

That there must have been considerable alterations in the physical conditions of the sea on these banks appears evident from the large decayed shells of an arctic form, *Pecten islandicus*, and the remains of other arctic molluscs. The enormous quantities of empty shells of more southern forms may indicate that special forces have been at work, resulting in the destruction of these animals in vast numbers. But, on the other hand, I consider it too hasty an assumption from a biological point of view to maintain that, because these forms are in other localities solely or mainly littoral forms, their extinction must have been due to subsidence of the ocean-floor. As already mentioned, the "Michael Sars" dredged from the bank large living specimens of several of the species represented by empty shells in such abundance, showing that there is still a possibility of finding the necessary conditions of existence there. And there were also some characteristic littoral forms, like *Echinus esculentus*, *Ophiura albida* and *Alcyonium digitatum*, of which the first named was in too great abundance to have been merely the result of chance.

The occurrence of these forms may perhaps be explained by the high temperature (9.33°C.) at these depths in the middle of August 1902—a temperature differing very slightly from that prevailing at the same season along the Norwegian coast in the shallower depths principally inhabited by these forms—for temperature and salinity more than depth regulate distribution. An extinct fauna of forms like these at a spot somewhere out on the plateaus does not necessarily imply subsidence of the bottom, but more likely physical changes in the sea-water. Oysters and many other forms are examples of this. A further instance may be cited from the North Sea cruise of the "Michael Sars" in 1904. At Jammer Bay, on the north-west coast of Jutland, at a depth of 14 metres, the dredge brought up great quantities of *Macra elliptica*, *Lunatia intermedia*, *Ophiura ciliaris*, *Echinocardium*, etc., along with a very large number of empty shells belonging to the mussel *Venus gallina*, of which only two living specimens were found. It would be absurd to assert in this case that mortality was due to changes of level, as this form is found elsewhere in quantities at such depths, but the numbers of empty shells point to an encroachment of unfavourable conditions. Another factor must be kept in view, namely bottom-currents, that may possibly, under certain circumstances, accumulate bottom-material such as piles of empty shells at particular localities, which would not