

CANADIAN INSTITUTE FOR MARINE DYNAMICS

New facilities have recently been opened in St John's, Newfoundland, for the Canadian National Research Council's Institute for Marine Dynamics. The IMD, which grew out of the Ottawa-based Marine Dynamics and Ship Laboratory, conducts research relating to design of ships and marine offshore structures, with special interests in ice-capable vessels and structures for operation under Arctic conditions. In St John's the Institute offers the world's largest ice tank, 90 m long, 12 m wide and 3 m deep, capable of developing ice 15 cm thick, in a refrigerated building where working temperatures can be maintained down to -25°C . There are also large seakeeping and towing tanks with wave-making capacity for model testing, a cavitation tunnel for studying the propeller design, and system support and model-making facilities. In Ottawa the Institute continues to operate a towing tank and manoeuvring basin. Research programmes are developed in cooperation with other government agencies and with industry. (Source: National Research Council Canada brochure.)

Obituary

Dr O. G. EDHOLM, a physiologist with strong interests in polar medical research, died on 18 January 1985, aged 75. Professor of Physiology at London, Ontario from 1944, and head of the Medical Research Council's Division of Human Physiology at Hampstead from 1949, Edholm was for many years involved in research on human performance in extreme climates, polar, tropical and alpine. He gave much help and advice to polar expeditions, notably British Antarctic Survey. His books include *Man in a cold environment* (with A. Burton), *Physiology of human survival*, *Polar human biology*, *Man hot and cold*, and *Principles and practice of human physiology*.

Sir ALISTER HARDY FRS died in Oxford on 22 May 1985. Born in Nottingham in 1896, Alister Clavering Hardy was educated at Oundle and Exeter College. In World War I he was commissioned into a Cyclist Battalion and served as a camouflage officer. Returning to Oxford in 1919 he graduated two years later and joined the staff of the Fisheries Laboratory, Lowestoft. Between 1924 and 1927 he was chief zoologist in RRS *Discovery*, one of the team investigating the Southern Oceans on behalf of the British Colonial Office for the regulation of the southern whaling industry. Hardy's research of this period is embodied in *Discovery Reports* series and many other scientific writings. His experiences in 'the old *Discovery*', as he fondly called his ship, are told with zest, and illustrated by his own sketches and water-colours, in his classic *Great Waters* (1967). They spilled over also into two other oceanographic books *The open sea: the world of plankton* and *The open sea: fish and fisheries*, written earlier, though covering his post-Antarctic research as a marine biologist in the North Sea, the north Atlantic Ocean and elsewhere.

On return from *Discovery* Hardy married Sylvia Lucy Garstang, daughter of the Professor of Zoology at Leeds University, and settled to academic zoology himself, holding chairs successively at Hull, Aberdeen and Oxford. He remained active in field research, retaining throughout life an engaging physical and mental inventiveness that stimulated his students and kept all who knew him on the hop. An early manifestation was his continuous plankton recorder—a maritime pianola, towed behind trawlers, that

trapped plankton on a continuous roll. This encouraged thorough, systematic sampling, and engendered new ways of thinking about the distribution of planktonic plants and animals, in which Hardy became a leader. Later he turned to aerial plankton, having been an enthusiastic balloonist. At Oxford he encouraged classical zoology, but also gave strong and early support to ecological field studies, nurturing David Lack's Edward Grey Institute, Charles Elton's Bureau of Animal Population, and Niko Tinbergen's animal behaviour group.

Hardy retained a strong interest in polar regions, regarding them as first-class training grounds for young ecologists and encouraging all who went there. Close to retirement he developed a new concept of human evolution that saw man as a littoral animal, and initiated a new line of enquiry into the evolutionary significance of religious experience, which he presented in the Aberdeen Gifford Lectures of 1963–65 and later developed in a series of books, notably *The living stream*. On retiring he founded the Religious Experience Research Unit (now the Alister Hardy Research Unit) at Manchester College, Oxford, that systematically explores human experiences of divine power. Many will remember him for his good humour, courtesy to students, gleeful interest in new ideas, and common-sense approach to all kinds of unlikely subjects. He was a gifted writer who encouraged others to write, and a water-colourist of note. Those who have not yet read his books—the earlier ones on marine biology, the later ones on human faith and religion, or his latest-of-all *Cotswold Sketchbook*—have treats in store.

Bernard Stonehouse

Prof SILVIO ZAVATTI died in Ancona, Italy on 13 May 1985. World fame dealt with him inadequately as a man and as a scientist; even in his native country he received less support than he deserved. What he achieved, almost single-handed, in the polar field is worth recording.

Born in Forlì on 10 November 1917, he graduated in Italian literature and geography, then became a master mariner and fulfilled a yearning for adventure by travelling for two years on South Seas routes in English sailing ships. In World War II he served with the Italian Navy, took an active part in the resistance against fascism, and was for a while vice-mayor of his native town. It was then that in 1944, aged 27, he founded the Istituto Geografico Polare, the first and only institution of its kind in Italy. This was set up to organize expeditions to polar regions and spread information about them. In the same year he started to publish *Il Polo*, a scientific journal which he himself edited and for which he translated all foreign contributions. Sadly *Il Polo* will cease publication after 41 years when all the articles already translated and edited by him have appeared.

In 1945 Zavatti was appointed Professor of Geography at the University of Urbino, and moved the institute to Civitanova Marche, where the Zavattis made their home. During the next ten years he organized and led six expeditions. The first, to Bouvetøya, Antarctica in 1959, Zavatti hoped would be a step toward establishing a permanent Italian base, but Italy could find neither interest nor funding for the venture. In 1961 he took an ethnographic expedition to Rankin Inlet to record Inuit songs, dances and games. In 1962 he was in Lapland studying nomadic Sami, and in the following year recording the Inuit of Angmagssalik, East Greenland. In 1967 he returned to his beloved friends of Rankin Inlet to produce coloured documentary films about their life, and in 1969 took a party to Repulse Bay, where he studied Inuit, corrected a number of mistakes in the charts, and examined the remains of Fort Hope, built by the British explorer John Rae in 1846.

Zavatti's vast ethnographic knowledge, culture, and love for anything polar was matched by a deep human concern for the fate of Inuit in modern times. These interests

formed the basis of a huge literary output. Zavatti wrote over 100 volumes including a dictionary for explorers, a polar geographic atlas (for which his own country's research council awarded him a prize), and books on Arctic and world exploration, all in Italian and as yet untranslated into English; in addition he wrote many hundreds of scientific and popular articles. In addition he acquired over the years an ever-increasing collection of material and relics from expeditions and explorers (especially Nobile and the Duke of Abruzzi). His collections and personal library of over 12,000 volumes formed the basis of the Museo Polare, which he founded in Civitanova Marche in 1969. This proved a fitting place for the first Italian polar conference, hosted by Zavatti in 1970. However, lack of community interest and support forced him to dismantle the collection in 1983, and it took him two years to find alternative accommodation for it.

At our last meeting, in March 1985, Silvio Zavatti was very ill, but happy because the museum was going to open again at Fermo, not far from Civitanova. He did not see it completed, and we hope that his effort of a lifetime will not now be wasted. Ironically, in the year of his death, Italy has at last announced its intention to establish a base in Antarctica—a decision that would have given him great pleasure. Zavatti will be impossible to replace. His constant, youthful enthusiasm for acquiring new knowledge in polar fields, his balanced human view combined with a sound scientific approach, his wisdom and detachment in the face of constant disappointment, his refusal to become embittered or lose drive and interest, make him one whom the polar world will miss, as already do his many friends all over the world.

Maria Pia Casarini-Wadhams