

of the Northern Hemisphere, much beyond 1,000 feet since the commencement of the Tertiary epoch. The temperature of deep water seems to be constant for all latitudes at 39° ; so that an immense area of the North Atlantic must have had its conditions unaffected by Tertiary or Post-tertiary oscillations.

One or two other questions of the highest scientific interest are to be solved by the proposed investigations :—

1st. The effect of pressure upon animal life at great depths. There is great misapprehension on this point. Probably a perfectly equal pressure to any amount would have little or no effect. Air being highly compressible, and water compressible only to a very slight degree, it is probable that under a pressure of 200 atmospheres, water may be even more aërated, and in that respect more capable of supporting life, than at the surface.

2nd. The effect of the great diminution of the stimulus of Light. From the condition of the Cave Fauna, this latter agent probably affects only the development of colour and of the organs of sight.

I have little doubt that it is quite practicable, with a small heavy dredge, and a couple of miles of stout Manilla rope, to dredge at a depth of 1,000 fathoms. Such an undertaking would, however, owing to the distance and the labour involved, be quite beyond the reach of private enterprise. What I am therefore anxious for is, that the Admiralty may be induced, perhaps at the instance of the Council of the Royal Society, to send a vessel (such as one of those which accompanied the Cable Expedition to take soundings) to carry out the research. I should be ready to go any time after July; and if you would take part in the investigation, I cannot but believe that it would give good results.

I would propose to start from Aberdeen, and to go first to the Rockall fishing-banks, where the depth is moderate, and thence north-westward, towards the coast of Greenland, rather to the north of Cape Farewell. We should thus keep pretty nearly along the isotherm of 39° , shortly reaching 1,000 fathoms depth, where, allowing 1,000 feet for oscillations in level, and 1,000 feet for influence of surface-currents, summer heat, &c., we should