

feeble, and the spines and pedicellariæ moved on the shells of the urchins, but all the animals had evidently received from some cause their death-shock. Dr. Perceval Wright mentions¹ that all the sharks brought up by the long lines from 500 fathoms in Setubal Bay are dead when they reach the surface.

Various methods have been proposed to test the actual pressure at great depths, but as all the elements in the calculation are well known, it is easier to work out the question in the study than in the field. A neat instrument was constructed for the American Coast Survey. A brass piston or plunger was fitted accurately into a cylindrical hole in the wall of a brass water-tight chamber. The chamber was completely filled with water, and a clasping index on the plunger marked to what extent the plunger had been driven into the water contained in the chamber by the extreme pressure. The required indication is no doubt given, but such an instrument is at the same time an extremely delicate thermoscope, and until lately there has been no perfect means of correcting for temperature. A more important application of the pressure gauge is to check the accuracy of deep soundings. Probably the best arrangement which has been proposed for the purpose is a long capillary glass tube, calibrated and graduated to millimetres, open at one end, and provided with a moveable index to show to what amount the air contained in the tube has been compressed by the entrance of the water. The principal objection to this device is the

¹ Notes on Deep Sea Dredging, by Edward Perceval Wright, M.D., F.L.S., Professor of Zoology, Trinity College, Dublin. (Annals and Magazine of Natural History, December 1868.)