the case, the sea was warm or cold at all depths, according to the source from which each particular layer or current of water was derived, and that in accordance with this arrangement we might have two regions separated from one another by an invisible and impalpable boundary of liquid contact, differing widely in climatal conditions, and showing all the consequent wide differences in faunæ; we found that from the surface to the bottom the water of the sea contained organic matter in solution, or in suspension, and that therefore the Protozoa, which appear to pave the floor of most parts of the sea in a continuous sheet, derived by surface absorption the soft jelly of their bodies with the same ease and from the same source as they derive the carbonate of lime and the silica of their outer casings.

These results and many others were attained or suggested by our first season's very imperfect work, and they were regarded as so interesting and suggestive that with even greater willingness than before the Admiralty placed a gun-boat at the disposal of a committee, consisting of Dr. Carpenter, F.R.S., Mr. Gwyn Jeffreys, F.R.S., and myself, for the two succeeding summers, during which time one or more of us prosecuted the same line of inquiry, confirmed the result of the previous years, and added many new facts. The *Porcupine*, which we used in 1869 and 1870, was much better suited in every way to our purposes than the *Lightning*. The weather was more favorable, and we succeeded in dredging to the depth of 2435 fathoms, and establishing the fact that even at that depth the invertebrate sub-kingdoms are still fairly represented.

Another great advance was made at this time. The registering thermometers which we used in the *Lightning* gave uncertain indications, and, on submitting them to experiment in a hydraulic press, it was found that their error depended upon their bulbs being irregularly compressed by the enormous pressure to which they were subjected, the fluid being thus forced up mechanically in the tube and giving an indication higher than