

## OCEANOGRAPHY IN THE INDONESIAN ARCHIPELAGO

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For the first investigations on physical and chemical oceanography in the Indonesian Archipelago, we have to go back to the years 1872—76, when the British Explorer "CHALLENGER" made her famous cruise around the world. Many cruises conducted by several nations followed, but all these expeditions had the same aim: exploitation of all means of oceanographic and biological interest, from a purely scientific point of view.

The establishment of the "VISSCHERIJ STATION" (Fisheries Station) at Batavia, in the year 1905, was the first step in real activity in oceanographic survey. The aim of this institution was: Investigation of problems of the Indonesian waters from a scientific as well as from a practical point of view.

With the Government steamvessel "GIER", many extensive cruises were made to try out the possibilities of trawling in Indonesian waters. In 1914 Capt K. M. van Weel started his first systematic survey of the Java Sea. During this survey special notice was taken of salinities, densities and temperatures, the horizontal and vertical distributions of these properties and their seasonal changes. The plotted results of these investigations are on file but the data are lost. This survey was ended in August 1915.

This first oceanographic survey was followed up by an extensive survey during 1917—20, covering the areas of the Java Sea, South China Sea, and Malacca Straits. This survey again was conducted by Capt. K. M. van Weel, who published his results in "Treubia" May 1923 "Meteorological and Hydrographical Observations, made in the Western part of the Netherland East Indian Archipelago." Many charts showing the distributions of salinities, densities and temperatures accompany this publication.

A full interpretation of the results of Capt van Weel's survey was published by Dr. H. P. Berlage Jr., in 1927 "Monsoon-currents in the Java Sea and its entrance".

From 1920 oceanographic work came nearly to a standstill, but in 1939 a new start was made. A ship was made available by the fisheries department for oceanographic work and was run for the Laboratory.

Under Capt Veen 4 cruises were made yearly covering Sunda Straits and the Java Sea up to the 200 meter line in the Macassar Straits. These cruises were made during the West and East Monsoon and during the two changes. Water samples

were taken from surface to bottom, currents measured, temperatures noted, transparency measured with Secchi disc, etc.

Water samples were analyzed at the Laboratory at Batavia for salinity. With the cooperation of the Koninklijke Paketvaart Maatschappij surface water samples also were taken on board ships running on regular lines crossing the Java Sea, Sunda Straits or Macassar Straits. Also many lighthouse-keepers collected weekly watersamples.

Dr. L. Van Dam entered the Laboratory as oceanographer and worked out a method of micro-chlorine titration, which is described in "TREUBIA" Nr 17, Dec 1940 "Estimation of Chloride in 1 cc seawater sample by means of syringe pipettes."

This method saved us lots of trouble during wartime, when silver nitrate was very scarce and costly.

The activities of the Laboratory came to a sudden end with the outbreak of war with Japan in December 1941. Not before July 1947 the Laboratory came in our hands again, but it took a long time to arrange and tidy the mess that was left over from the time of occupation and turmoil. Very fortunately we found all oceanographic data back and complete. These data will be worked up as soon as possible.

Activities in the Laboratory are in full swing again. Thanks to the cooperation of the Koninklijke Paketvaart Maatschappij and their Captains and officers surface samples and temperatures are collected on about 30 ships running on regular lines from Medan to Hollandia and Merauke. We also mention the cooperation of the Department of Shipping and Navigation and their Lighthouse-keepers, who weekly collect surface samples on about 30 offlying lighthouses.

Rehabilitation of the Laboratory is nicely under way, orders for equipment, chemicals and glassware have been placed.

A seagoing launch of about 40 feet is on the way to completion and most probably will be delivered in April.

In collaboration with the Fisheries Department plans are worked out for a seasonal investigation of the seas lying around North Celebes and Gilolo (Halmahera) for which survey the Fisheries Department will try to make available a ship as soon as possible.

Plans for a new research vessel are worked out and under consideration.