much reason for believing that the great ocean depressions of the present time have persisted through all the later geological periods, back probably as far as the Permian Age, and perhaps much farther. If this be so, the length of time during which the vast area occupied by the abyssal fauna has maintained its continuity, and probably a great uniformity in essential conditions, is incalculable; that is to say, it can not, in the present state of our knowledge, be reduced even approximately to astronomical time.

In discussing the general distribution of temperature, the reasons have been already given which have led us to the belief that there is a constant underflow of water from the south northward, and one would naturally expect some indication of migration having proceeded, and continuing to proceed, in that direction. It is impossible to come to a definite conclusion on this question until the species in the different groups shall have been critically determined: there seems, however, to be little doubt that the families which are specially characteristic of the abyssal fauna, such as the Hexactinellid sponges, the stalked Crinoids, the Echinothuridæ, and the genera allied to *Infulaster* and *Micraster* among the Echinidea, are more abundant, and larger and more fully developed, in the Antarctic Ocean, and in the great ocean of the water hemisphere generally, than they are in the Atlantic and the North Pacific.

Our preliminary dredgings in the North Atlantic along the coasts of Portugal and Spain were chiefly on the globigerina ooze at depths under 2000 fathoms; and there we found all the ordinary forms of deep-sea life abundant, particularly sponges referable to the genera *Hyalonema*, *Aphrocallistes*, *Euplectella*, *Corallistes*, and *Caminus*. As this area had been gone over by Mr. Gwyn Jeffreys in the *Porcupine* we were already aware that stalked crinoids and corals of Tertiary types occurred.