

BOOK REVIEWS

PHYSICS OF THE MARINE ATMOSPHERE

by H. U. ROLL

Volume 7 of the International Geophysics Series;

Edited by J. van Mieghem, Royal Belgian Meteorological Institute
Uccle, Belgium

published by Academic Press, Berkeley Square House, London W.1, 1965
426 pp.; illustrations; price 107s. 6d.

In the course of his preface the author asserts : " The main object of this monograph is to discuss the influence exerted by the sea surface on the properties of the atmosphere as well as on atmospheric processes of small and medium scale. Particular consideration is given to the exchange occurring in the boundary layer between ocean and atmosphere. The discussions include the flow characteristics and thermodynamics, as well as the chemistry, electricity, and radioactivity of the marine atmosphere. The particular difficulties inherent in meteorological measurements at sea are considered in an opening section. Emphasis is placed on the physical approach rather than on geographical aspects and those of application. The discussion of the empirical facts, regarded as fundamental, is followed by a theoretical interpretation " .

RIVER MOUTHS, ESTUARIES, LAGOONS AND DELTAS

by J. LARRAS

Collection du Centre de Recherches et d'Essais de Chatou
published by Les Editions Eyrolles, 61, boulevard Saint-Germain, Paris V
1965

16 × 25 cm; 172 pages; 60 figures; price 28.80 F

Rivers flow into the sea in various different ways depending on the topographical and geological features of the district, and the respective importance of the river's liquid and solid-matter content. Engineers, however, need only study three types of river mouth in detail; estuaries, lagoons and deltas.

In fact, for every river mouth problem the Engineer should be able to find an equivalent amongst the three types here studied.

The name " estuary " is reserved for that portion of a river where its width changes rapidly and which flows directly into the sea, in contrast to the " tidal " portion where more often than not the width remains constant. Engineers consider

" fjords ", " calanques ", " abers " or " rios " as extreme examples of estuaries since they are in hard soil and bring in a negligible contribution of solids.

The present work answers the most immediate problems of the greatest number of Engineers but excludes such questions as planning of measurements at sea, studies on reduced scale models and tide-powered factories which should only be entrusted to experienced specialists.

Mr. LARRAS outlines what is known about tides, currents and the mingling of waters for each of the three cases being considered. He then describes the way these hydraulic phenomena act on the setting in motion, the transportation and the depositing of solid materials coming from either the river mouth itself or from outside. The author then shows how to bring this accumulated knowledge to bear upon river engineering tasks in each type of river mouth under the best possible conditions.

More than 400 bibliographical references, classified by subject, are included.

WIND WAVES
their generation and propagation on the ocean surface
by Blair KINSMAN

Edited by Prentice-Hall, Inc., Englewood Cliffs, New Jersey, U.S.A., 1965
17 × 24 cm; XXIII + 676 pages; many illustrations

During the last several years, a revolution has occurred in the study of wind-generated ocean surface waves. This book gives a coherent account of that revolution and leads the reader to an understanding of the waves of the sea as they actually are.

Without assuming advanced technical knowledge, it places the tools of modern wave research at the disposal of those who deal with ocean surface waves.

Wind Waves brings together in one volume results produced by the complete reformulation of the wave problem. Previously, results of this revolution have been scattered through dozens of different publications, usually assuming that the reader was already highly skilled in hydrodynamics. Such is not the case in this book.

The work contains 13 chapters, and includes a bibliography, a name index and an alphabetical index.

Probably the most outstanding feature of the book is Chapter 9, which deals with the planning of wave measurements, taking them, handling the data, and interpreting the results. Based on the author's own personal experience, it is unique and practical in every way. The advice and instruction it contains can be extrapolated to any study in which power spectral analysis is being applied.

SERIAL ATLAS OF THE MARINE ENVIRONMENT

Folio 7

**Surface Circulation on the Continental Shelf
off Eastern North America between Newfoundland and Florida**

by Dean F. BUMPUS
Woods Hole Oceanographic Institution
and Louis M. LAUZIER
Fisheries Research Board of Canada

Wilfrid Webster, Editor

published by the American Geographical Society, New York, 1965

This work is a study on the non-tidal drift at the surface on the continental shelf as inferred from the results of all available drift-bottle data between 1948 and 1962 inclusive. These results are presented in twelve charts, one for each month, showing the annual cycle of the circulation. The charts show, on the basis of a 30' rectangular grid, where drift bottles were released, the percentage of bottles recovered on the North American Seaboard from each rectangle, and the velocity (direction and speed) of the drift through those rectangles from which the bottles originated. Four summary charts portray the surface circulation pattern on a seasonal basis. The work also contains a short introduction concerning the data, charts and surface circulation.

Folio 8

Zooplankton Indicator Species in the North Sea

by James H. FRASER
Marine Laboratory, Aberdeen

The Trace Elements

by Robert JOHNSTON
Marine Laboratory, Aberdeen

Folio 9

Meteorology of the North Sea

by Frank E. LUMB
Meteorological Office, United Kingdom

This Folio provides a summary, by means of maps, cartograms and graphs of those features of the climate and weather of the North Sea which are of interest to oceanographers and to fishery biologists. Especial attention is given to the weather situations associated with gales and fog, which may prove dangerous to fishing vessels. Evidence is presented for a decline, since 1940, in the influence of the prevailing southwest winds in winter. A wealth of climatological and meteorological data for all weather elements is contained in the publications listed in the References.

The charts presented are : Sea Level Pressure; Fog Frequency; Pressure and Temperature Anomaly; Gales; Fog.