

Temperatur, Salzgehalt und Dichte an der Oberfläche des atlantischen Ozeans

Lief. 1: Das Beobachtungsmaterial und seine Aufbereitung. Von Günther Böhnecke. Pp. iii+186. 27 gold marks. Atlas. Pp. vii+74 plates. 37 gold marks. (Wissenschaftliche Ergebnisse der Deutschen Atlantischen Expedition auf dem Forschungs- und Vermessungsschiff *Meteor* 1925-1927, herausgegeben im Auftrage der Notgemeinschaft der Deutschen Wissenschaft, von A. Defant, Band 5.) (Berlin und Leipzig: Walter de Gruyter und Co., 1936.)

THE temperatures on which this work is founded were observed for the larger part by merchant ships. A very large proportion were collected and partly worked up by the Royal Netherlands Meteorological Institute; the Danish Meteorological Institute, the German Seewarte and the charts published by the Meteorological Office in London with the reports of various expeditions were the sources of other material. For the area from 50° N. to the Antarctic, about 1,400,000 observations were used. The observations of salinity available were so few that it was necessary to use the earlier ones made with the hydrometer; a table of sources gives the method by which they were reduced to modern standards. This table contains 176 entries, some of which cover many ships, and should be useful for reference. The chief table gives the mean temperature and salinity for each month and one-degree square.

The results are not discussed in any way, but are shown in an atlas of beautifully printed charts. There are four charts in black and white showing the distribution of the observations, then follow thirteen in colour giving the mean temperature for the year and each month. Other charts show anomalies and yearly range. Observations of salinity are too few to allow of charts of mean values being drawn for the whole ocean for periods less than three months, but monthly charts for the North Atlantic Ocean are included. There are also charts showing anomalies and times of maximum and minimum, with a complete set for surface density.

These two volumes make an extremely valuable work of reference, and there are few questions as to the surface temperature and salinity which could not be answered by their aid.

The Chemistry of Natural Products related to Phenanthrene

By Prof. L. F. Fieser. (American Chemical Society Monograph Series, No. 70.) Second edition, with Appendix. Pp. xiv+456. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1937.) 35s. net.

A REVIEW of the first edition of this important treatise appeared in NATURE last year, and already a second edition has become necessary. The opportunity has been taken to add a 90-page survey of relevant papers of 1936, each referred to its appropriate context. The appendix with the revised index may be obtained separately, so that the first edition is not devaluated. The wisdom of adding so large an appendix is doubtful, since abstracts of the three

hundred papers cited are available, but references to certain real advances of 1936 could not well have been omitted. Several simple carcinogenic compounds, notably *o*-aminoazotoluene, have been discovered, and the range of oestrogenic substances has been considerably extended. The animal organism has been found to synthesize polyterpenes; and the first chemical transformation of cholesterol to a natural bile-acid has been realized. Outstanding has been the isolation of natural vitamin D and its identification with the irradiation product of 7-dehydrocholesterol. Certain crystalline substances from the adrenal cortex have been found to possess close structural relationship to the sterols. Moreover, the year has witnessed steady increase in knowledge of the stereochemistry of the sterols and sex hormones, and of the structures of the cardiac glycosides.

(1) **Automobile Engines in Theory, Design, Construction, Operation, Testing and Maintenance** By Arthur W. Judge. (Motor Manuals, Vol. 1.) Third and revised edition. Pp. 301. 5s. net.

(2) **Car Maintenance and Repair** By Arthur W. Judge. (Motor Manuals, Vol. 4.) Second edition. Pp. xii+283. 4s. net.

(3) **The Electrical Equipment and Automobiles: a Book on Principles for Motor Mechanics and Motorists.** By Prof. Stanley Parker Smith. Third edition, revised and enlarged. Pp. xii+250. 6s. net. (London: Chapman and Hall, Ltd., 1936-37.)

(1) MR. JUDGE presents the elementary principles of the petrol engine together with a comprehensive description of the various types used in automobiles. A chapter is devoted to the heavy oil engine, and considerable space is given to the lubrication, cooling and testing of petrol engines of all types. The text of the book is well written and adequately illustrated, and the subject-matter has been made interesting by a judicious and versatile selection of examples from modern British practice.

(2) The text of this book is clearly presented, with some 200 useful diagrams, and forms a good introduction to garage technique for the motor-car owner who desires to carry out much of his own maintenance work. The scope of the book is necessarily limited to one or two types of motor-car, and from some points of view it may be considered that the book is intended to be merely supplementary to the appropriate illustrated handbook usually supplied by the motor-car manufacturer with each model sold.

(3) This is the third edition of a book written primarily for students undergoing a course of instruction in the principles and practice of motor-car engineering. The book has been thoroughly revised and considerably enlarged in order to include the extended application which electricity now plays in the modern motor-car. It is comprehensive and thoroughly reliable, and it should prove valuable to the motorist who takes an intelligent interest in his car, as well as to the class of student for whom it was written.