

Parsons hated to be beaten. Some of his friends, Lord Rayleigh among them, thought there was little prospect of success in the elaborate experiment on the diamond: his reply when this view was put before him was: "I think it ought to be tried." The trials were expensive. Dr. Stoney estimated that they had cost £30,000. Parsons's reply was, "We have now made a bit of money and deserve to have some fun". Within a few days of his death, he had dwelt on his hopes of having a shot at the 200-inch mirror for the proposed great telescope at Pasadena.

Lord Rayleigh tells us that his purpose has been to bring before the readers of the volume the personality of one of the greatest figures in the engineering world of this or any other time. For his successful picture he has well earned the congratulations and the thanks of his readers. Our thanks too are due to the Hon. G. L. Parsons for his skilful editing of this selection of the papers of his distinguished uncle.

R. T. G.

Manometric Methods in Biology

Manometric Methods: as Applied to the Measurement of Cell Respiration and other Processes. By Dr. Malcolm Dixon. Pp. xii + 122. (Cambridge: At the University Press, 1934.) 5s. net.

MANOMETRIC methods have long been used in biology, and when one considers that the earliest specimens of the two principal types of instruments dealt with in the book under review were devised by Barcroft and Haldane so long ago as 1902 and 1908 respectively, it might perhaps appear inappropriate to call the manometric method an essentially new one. Only during the last decade, however, have manometers become so important in many different branches of medical and biological science. The reason for this, as Sir Frederick Gowland Hopkins points out in his foreword, is to be found in the fact that the method has in that time been especially developed for the study of the time course of chemical processes, in homogeneous media as well as in more complex systems containing cells or cell-associations. In many of the fundamental chemical reactions of living cells, such as respiration, assimilation of carbon dioxide or nitrogen and many fermentations, gas exchange takes place; in others it is possible to bring about such exchanges by suitable procedure, as for example, the liberation of carbon dioxide from media containing bicarbonate as a result of lactic acid formation in glycolysis.

The main advantage of these methods for biological research is that many phenomena of cellular metabolism can be studied without

necessarily interfering with life and growth; it is especially important that many of the fundamental chemical processes occurring in animal organs are kept intact in sections of tissue. The tissue slice method is one of the many improvements of technique initiated by O. Warburg; but, independently of the development of the method in his laboratory, workers from the Cambridge School of Biochemistry, Dr. Dixon among them, had used the Barcroft differential manometer for the study of reaction rates. Much of the experience gained in this work has never before been published, and it is therefore appropriate that the detailed account of both the theory and the practical application of the differential manometer takes a prominent place in Dr. Dixon's book.

It is difficult to give a more fitting appreciation of the book than that expressed in Sir Frederick Gowland Hopkins' foreword, and it may therefore suffice here to state that it gives a complete survey of the principal types of instruments and methods as well as a critical assessment of their merits and shortcomings. There is no doubt that the book will be of great help to all present and prospective users of manometric methods.

H. B.

Antarctic Foraminifera

"Discovery" Reports. Issued by the Discovery Committee, Colonial Office, London, on behalf of the Government of the Dependencies of the Falkland Islands. Vol. 10. *Foraminifera, Part 3: The Falklands Sector of the Antarctic (excluding South Georgia)*. By Arthur Earland. Pp. 208 + 10 plates. (Cambridge: At the University Press, 1934.) 37s. 6d. net.

THE third part of this great monograph on the Foraminifera collected by the Discovery expedition deals with the area called the Falklands sector of the Antarctic Ocean exclusive of the South Georgia waters. It lies south of the convergence line where the cold Antarctic water meets the warmer water of the subantarctic area.

It was shown in the first part of the monograph that in the Falkland Islands area, north of the convergence line, there are several species of Foraminifera that are characteristic of the Pacific ocean, and in the second part that in the shallow waters round South Georgia there is no evidence of this Pacific influence.

In the Antarctic sector the Pacific species were more numerous than might have been expected and in addition to several new species, fully described in this part, there were thirteen species which seem to have a purely circumpolar distribution.

One of the most interesting results of this