

the sea-bed, was here accompanied by a great abundance of animal life.

I can scarcely regret that the space at my disposal will not allow me to enter at present into the many very important bearings of these physical investigations, for I am compelled to admit that I do not place thorough confidence in our results. The observations and analyses were undoubtedly conducted with great care and skill, but the difference between different samples—in specific gravity, and more especially in chemical composition and the relative proportion of the ingredients—is so very slight, that more exact methods than those which have been hitherto employed will be required to insure accurate results.

In such investigations everything depends upon the perfection of the means of bringing up water from any given depth; and the principle of the construction of the water-bottle used in the 'Porcupine' was faulty. It consists of a strong tube of brass about two feet in length and two inches in internal diameter, containing rather more than a litre and a half, and closed at each end by a brass disk. In the centre of each of these disks there is a round aperture closed by a well-ground conical valve, both valves opening upwards when the instrument is in position for being let down.

In passing down through the water, a continuous current is supposed to raise the valves and run through the bottle, thus keeping it constantly filled with the water of the layer through which it is passing. On reversing the motion in hauling up, the valves fall into their places, and the contents of the tube at the greatest depth are brought to