

## REVIEWS OF BOOKS

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### PHYSICS OF THE EARTH - V : OCEANOGRAPHY.

(This is the fifth of a series of works published by the National Research Council of the National Academy of Sciences, Washington, D. C., 1932. Price : \$ 5.)

The work is divided into five main sections, Bottom of the Ocean, Properties of Sea Water, Movements of Sea Water, Oceanographic Instruments and Relations of Oceanography to other Sciences.

The first section, *Bottom of the Ocean*, contains articles on "Configuration of the Earth", by G. W. LITTLEHALES of the Hydrographic Office, U. S. Navy, and on "Deep Sea Deposits", by Leon W. COLLETT of Harvard University. It is regretted that Dr. LITTLEHALES, in his "Terminology for the distinctive features of the conformation of the bottom of the ocean" (p. 18), differs in some respects from those proposed by the International Hydrographic Bureau as a result of considerable correspondence with the Hydrographic Offices of the affiliated countries (see : *Hydrographic Review*, Vol. V, No 2, page 9 et seq.). For instance he retains the term *Talus* whereas *Declivity* has been suggested in lieu by the Bureau as being more embracive. His description of a Bank is a "non-rocky elevation..." whereas that proposed by the Bureau is "a plateau of any material...". The Bureau considers that a Bank should be regarded as a Primary or 1st Magnitude form except in the special case of shifting forms of silt etc., for which it may be also delegated to the secondary form but always with the qualifying term *Sand*, etc. attached to it, whereas Dr. LITTLEHALES delegates it to the secondary form only as distinctive from a Reef.

Five chapters of the book are devoted to the section : *Movements of Sea Water*, namely : "The Waves of the Sea", by R. S. PATON and H. A. MARMER of the U. S. Coast and Geodetic Survey, "Tides & Tidal Currents", by H. A. MARMER, "A summary of basic principles underlying modern methods of Dynamical Oceanography", by George F. McEWEN of Scripps Institution of Oceanography, "A survey of present knowledge of Oceanic Circulation based upon modern Physical and Chemical Observations", by Arnold SCHUMACHER of the *Deutsche Seewarte*, Hamburg, and "Ice in the Sea", by Edward H. SMITH, U. S. Coast Guard.

As stated in the Introduction, the section : *Oceanographic Instruments*, is chiefly confined to those used on the last cruise of the *Carnegie*, supplemented by information from other sources. Floyd M. SOULE, Department of Terrestrial Magnetism, Carnegie Institution of Washington, describes the methods of obtaining samples of sea water, the measurement of surface and sub-surface temperatures, current meters, meteorological instruments, tow nets and trawling gear, collection of bottom samples, and sounding machines on board the *Carnegie*. The chapter : "Additional Oceanographic Instruments", by W. E. PARKER of the U. S. Coast and Geodetic Survey, gives a short description of a new type of Mechanical Deep Sea Sounding Machine and of the "Fathometer" type of Echo Sounding Machine, also of the methods of obtaining water temperatures, water samples and specific gravity and salinity used by the U. S. Coast and Geodetic Survey. The third chapter of this section is an article by C. O. ISELIN, of Woods Hole Oceanographic Institute, on Deep Sea Bottom Samplers for obtaining long cores of deep sea mud.

The final section : *Relations of Oceanography to other Sciences*, is divided into three Chapters : "Oceanography and Meteorology", by Charles F. BROOKS of Clark University, "The relation of Biology to Oceanography", by A. G. HUNTSMAN of the Biological Board of Canada, and "The Periodicity of Oceanic spreading, Mountain making and Paleogeography", by Charles SCHUCHERT of Yale University.

The book has been well arranged and forms a valuable addition to the various works on oceanography already published.

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