

**BEOBACHTUNGEN DES "GRÜNEN STRAHL"**

(OBSERVATIONS OF THE "GREEN FLASH")

by

GUSTAV SCHRÖDER, FIRST OFFICER OF THE HAMBURG-AMERICA LINE.

In *Annalen der Hydrographie und Maritimen Meteorologie*, Heft IX, Berlin, 15th September 1935, page 336, a very complete article on the phenomenon of the "Green Flash" will be found. It describes a series of observations of that phenomenon scattered over various parts of the world made in the course of 1934 and 1935 by the Company's ships.

Coloured sketches and a plate give the different aspects and phases of the phenomenon.

Though it is not an investigation into the causes of the phenomenon, nevertheless the article places on record its principal effects and is intended to serve as a basis for a later study.

**MATTHEW FONTAINE MAURY, THE PATHFINDER OF THE SEAS**

by

CHARLES L. LEWIS, PROFESSOR, UNITED STATES NAVAL ACADEMY

(16 × 24 cm. - 264 pp. + photos. ill. — The United States Naval Institute, Annapolis, 1927)

This biography of Commodore M. F. MAURY was compiled within the Naval Academy of Annapolis by one of the professors of this School. Its contents are founded on manuscript notes by MAURY himself preserved at the Library of Congress, and use has also been made of numerous documents from the archives of the United States Naval Observatory, Washington, and from the Library of the Navy Department.

By his work, the *Physical Geography of the Sea*, and by his concepts which led to the publication of Ocean Pilot Charts, MAURY contributed to lay the foundation of the science of oceanography.

In 1923, the MAURY Memorial Association erected a monument to the celebrated oceanographer in the State of Virginia, at Goshen Pass on the banks of the North Anna river.

(See also: *Hydrographic Review*, Vol. I No. 2, Monaco 1924, p. 155).

**THE SNELLIUS EXPEDITION**

IN THE EASTERN PART OF THE NETHERLANDS EAST-INDIES 1929-1930

Vol. II: Oceanographic Results; Part 2: Soundings and Bathymetric Charts;

Chapter II: The bottom configuration in relation to the Flow of the Bottom Water.

by

P. M. VAN RIEL, LEADER OF THE EXPEDITION

(23 × 32 cm. - 63 pp., 31 figs + 22 pl. &amp; detail charts. — Kemink en Zoon, N.V., Utrecht, 1934)

This publication, drawn up by Professor van RIEL, was designed to meet the frequently expressed wish that the results of the Expedition concerning the sea bottom and the flow of bottom water be quickly available. The volume now published by the Director of the Oceanographic and Maritime Meteorological Department of the Royal Netherlands Meteorological Institute, contains an historical account of previous expeditions, general information on the work which permitted bathymetric charts to be constructed during the expedition, and detail charts of the configuration and nature of the sea floor. A bibliographical list and a list of publications concerning the *Snellius* expedition follow the main text, while the series of coloured charts annexed to the end of the volume which show the bathymetrical details, are particularly noteworthy.

It is considered that no better way of reviewing this important work could be found than by reproducing the following analysis made (in German) by one so qualified

to do so as is Dr. Gerhard SCHOTT, in the *Journal du Conseil Permanent International pour l'Exploration de la Mer*, Vol. X, No. 3, December 1935, page 327. (1)

That the deeps of the Netherlands East Indies, mainly in the eastern parts off the Pacific Coasts, present by far the most startling irregularities of the three oceans, is what we learn anew in the most convincing way from the work of van RIEL, which is accompanied by numerous and excellent bathymetric charts. A study of these charts, which for oceanographers, biologists and for very many others are of the highest significance, is a scientific feast, and at the same time, when the technical execution is considered, an aesthetic feast. A chart on the comparatively large scale of 1:2 500 000 (on a double page) gives an idea of the enormous increase of knowledge contributed by the 32,000 echo soundings made by the *Snellius* to the east of Java and Borneo; a synoptic chart (scale 1:5 000 000) including the regions westward of Sumatra and to the south of Java, and extending to the Pacific Ocean, places before us the whole of the Malay Archipelago with a profusion of new detail. The cartographical section of the book is completed by 16 auxiliary charts the chief object of which is to illustrate the submarine relief in the numerous straits connecting the different basins and troughs. The drawing of the isobaths is not based solely on soundings but, for depths over sills, on the properties of the water on each side of the sill, i.e., in the first place, the *potential* bathymetric temperatures have been carefully kept in view. This procedure, as demonstrated by the text and the figures, has yielded most fruitful results. For 27 more or less independent sections of the sea the author gives (page 56) a list of the sill or "saddle" depths alongside the relative values of salinity (S) in ‰ and of temperature (t°); let it be said in passing that this list may serve to correct a few details in the recently published work of G. SCHOTT: *Geographie des Indischen und Stillen Ozeans* (page 99). Like him, van RIEL was unable to make entire use of the *Dana* echo soundings; however, on page 18, in an appendix, an important primary form of the configuration of the sea floor, is represented, obtained from data of the *Dana*, and which previous charts do not show, this being a *submarine junction between New Guinea and Japan passing by the Palau and Mariannes-Bonin islands* (depths less than 3,660 metres).

Plate No. IV is of particular interest not only from an oceanographical but also from a biological point of view; while bringing the depressions and basins into prominence by means of different colours, it shows the directions of the bottom currents by means of arrows. From this it would appear that all the enclosed Sunda seas exchange their waters with the Pacific Ocean, even the Sawoe Sea, to southward; only the Timor Sea and the small Aroe basin lying off Southern New-Guinea draw their bottom waters from the Indian Ocean.

Another point should be particularly noted, because it is of fundamental importance to all those who make a study of the sea; it is the question of the representation of the configuration of the sea floor by profiles. We owe a debt of gratitude to van RIEL for having given *faithful* profiles for the majority of the basins — in spite of exaggerations in depth to show the distribution of the temperature. From the *Meteor's* soundings there have been published, chiefly by German authors and most recently by Th. Srocks and G. Wüsr (Work of the *Meteor*, Vol. III, Part I, page 9), profiles with exaggeration of depths reaching 1:100 to 1:200 for the purpose of giving a purely topographical conception; this must certainly give, even in scientific minds, an utterly false impression, and that even though they frequently remind themselves of this exaggeration of depth. Van RIEL is right when he declares that exaggerated depth profiles, even while serving topographical purposes as they do, "give a totally erroneous impression of the shape of the bottom line". What fantastic profiles might van RIEL have presented to the reader in his case. But he has not yielded to temptation. It is with great benefit that one contemplates his profiles, which are in accordance with reality, through the Banda Sea, the Celebes Sea, the Philippine trench or the Mindanao trough which contains the greatest ocean depths, etc. For us humans, differences of level of some hundreds of metres mean a very great deal; compared with the formidable horizontal distances of oceanic abysses they are, in actual fact and in the majority of cases, but very insignificant details of natural relief.

(1) See also: Hydrographic Review, Vol. VI, No. 2, November 1929, p. 67.  
 " " " Vol. VII, No. 1, May 1930, p. 142.  
 " " " Vol. VIII, No. 2, November 1931, p. 65.