conducted through this fluid. The process by which heat is communicated through water, we have termed *convection*. When heat is applied to the bottom of a vessel full of water, the portion of the water first heated, expands in bulk, and thus becomes specifically lighter; it then rises to the top, carrying with it the newly acquired temperature; while another cold portion, sinking to the bottom, is heated in turn; and so on, till the whole mass becomes uniformly heated.

With respect to the propagation of light through water, it has been calculated, that not a tenth part of the incident light, can advance five fathoms downwards in the most translucent water; that even of vertical rays, one half is lost in the first seventeen feet; and that these vertical rays become reduced to one-fourth by traversing thirty-four feet, which correspond to the mass of an atmosphere. It thus follows, that only the hundred thousandth part of the vertical rays, can penetrate below forty-seven fathoms; which is scarcely equal to the glimmer of twilight; and that the depths of the ocean must be always in perpetual darkness.*

Such are the general principles according to which heat and light are propagated in water. But in speaking of this fluid in a former chapter, we alluded to one of the physical properties of

[•] Article CLIMATE, in the Encyclopædia Britannica.