

and my suspicions that it belonged to the HYDROIDS were confirmed by the examination of the remarkably rich haul of STYLASTERIDÆ obtained on the homeward voyage off the mouth of the Rio de la Plata.

In the Hydroid corals of HYDROCORALLINÆ the hard skeleton appears to be developed from the ectoderm, whereas in the Anthozoan corals, both Alcyonarian and Madreporarian, it is not so produced. It seems necessary, therefore, that the term "corallum" should not be applied to the hard skeletons of both forms alike, since the skeletons in the Hydroid and Madreporarian corals can scarcely be considered homologous. I have, therefore, applied the term "cœnosteum" to the hard skeleton of the Hydrocorallinæ, retaining the old term "corallum" for that of the Anthozoan corals, whether Alcyonarian or Madreporarian.

The present memoir is divided into three parts. The first part treats of the HYDROCORALLINÆ, giving an account of the structure of the MILLEPORIDÆ and STYLASTERIDÆ, and a list of all known species of STYLASTERIDÆ, together with descriptions of the species obtained by H.M.S. Challenger. The second part describes the anatomy of *Heliopora cœrulea* and of a species of *Sarcophyton*, and contains a discussion on the fossil corals which were probably allied to *Heliopora*. The third part deals with the MADREPORARIA dredged in the deep sea. It comprises a list of all the species dredged, with descriptions of new forms, and some account of the anatomy of the soft tissues of certain species, and a table showing the depths to which all known genera of deep-sea corals are as yet known to range. The literature relating to the matter treated of is shortly discussed in each part separately.