

forty Stations, and was of widely representative character, whether as to locality, depth of water, chemical composition, or physical aspect. Unfortunately but little attention was given to the collection of shore-sands, and the chief deficiency so far as the Foraminifera are concerned is in the species affecting the littoral zone. The dredgings, for the most part, were preserved in alcohol; some few, however, were merely dried.

The tow-net also was employed very constantly during the voyage, and the various gatherings of surface-organisms were in like manner preserved in alcohol. A large number of mountings were made on shipboard from the richer hauls, and these have since formed the most valuable source of information respecting the pelagic Foraminifera.

The "Porcupine" dredgings concerning which sufficiently accurate particulars could be obtained were referrible to about twenty-four Stations in the North Atlantic, and the material as it reached my hands consisted entirely of dried sands and muds. The Arctic soundings to which allusion has been made were in the same condition. The "Knight Errant" collections were brought home in alcohol.

The observations made by the Challenger staff upon freshly collected surface-specimens of *Globigerina*, *Orbulina*, *Hastigerina* and *Cymbalopora*, together with the figures drawn from the living organisms, have been to some extent embodied in the descriptive portions of the Report; but, except with respect to the pelagic species, there has been but little to record concerning the actual life-history of the group. The nature and condition of the preserved material have, for the most part, precluded any satisfactory investigation as to the anatomy and organization of the soft parts of the animal; hence, so far as the study of individual specimens is concerned, the following pages are chiefly devoted to matters relating to the external skeleton or test, its minute structure and general morphology, and the zoological relations dependent thereupon.

The examination of material collected under such diverse conditions has naturally resulted in the discovery of many species and even genera previously unknown; and there is scarcely a Family of the Foraminifera that has not been materially enriched thereby. The most noteworthy additions both as to number and importance have been amongst the forms which build for themselves composite tests in place of the usual calcareous skeleton,—a group of Foraminifera concerning which our knowledge has been much extended of late years. Hitherto these "arenaceous" types have been variously treated by different systematists, having been recognised by some as constituting a distinct Sub-order, whilst by others they are not admitted to any collective position. Under these circumstances the subject of Classification has demanded fuller treatment than might otherwise have been needful, and a separate chapter has been devoted to its consideration.

Much attention has been bestowed upon the distribution of the various genera and species, whether geographical, bathymetrical, or geological, and a complete or approximately complete list of the Foraminifera occurring in each batch of material has been preserved. The number of Stations forbids any attempt to arrange the whole, or indeed