

that true hero that can be accessible to the ordinary reader.

The greatest fault of the book is that the length of the text bears no sort of proportion to the importance of the men or their possible interest to the reader. Lamarck's life is one of the most picturesque of all scientific lives: it is more heroic in quality than that of any other given in the series. Lamarck gave as much or more to natural science than any other naturalist whose name appears here; yet to this man's eventful history but fifteen pages are given, while Sir Roderick Impey Murchison, from whom the world had little profit, who will find his place among naturalists of the second or third order, has twice the space allotted to him. Singularly enough, the one man who should have the first place among the modern men is not named at all. Darwin, who could have claimed a place in all the three divisions of the book as botanist, zoölogist, and geologist, is passed by. It may be that the book was prepared before the death of this great naturalist, and thus that the date does not represent the time of its printing. This is the only possible explanation of this startling omission.

The book is well printed. It has a sufficient table of contents, but no index.

GORDON'S *ELECTRICITY AND MAGNETISM*.

A physical treatise on electricity and magnetism. By J. E. H. GORDON. Second edition, revised, rearranged, and enlarged, in 2 vols. London, Sampson Low, 1883. 343 p., 27 pl., 151 illustr.; 332 p., 46 pl., 161 illustr. 8°.

THE demand for a new edition of a work of this magnitude, within about three years of its first publication, is a sufficient indication of its real usefulness, especially when we consider the fact that the first edition was also republished in this country.

The general scope of this treatise is to detail every thing of importance which is known experimentally respecting electricity and magnetism, referring to, and following as closely as may be, the original memoirs.

The mathematical theory of the subject is omitted so far as possible; nevertheless, the connection between the experimental facts and the results of modern theory are constantly pointed out by very numerous citations and references, especially to Maxwell. Indeed, these may, perhaps, be best regarded as companion volumes to those of Maxwell, from which the reader may learn how far theory and facts are now known to be in accordance.

We feel, however, that the author's reading has been too much confined to what has been published in England, and that he has not gleaned the field with equal diligence elsewhere. For example: we find no notice of the remarkable discovery by E. H. Hall of a new action of the magnet on electrical currents.¹

The principal enlargements of this new edition are contained in the three chapters, 33, 35, and 36.

Chapter 33 contains an account of the beautiful experiments of Mr. Tribe in determining the variations of potential along the surface of a metallic conductor immersed in a fluid-cell by means of the electrolytic deposit upon the conductor.

Chapter 35 gives an account of the hydrodynamical experiments of Professor Bjerken, on the apparent attractions and repulsions between bodies which are pulsating or vibrating in a fluid, which attractions are due to the mutual action of the currents set in motion by the pulsations. The importance of these experiments lies in the fact that they afford a possible clew to the nature of the mechanism which transmits electric and magnetic forces through space. In the course of these experiments, Bjerken succeeded in imitating mechanically most of the ordinary magnetic phenomena, and showed that his field of force was similar to the magnetic field.

Chapter 36 details the subsequent researches of Mr. Stroh, respecting the same phenomena. Mr. Stroh used air instead of water as the medium in which the currents were set in motion. In this medium it was possible to explore the field of force much more completely than in water, and so to arrive at a much more exact knowledge of the facts and their explanation.

The author reserves what he has to say upon the subject of electric lighting for another work, which he has nearly completed, and which is to be specially devoted to that subject.

BASSLER'S *WEATHER*.

The weather: a practical guide to its changes, showing signal-service system, and how to foretell local weather. By S. S. BASSLER. Cincinnati, Robert Clarke & Co., 1883. 54 p., illustr. 8°.

IN spite of our ten years' familiarity with the weather predictions of the signal-service as published in the newspapers, the general reader has as yet a very slight acquaintance with the principles and methods of weather study. The official circular on the 'Practical use of mete-

¹ *Amer. Journ. math.*, ii. No. 3.