

of curves which has been used with some slight modification in the construction of this chart.

Until very recently little or nothing has been known with any certainty about the temperature of the sea at depths below the surface. This is, however, a field of inquiry of very great importance in Physical Geography, as an accurate determination of the temperature at different depths is certainly the best, frequently the only available means of determining the depth, width, direction, and generally the path of the warm ocean currents, which are the chief agents in the diffusion of equatorial heat; and more especially of those deeper indraughts of frigid water which return to supply their place and to complete the general cycle of oceanic circulation. The main cause of this want of accurate knowledge of deep-sea temperatures is undoubtedly the defectiveness of the instruments which have been hitherto employed.

The thermometer which has been almost universally used for this purpose is the ordinary self-registering thermometer on Six's construction, enclosed in a strong copper case, with valves or apertures below and above to allow a free current of water to pass through the case and over the surface of the instrument. Six's registering thermometer (Fig. 53) consists of a glass tube bent in the form of a V, one limb terminating in a large cylindrical bulb, entirely filled with a mixture of creosote and water. The bend of the tube contains a column of mercury, and the other limb ends in a small bulb partially filled with creosote and water, but with a large space empty, or rather containing the vapour of the