

Into the fishy business

J. H. S. Blaxter

The Provident Sea. By D. H. Cushing. Cambridge University Press: 1988. Pp. 329. £37.50, \$65.

THE history of fisheries demonstrates some of mankind's better individual qualities — the ability to innovate and organize, and ruggedness under harsh conditions — as well as some less-desirable national foibles such as aggression and greed. These human attributes are well brought out in Cushing's book, which shows that fishermen and fishery biologists have some of the better qualities in common!

The history of fishing is dealt with on a wide geographical basis and some fisheries (mainly of the Northern Hemisphere) are described case by case — for example the North Sea herring fishery, the Newfoundland cod and harp seal fisheries, the Pribilof fur seal fishery and the great fisheries for whales. The origins of fisheries research and its increasing sophistication between 1945 and 1965, and from 1965 to the present time, are examined in relation to similar phases in the development of the regulating bodies or institutions concerned.

In prehistoric times, fish were caught by hook and harpoon; nets were already in use in the Neolithic. But a well-documented expansion took place in high-seas fisheries in the Middle Ages when fish caught in the Baltic and North Sea became a major source of employment and wealth, for example for the Hanseatic towns. Soon a high degree of international organization and integration evolved, not only in the fishing itself, but in landing, on-shore processing, transport and marketing.

Certain advances can then be identified, each causing a new leap forward. The first was the invention of on-board curing of herring by the Dutch in the fourteenth century. There followed the introduction of steam tugs for towing sailing vessels in and out of port in the middle 1800s, and then steam engines for propulsion and handling gear on the fishing vessels themselves in the late 1800s. The post-1945 development of stern trawlers, freezing at sea, use of midwater trawls and purse seines, and the deployment of fishing fleets with mother ships and catchers increased the world catch enormously, leading to its probable present asymptote near 80 million tonnes a year.

A large part of the book consists of chapters on the origin of fisheries research in the last century and its progress after the Second World War. The concomitant setting-up of international regulatory bodies closely parallels the development

of research. Clearly, the initiative for research and regulation stemmed from the increasing power and efficacy of the fleets, which began to cause severe depletion of fish stocks, a problem of little importance in the pre-steam days.

As the author points out, at one time nations went to war over their fisheries; now they try to resolve their problems by appraising the scientific evidence. The story of the interplay between fishermen and fishing, and fishery scientists and regulation, is a fascinating mix of ignorance, greed, optimism, political expediency and idealism. Apart from some Scandinavian countries such as Iceland and Norway, where scientists may be held in some esteem, fishery biologists have been treated with suspicion by the fishermen, who have resented the loss of short-term profits and ignored the goal of long-term consistency of catch. The ever-increasing effect of overfishing has recently led to a greater appreciation by fishermen of the need for regulation. Earlier methods of regulation, such as minimum mesh sizes, have of late been supplemented by the imposition of quotas for vessels and total allowable catches for fisheries. Usually the medicine prescribed can easily

be agreed by the scientists on an international basis — even if the politicians find it difficult to allocate the dose to their respective countries.

Cushing does not commend his book to any particular readership. Parts of it are probably too technical for the historian or economist, or too specialized for the undergraduate. Rather, it seems ideal for MSc students on fisheries management courses, or as background reading for marine and fishery biologists as well as civil servants and politicians — throughout the world, fisheries are often now as much a political as a commercial or scientific matter. The author does not refer to the increasing importance of freshwater fisheries and aquaculture (together yielding about 11 million tonnes in 1986), nor does he attempt to forecast the future. Although such additions would have enhanced the value of the book, it already contains an unusual and useful mixture of history, economics and science. It will no doubt find its way into many libraries — not least, I hope, those of certain government departments. □

J. H. S. Blaxter is Deputy Chief Scientific Officer at the Dunstaffnage Marine Laboratory, PO Box 3, Oban, Argyll PA34 4AD, UK.

The Great Dane

H.B.G. Casimir

Harmony and Unity: The Life of Niels Bohr. By Niels Blaedel. Science Tech Publishers, 701 Ridge Street, Madison, Wisconsin: 1988. Pp. 323. \$35. Distributed outside North America by Springer-Verlag, DM98, £32.

NIELS Bohr was one of the greatest physicists of our century. His papers on the spectrum of hydrogen, in which he postulated the existence of stationary states and of quantum jumps, inaugurated the era of the quantum theory of line spectra, led to an understanding of the periodic system of the elements — another notable contribution of Bohr's — and finally to the formulation of quantum mechanics. Bohr did not contribute to the mathematical formalism of the new mechanics, but his doctrine of 'complementarity' played an essential role in clarifying its interpretation. He then turned from atomic to nuclear physics, introducing the notion of highly excited intermediate states in nuclear reactions and explaining many features of uranium fission. Through his writings, and even more through personal discussions, he had an enormous influence on younger physicists.

During the Second World War Bohr escaped from his native Denmark, reaching the United States by way of Sweden and England. He was keenly aware of the

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Niels Bohr — an enormous influence on younger physicists.

decisive role nuclear weapons were going to play in international politics, and foresaw with great clarity the threat of a cold war, but his attempts to convince Roosevelt and Churchill that they should come to terms with the Soviet Union at an early date were unsuccessful.

He was certainly a true citizen of the world. But, as one of his biographers, quoted by Blaedel, remarks, he was so deeply rooted in Danish culture and the Danish way of thinking and feeling that, if he had grown up in some other country, he would not have been Niels Bohr. He was also the head of a wonderful family. ▶