

fitted in Boston "such care had not been lavished on the vessel since the end of World War II".

When she entered Woods Hole for the last time all the town turned out to greet her. She could not have continued so long or done such good work if long-serving captains and crew had not taken continuing pride in her, their unusual spirit and enthusiasm more

than making up for her old-fashioned design. She is still working from Buenos Aires, mainly for training cruises.

Her fine story is well told. □

Sir George Deacon was Director of the former National Institute of Oceanography. He joined the RRS Discovery on 28 January, 1979, for further study of the Antarctic Ocean.

Varnished tale of Scripps

Edward Bullard

Scripps Institution of Oceanography: Probing the Oceans, 1936 to 1976. By E. Noble Shor. Pp. 502. (Tofua Press: San Diego, California, 1978). Paperback \$5.95.

THE Scripps Institution of Oceanography was founded in 1903; in 1967 Helen Raitt and Beatrice Moulton published a history of its first fifty years. The present book starts in 1936, when Harald Sverdrup became Director, and brings the story up to 1976. It is a truly remarkable story. How did a small marine biological station grow to be the biggest oceanographic institute in the United States and, perhaps, in the world and then, in the 1960s, spawn a new campus of the University of California? The story is largely that of the three great Directors—Harald Sverdrup, Roger Revelle and Bill Nierenberg.

Sverdrup saw that the future of Scripps lay beyond the coastal waters of California. He obtained a ship, the beautiful schooner *E. W. Scripps*, built for racing and pleasure cruising, and converted her to a research vessel. It was Sverdrup who made Scripps a real oceanographic institute.

At the end of World War II he returned to Norway and, after a period of transition under Carl Eckart, Revelle became Director. Revelle had learnt during the War to 'think big'. He started a frantic race to raise money, hire people and build buildings. It was he who made Scripps larger and better and more fun than any other oceanographic institute. After a few years he grafted on to it a graduate school of science and engineering and turned this and Scripps into the University of California at San Diego, with himself as acting Chancellor. His strategy was original and brilliant. Most universities start with under-

graduate teaching and then, years later, develop a graduate school. This ensures a start with a rather pedestrian staff. Revelle's scheme enabled him to engage a prestigious staff from the start: among his early captures were Harold Urey and Maria and Joe Meyer. When the time came to choose a Chancellor for the new campus the Regents did not appoint Revelle. In 1964 he left California to become Director of the Population Studies Institute at Harvard.

It is a dramatic story and Betty Shor has told the part that concerns Scripps in meticulous and well documented detail; but somehow the realities of what happened have slipped away. Everything is so smooth, everyone behaves so well, everything succeeds, there are no rows and only the merest hint of the struggles that raged before Revelle was made Director and during his unsuccessful attempt to become Chancellor. We are told the names and deeds of all kinds of rather minor figures—for example, of the lady who presides so charmingly and efficiently over the aquarium bookstore—but the name of Edward Pauley who, as a Regent of the University, nearly wrecked the whole enterprise does not occur at all and, to come nearer home, no clue is given as to who at Scripps opposed Revelle's appointment as Director.

To be fair it must be said that Mrs Shor could hardly have told an unvarnished tale. She was asked by the Director to write the book and most of those mentioned in it are her friends. It would have been instructive to have reproduced some of the letters sent at that time to the President of the University and to see who said what and when; but it is clearly too much to expect.

After the turbulent reign and abdication of Revelle there was a short period during which Fred Spiess was Director. He picked up the pieces, smoothed the ruffled tempers and continued the building programme; he then handed over to Bill Nierenberg. Nierenberg had the difficult and unenviable task of maintaining and expanding Scripps in a time when the country had lost its belief in the worthwhileness of anything. For a

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while it looked as if Scripps would become 'Scripps rent-a-ship', an organisation that provided ships for anyone who could raise the money to run them. This has not happened; Scripps has remained what it was, an organisation practicing and encouraging all branches of oceanography; indeed it has taken on new responsibilities, such as the Deep-Sea Drilling Programme, and has built fine new buildings. Again the drama and the struggle are largely missing from the book. Again it all happens so smoothly and easily with no sense that, but for Nierenberg, it might have come out very differently.

In reading the book one does learn a lot about what happened and about who did what and went where. There are accounts of projects and expeditions with well chosen extracts from letters, ships' logs and radio signals. The facts are set out with great care and detail. It is clearly a book that everyone interested in oceanography and in Scripps should read. It is not the ultimate book on the personalities and the period, but it is an essential contribution to the writing of such a book in 50 years time. □

Sir Edward Bullard is Emeritus Professor at the Scripps Institution of Oceanography, La Jolla, California.