

BOOKS IN REVIEW

ANNALES HYDROGRAPHIQUES (Hydrographic Annals)

Series 4, Volume 8, Year 1957. Pp. 456, ill. & diagr., 24 × 18 cm
Service Hydrographique de la Marine, Paris

The eighth volume (year 1957) of the fourth series of *Annales Hydrographiques*, published by the French Navy Hydrographic, appeared in July 1959.

This volume, announced in the September 1959 Bulletin, contains reports drawn up by the heads of hydrographic missions, and a study by Ingénieur Hydrographe en Chef Vantroys on eddying caused by a structure in a tidal sea. The latter, which was previously issued as a reprint, has already been discussed in the January 1960 issue of the Review.

The report of the *French and North African Coast Survey (1953-1954)*, by Ingénieur Hydrographe en Chef Lacombe, includes various points of interest to hydrographers.

(a) For inshore soundings, the Survey tried out two launches, one equipped with a variable-pitch propeller and the other with a gear box supplying a nearly continuous range of speeds from 2.5 to 7 knots.

Of these two systems for reducing speed, the second gave the best results. Changing the pitch of the propeller was difficult to achieve when the launch was under way, and certain spontaneous changes, particularly at the ends of lines and close to shore, were dangerous in the neighbourhood of breakers.

(b) As from August 1954, the Survey operated a Rana radio navigational chain. Extracts from the report on use of this equipment are included in Special Publication 39 (February 1956 edition) of the International Hydrographic Bureau, page 457.

(c) Between the northern approaches of Rabat and the southern approaches of Mehida, where the presence of cliffs and high dunes prevents viewing the interior from a boat inshore, the Survey was compelled to run its lines of soundings along arc of circles in order to obtain an even distribution of bottom profiles near the coast. One extremity of these arcs was occupied by a ship at anchor, and the other by a coastal signal located on approximately the same perpendicular to the shore as the ship. The arcs were used only as a guide to the sounding launch, and as the angular values of the arcs followed were not used in fixing the sounding station positions, an extra observer was required. As long as the constant angles were over 50°, the slight drift of the anchored ship did not cause appreciable differences in the line spacing.

The relatively even spacing achieved would have been impossible by taking fixes on points ashore. This alternative would have resulted in a fan-shaped pattern, with a consequent loss of time from arc to arc.

(d) In the area near Manjuriah ridge and Bouznika bank many of the shoals are long ridges with irregular crests, and a survey by conventional methods would have taken considerable time. In investigating this type of shoal, the Survey speeded up operations by using a special « raking » technique.

At a prescribed speed of 6 knots, the *Amiral Mouchez* followed lines 150 or

200 metres apart, as necessary, and oriented along the ridge crests. A launch on either side of the ship maintained its position by ranging on the patent davits, and kept its distance by vertical angles taken on the masthead. Soundings were taken along arcs 50 or 66 metres away from the ship. Experience showed that the launches rapidly learned to keep their appointed stations. During each station, every two minutes, the Amiral Mouchez took a three-point fix and signalled its bearing to each of the launches, which noted the mast height.

RADIOAIUTI ALLA NAVIGAZIONE AEREA E MARITTIMA

(Radio aids for air and marine navigation)

by Gino MONTEFINALE

278 pages; 151 figures; 25.5 × 18 cm; Publisher : Ulrico Hoepli, Milan, 1960

Engineer Captain (M. A.) Gino MONTEFINALE of the Italian Navy, author of the *Manuale del Radarista* (*) (Manual for the Radar Operator), is particularly well qualified to write the book under review which aims at facilitating the study of problems of radio navigation at sea and in the air, giving navigators a general outline of the different radio aids in present use, and enabling them to interpret more readily the special instructions covering each system. One of the chief merits of this work is that it brings together in one volume data which are generally scattered throughout periodical publications in different languages and in the pamphlets issued by instrument manufacturers.

This publication is chiefly designed for air navigation, but mariners will also find in it indispensable data for their own purposes. The author has confined himself strictly to dealing only with the radio aids used in navigation and has deliberately ignored the aids used in other fields, such as hydrography, oil research, etc.

In addition to the introduction, which describes the history of the development of radio navigational aids, the publication includes two main parts.

The first part deals with radio aids used in both aerial and marine navigation : radiogoniometry, radiobeacons, Consol, hyperbolic systems, Loran, Gee, Decca and radar.

The second is devoted to radio aids for civil aviation.

The book ends, most appropriately, with a glossary of English technical terms and their Italian translation, an analytical index for ready reference to any given subject, and a bibliography.

(*) See the review published in the May 1958 *International Hydrographic Review*.

LES DECOUVERTES OCEANOGRAPHIQUES MODERNES

(Modern Oceanographic Discoveries)

by J. ROUCH

Pp. 251, 22 figs., 22 $\frac{1}{2}$ × 14 cm
Payot, 106, Boulevard Saint-Germain, Paris, 1959

Captain J. Rouch, who is Honorary Director of the Oceanographic Museum, Monaco, and a leading oceanographer, has written a book published by Payot,

a Paris firm, entitled *Les Découvertes Océanographiques Modernes*. The work is dedicated to the memory of H.S.H. Prince Albert I of Monaco, who introduced the author to the science of oceanography.

The book discusses the most recent oceanographic findings, thus completing Captain Rouch's treatise on physical oceanography (*Traité d'Océanographie Physique*), a text book in three volumes used in a course given by him at the Oceanographic Institute, Paris.

The last of these volumes appeared in 1948. Since then oceanography has been heavily subsidized by maritime nations and well-financed international organizations, and has developed to a remarkable extent. The present volume describes these developments and the results obtained. An introduction comments on the important part played by oceanography during the last world war, on recent oceanographic expeditions, on deep-sea diving, the bathyscaph, oceanographic vessels, and international cooperation in oceanography. The remaining text is composed of three sections each corresponding to a volume of the *Traité d'Océanographie Physique*.

Part One : *Soundings*, of particular interest to hydrographers, consists of the following chapters :

I. Depth measurements; various applications of echo sounders.

This section describes the development of echo sounding, the application of Asdic to the detection of shoals of fish, the deep-scattering layer, sea noises, Sofar, and the new radio systems used in fixing sounding positions.

II. Changes in bathymetric charts.

In this section, closely related to the IHB's activities, information is given on recent measures taken with respect to the General Bathymetric Chart of the Oceans and the nomenclature of ocean-bottom features. The remainder of the chapter discusses coastal morphology, the greatest oceanic depths discovered, and bottom relief features such as the Lomonosov ridge, guyots, submarine canons and valleys.

III. Nature of the bottom.

This section begins with a description of the new techniques used in the collection of bottom samples. Various bottom samples, coral, pelagic deposits, sediment layers, cosmic spherules, temperature and thickness of sediments are then studied. The author notes the vital importance of analysis of long sediment cores originating from greater depths.

Part Two : *Sea Water*, consists of four chapters in which ocean temperature, salinity and dissolved gasses, marine optics and ice are discussed.

The importance of bathythermographs in the measurement of temperature in layers near the surface, and the significance of marine temperature in weather predictions are emphasized. Chapter IV : *Ice* contains the international nomenclature of ice adopted by the World Meteorological Organization in 1953.

Part Three : *The Motion of the Sea* describes the latest techniques applied to the study of waves and swell, tides and tidal currents, and lists the principal results obtained. The contribution of long waves and surf beats to our knowledge of waves and swell is stressed, as well as the valuable assistance of the bathyscaph and Swallow's floats to the investigation of bottom currents and currents at intermediate depths.

The book is not only intended for specialists who have access to the original reports and mathematical analyses associated with present-day oceanographic research, but for the well-informed layman desirous of keeping abreast of contemporary scientific developments.

The work contains 22 figures and an extensive bibliography. In addition to the usual table of contents, an alphabetical index has been included for ready reference to a particular subject or authority.

DIE WESTKUSTE SUDAMERIKAS IM BEREICH DES PERU-STROMS
(The West Coast of South America in the zone of the Peru Current)

by Erwin SCHWEIGGER

16 × 23 cm, 514 pages, 7 figures, 23 charts, 24 photographs;
six-part chart of west coast of South America;
Keyzersche Verlagsbuchhandlung, Heidelberg - Munich, 1959

The author of this volume, Dr Erwin Schweigger, is an eminent biologist who has done research work in Peru during the past thirty years. His latest book is a study of the west coast of South America and of the offlying section of the ocean affected by the Peru current.

Chapter I contains a geographical description of the coast : its shape, relief, islands, streams, guano, sands and dunes. Chapter II discusses the marine areas, inclusive of ocean currents : the Pacific south equatorial current; its velocity and direction along the coasts of Chile and Peru; and small and large irregularities of the Peru current. Temperature and salinity, swell and tides are also considered. Chapter III contains detailed information on climate. Chapters IV and V describe the flora and fauna, with special reference to guano-producing sea-fowl. Conditions of existence according to zone are outlined in chapter VI.

An extensive bibliography, alphabetical index, and a considerable number of figures, charts and photographs complement the work. The contents are of primary interest to geographers and zoologists, but oceanographers will also note the presence of a valuable fund of information.
