to points requiring further investigation, and at any rate the errors will soon be discovered and corrected by his successors.

It is only fair to those who may read my conclusions as to the relations of the Tunicata that I should state what opportunities I have had of studying the group. I have now been occupied continuously for nearly ten years in investigating Tunicata, including, besides the large and varied Challenger collection, the specimens in the British Museum, the collections sent out by the Naples Zoological Station, and by the United States Commission of Fish and Fisheries, the collections in a number of museums at home and abroad, and finally, a large number of the British and French Tunicata in a living condition. Altogether I have been enabled to dissect for myself and examine microscopically specimens of nearly every genus in the group—including all the