On looking at the cell again, about eight months later, the copper wire was found corroded through, and contact broken. In order to avoid this accident, it is well to use copper rod not less than one-eighth of an inch thick, as copper is somewhat soluble in solution of sulphate of copper (see Gray, *Phil. Mag.*, 1886, p. 389).

The corks used to support the copper and zinc rods should be carefully paraffined, and every precaution taken to prevent evaporation of the solutions.

The observation in the above table, dated May 31, was taken rather hurriedly, and Professor Ayrton considers it untrustworthy. Omitting this result, it is seen that the experimental cell has a very constant E.M.F., and that the change, after about five months, was very small.

7. On Glories. By Professor Tait.

(*Abstract.*)

When Mr Omond was appointed to the Ben-Nevis Observatory I requested him to take every opportunity of observing what are called Glories—specially noting, when possible, their angular diameters and the order of their colours, so that it might be possible to decide upon the exact mode in which they are produced.

Young, while attributing to their true cause the spurious (or supernumerary) rainbows, proceeds to say:—"The circles, sometimes seen encompassing the observer's shadow in a mist, are perhaps more nearly related to the common colours of thin plates as seen by reflection."—[*Lectures*, II. p. 645].

Now from Mr Omond's observations it appears that the mists to which the glories are due produce coronæ of, say, 2° or 3° radius;—from which it follows that the diameter of the particles is somewhere of the order $\frac{1}{1000}$ inch. It is thence shown that, were Young's explanation correct, the radii of the rings would vary with great rapidity in passing from one kind of homogeneous light to another. This is altogether irreconcilable with Mr Omond's observations.

That the glories are not of the nature of spurious rainbows is shown very simply by the fact that they are more intense as their radii are smaller.

Hence, the only possible explanation is diffraction depending on the *form* of the vertex of the reflected wave. The form of an originally plane wave, once reflected inside a drop of water is, roughly, when the central ray has just emerged, a portion of an hyperboloid of revolution, doubled back cusp-wise round its border. An approximate calculation is given, based on this assumption.

A simple first approximation to the theory of glories is given by the behaviour of a plane wave incident normally on a screen pierced with a great number of very small circular apertures of nearly equal size. They are thus, to a certain extent, analogous to coronæ.

8. Report on the Pennatulida, dredged by H.M.S. "Porcupine." By A. Milnes Marshall, M.D., D.Sc., M.A., F.R.S., Beyer Professor of Zoology in the Owens College, and by G. H. Fowler, B.A., Ph.D., Berkeley Fellow of the Owens College, Manchester. Communicated by John Murray, Esq., Ph.D.

Friday, 15th July 1887.

JOHN MURRAY, Ph.D., Vice-President, in the Chair.

The following Communications were read :—

1. Stability of Fluid Motion.—Rectilineal Motion of Viscous Fluid between two Parallel Planes. By Sir W. Thomson, LL.D., F.R.S.

27. Since the communication of the first of this series of articles to the Royal Society of Edinburgh in April, and its publication in the *Philosophical Magazine* in May and June, the stability or instability of the steady motion of a viscous fluid has been proposed as subject for the Adams Prize of the University of Cambridge for 1888.* The present communication (§§ 27-40) solves the simpler

* See *Phil. Mag.*, July 1887.