

A WHALING PIONEER

[Review by Arthur Credland* of *Thomas Welcome Roys; American pioneer of modern whaling* by F. P. Schmitt, C. de Jong and F. H. Winter. Charlottesville, Mariners Museum and University Press of Virginia, 1980, 235 p. Illus. US\$15.00.]

This is a very welcome publication describing the life and inventions of one of the least known of the 19th century whaling pioneers, Thomas Welcome Roys. He was born in 1816 and his first voyage as whaling master aged 25 yielded a cargo of oil and bone worth \$40 000, an unprecedented sum. He went on to penetrate the Bering Strait and became the first to exploit systematically the stocks of Right Whales in the northern Pacific. Roys was interested in whale-killing devices. Congreve's method of shooting rocket harpoons, tested by William Scoresby Sr in 1821, must have greatly intrigued the inventive American. A Congreve rocket tube is preserved at Woolwich (apparently unknown to the authors) and undoubtedly became the prototype of Roys own rocket gun, a bazooka-like instrument shooting a barbed harpoon with an explosive head, patented in Britain in 1857. It was later to be replaced by Svend Foyn's explosive harpoon that forms the basis of modern whaling. Roys went on in partnership with Gustavus Lilliendahl to establish the first modern-style shore station on the east coast of Iceland to process rorqual whales caught by his vessels; he equipped his ships with the most up to date catching and processing equipment and designed the 'accumulator', which is usually credited to Foyn. But the venture finally failed due chiefly to the over-exuberant investment of capital into a series of brilliant ideas so that when success seemed close the supply of money had run out.

The chief source of information for Roys career is an unpublished memoir written shortly before his death and now preserved in the Suffolk County Whaling Museum, Long Island. Although the authors have recounted the events as told by Roys they have made little attempt to investigate the important British sources, other than the Patent Office specifications.

* Town Docks Museum, Queen Victoria Square, Kingston upon Hull, HU1 3RA.

NATURAL HISTORY OF WHALES

[Review by Robert Burton* of W. Nigel Bonner's *Whales*. Poole, Blandford, 1980, 278 p, illus. Hardcover £10.95.]

Not many years ago whales were the concern of whalers and a few biologists, and the general public knew or cared little about them. This situation has now changed, and the fate of the whales has become an important topic of debate and demonstration. At the same time an interest has been generated in their natural history, especially in aspects of behaviour which suggest that whales may have 'higher' mental attributes. For biologists, the interest of whales lies more especially in their supreme adaptation to a marine lifestyle, and this is what Nigel Bonner sets out to convey.

An identically-named book by E. J. Slijper appeared, in translation, in 1962. In both, the title is used in the sense of all Cetacea. Slijper's volume became the cetologists' handbook; it concentrated on the anatomy of adaptations because the state of knowledge then did not allow the author to expand on their functions. As a result of research in the intervening two decades much more is known, for instance, about how laminar flow enables dolphins to swim so fast and how they find their food by echo-location. The unique filtering mechanism used by the baleen whales to gather food can now be described in relation to the feeding habits of different species. In all, we are beginning to understand whales as living animals.

There are many aspects of whale biology which still remain a mystery. This is especially so in the field of behaviour and Bonner apologises for his scanty treatment of the subject. No apology is needed. Whereas the behaviour of many mammals is being studied in such depth that sophisticated statistical techniques are needed to interpret the data, information on whale behaviour is

* Manor Cottage, West Street, Great Gransden, Sandy, Bedfordshire SG19 3AU.

only now emerging from the level of tantalizing anecdotes of chance observations and progressing to systematic studies. A chapter is devoted to 'whale brains and intelligence', which I am glad to see takes a conservative view of the mental ability of whales and assesses it by comparison with other mammals.

The last quarter of the book recounts the history of whaling. If the suffering of individuals and the plundering of species can be ignored, the development of catching and processing techniques makes a fascinating subject. It has been told before, but many of the details given here are novel enough to make another telling worthwhile. The final chapter deals with the present state of exploitation and conservation of whales, ending on a note of slight optimism for their future and a plea for the rational exploitation of all marine resources.

The presentation of this work appears more textbookish than an easy read, with many citations and some rather technical phrasing. If I had been editor I would have divided some of the longer sentences; but explanation of the intricacies of cetacean anatomy and physiology needs Bonner's measured elaboration. It is aided by Michael Clark's illustrations and is leavened by anecdotes and asides. The suggestion that nutty-nasting whale's milk would go well with strawberries raises the vision of an incongruous juxtaposition of genteel teas in the sun and a whaling factory ship stinking on the cold grey sea. About half of the 14 colour plates show dead whales. This is a pity for there are now plenty of photographs of whales in the wild. However, the selection is an allegory of the changing methods of cetacean research. Whales were first studied dead at the whaling station, then alive but in captivity, and now in their natural surroundings. We can look forward to more photographs of living whales in the future.

GENERAL BATHYMETRIC CHART OF THE OCEANS: THE ANTARCTIC SHEET

[Review by Sir George Deacon* of the *General bathymetric chart of the oceans, sheet 5.18, 5th ed.* Published under the joint authority of the International Hydrographic Organization and Intergovernmental Oceanographic Commission (Unesco). Ottawa, Canadian Hydrographic Service, 1980. Scale 1:6 000 000 at 75°S.]

This new sheet of the series begun by Prince Albert of Monaco in 1903 is notable for the great increase in the number of soundings made during 25 years since the fourth edition, and for the concentration of effort needed to compile and produce it. Two scientific coordinators, G. L. Johnson of the US Office of Naval Research and J. R. Vanney of the Laboratoire de Géologie Dynamique, Paris, have supervised groups using large-scale plotting sheets supplied by the hydrographers of USA, UK, Australia, New Zealand, Chile, Argentina and France, and the findings of some 60 specialists in the geology of the region. In mapping the continent they were helped by D. J. Drewry and G. de Q. Robin of the Scott Polar Research Institute. The collated effort was supported by the Intergovernmental Oceanographic Organization in conjunction with its advisory bodies, and by the International Hydrographic Commission.

The chart is a polar stereographic projection on the scale of 1:6 000 000, reaching to 64°S at the sides of the square chart, and to 60°S in its corners. The overall size of the sheet is 107 × 117 cm. The sea floor is contoured at 200-m intervals, with an extra line at 500 m between two of the blue shades of colouring. The colour shades deepen at 200 m, 500 m, 1 000 m, and then at 1 000 m intervals. The topography is too detailed to be substantiated by printing individual soundings, but the tracks of continuous lines of soundings are shown. Spot soundings are printed where they help to show maximum, minimum and other key depths.

On the continent, ice-surface contours are printed at 100-m intervals, and under-ice terrain contours (now available for more than half the continent) at 250-m intervals. Where available, sea-floor contours are continued below the ice shelves, so that below the Ross Ice Shelf 500 m sea-floor contours link to -500 m under-ice terrain contours. The interpretation gets a bit involved over Roosevelt Island.

* Institute of Oceanographic Sciences, Brook Road, Wormley, Godalming, Surrey GU8 5UB.