

determine with accuracy the conditions and distribution of Animal Life at great depths in the ocean; I now resume the facts and considerations which lead me to believe that researches in this direction promise valuable results.

All recent observations tend to negative Edward Forbes's opinion that a *zero* of animal life was to be reached at a depth of a few hundred fathoms. Two years ago, M. Sars, Swedish Government Inspector of Fisheries, had an opportunity in his official capacity of dredging off the Loffoten Islands at a depth of 300 fathoms. I visited Norway shortly after his return, and had an opportunity of studying with his father, Prof. Sars, some of his results. Animal forms were *abundant*; many of them were new to science; and among them was one of surpassing interest, the small Crinoid of which you have a specimen, and which we at once recognized as a degraded type of the *APIOCRINIDÆ*, an order hitherto regarded as extinct, which attained its maximum in the Pear-encrinites of the Jurassic period, and whose latest representative hitherto known was the *Bourguetticrinus* of the Chalk. Some years previously, M. Absjörnsen, dredging in 200 fathoms in the Hardangerfjord, procured several examples of a Starfish (*Brisinga*) which seems to find its nearest ally in the fossil genus *Protaster*. These observations place it beyond a doubt that animal life is abundant in the ocean at depths varying from 200 to 300 fathoms, that the forms at these great depths differ greatly from those met with in ordinary dredgings, and that, at all events in some cases, these animals are closely allied to, and would seem to be directly descended from, the fauna of the early Tertiaries.

I think the latter result might almost have been anticipated; and probably further investigation will add largely to this class of data, and will give us an opportunity of testing our determination of the zoological position of some fossil types by an examination of the soft parts of their recent representatives. The main cause of the destruction, the migration, and the extreme modification of Animal types, appears to be change of climate, chiefly depending upon oscillations of the earth's crust. These oscillations do not appear to have ranged, in the northern portion