

OBITUARY

GRAHAM (PETER) BROMLEY and **IAN DAVID CALDER** died on 27 August 1967 in a canoe accident near the mouth of the Back River, Northwest Territories, Canada. Bromley was born in Grande Prairie Alberta on 11 January, 1926 but moved to Yellowknife, NWT, where he owned a hardware business founded by his father. He keenly felt the pioneering spirit, and generously devoted much effort to community affairs and to improving social and economic conditions in northern Canada. Calder was born in Croydon, England, in 1935. He was educated at Mill Hill, qualified in dentistry at Edinburgh University, and in 1964 emigrated to Canada. His dental practice, based in Yellowknife, covered more than a million square miles. Under government contract, he gave dental care to Eskimo settlements throughout the Western and Central Canadian Arctic, as well as to Indian villages in the vicinity of Great Slave Lake.

Both Calder and Bromley were expert canoeists, with considerable experience of northern rivers. They had studied the works of earlier explorers and delighted in retracing their canoe routes. In 1966, they accomplished a difficult journey from Fort Rae on Great Slave Lake northward to Great Bear Lake. In 1967, following closely the journals of George Back (1834) and James Anderson (1855), their only predecessors along the entire Back River, they set out from its source in Muskox Lake. After twenty-seven days of travel, some 130 km above the river's estuary in Chantry Inlet on the Arctic Ocean, their canoe capsized in rapids and both drowned. Ten days later, the third member of the party, Bromley's 16-year-old son Robert, was rescued by an air search party. He had survived with food and equipment washed ashore after the accident.

The Government of Canada, in recognition of the public services and adventurous spirit of these two men, has undertaken to name two lakes in the vicinity in their memory.

SLOAN DANEHOWER, the United States submarine and salvage expert, died on 1 November 1967 at the age of 82. In August 1931 he accompanied Sir Hubert Wilkins as navigator and second-in-command of the submarine *Nautilus* during the attempt to penetrate the Arctic basin under the ice. Several successful dives were made but mechanical troubles, and the loss of the vessel's diving rudders, prevented any considerable under-ice progress.

JAMES W. DELL, one of the last two survivors of Scott's British Antarctic (*Discovery*) Expedition, 1901–04, died on 21 January 1968 in his 88th year. He joined the Royal Navy in 1895 and served in the crew of *Discovery* throughout the expedition, taking a part in two sledge journeys and finding much use for his skill as a sailmaker in making food bags and sleeping bags. After leaving *Discovery*, he was invalided out of the Navy for two years then rejoined and served until his retirement as Chief Petty Officer in 1921, seeing service in the Dardanelles and the North Sea during the First World War. Shortly afterwards he joined the Shackleton–Rowett Antarctic Expedition, 1921–22, as bos'un and electrician in *Quest*, and was with Shackleton shortly before he died in South Georgia. In later years Dell worked as engineer and electrician on an estate and served in the Coastguard Service during the Second World War. He was a Founder Member of the Antarctic Club.

LORD FLOREY, OM, FRS, Professor of Pathology at the University of Oxford from 1935 to 1962, President of the Royal Society from 1960 to 1965 and Provost of The Queen's College, Oxford, since 1962, died on 21 February 1968.

He was born at Adelaide, Australia, on 24 September 1898 and came to England as a Rhodes Scholar in 1921, later working at the Universities of Cambridge and Sheffield before settling down in Oxford to lead the team of research workers who, in 1940, obtained penicillin in a concentrated form and first demonstrated its efficacy as a chemotherapeutic agent in animals and man—a work for which he was awarded the Nobel Prize for Physiology and Medicine in 1945, jointly with E. B. Chain and Sir Alexander Fleming. Lord Florey had one brief contact with the Arctic when he accompanied the Oxford University Arctic Expedition, 1924, as Medical Officer. The expedition, led by F. G. Binney, sailed in *Polar Bjørn* and *Oiland*, and was equipped with a sea-plane. Four and a half months were spent exploring and surveying Nordaustlandet by means of three sledge parties working from a base at the mouth of Wahlenbergfjord. Owing to exceptionally bad weather, air photographs could only be taken of some 1110 km of coastline.

IVER P. IVERSEN, a member of Ejnar Mikkelsen's *Alabama* expedition to north-east Greenland, 1909–12, died in København on 17 January 1968 at the age of 84. As a replacement for one of the other members of the expedition, he accompanied Mikkelesen on his sledge journey from Shannon Ø to Independence Fjorden. On their return to base they discovered that *Alabama* had been crushed by the ice, and that the rest of the expedition had left.

Mikkelsen and Iversen spent two winters alone on Shannon Ø before being rescued.

After this venture, Iversen returned to naval service and later took up a post in business.

BORIS IVANOVICH PIYP, the leading Soviet vulcanologist, died in Petropavlovsk–Kamchatskiy on 10 March 1966, aged 59. In 1931, when a student of Academician A. N. Zavaritskiy, he decided to devote the rest of his life to study of the volcanoes of Kamchatka. His first major work on the subject was *Termal'nyye klyuchi Kamchatki* [*Hot springs of Kamchatka*], published in 1937. In 1940–46, and again in 1950–54, he was Head of the Kamchatka Vulcanological Station [Kamchatskaya vulkanologicheskaya stantsiya]. In 1958 he became a Corresponding Member of the Academy of Sciences of the USSR, and was made Head of the Academy's Kamchatka Complex Expedition [Kamchatskaya kompleksnaya ekspeditsiya] and Director of its Kamchatka Geological and Geophysical Observatory [Kamchatskaya geologo-geofizicheskaya observatoriya]. In 1962 the Institute of Vulcanology [Institut vulkanologii] was set up at Petropavlovsk, under the wing of the Siberian Division of the Academy of Sciences, and Piyp became its first Director. Among his fifty scientific papers the most important was perhaps *Klyuchevskaya sopka i yeye izverzheniya v 1944–1945 gg. i v proshlom* [*Kluychevskaya Sopka and its eruptions in 1944–45 and in the past*] (1956). Piyp was active also in geographical work, as editor of *Voprosy Geografii Kamchatki*, and was a member of the Kamchatka regional committee (Obkom) of the Communist Party.

ALAN T. WATERMAN, Director of the National Science Foundation from 1951 to 1963, died in Washington, DC, on 30 November 1967, at the age of 75.

After receiving his PhD at Princeton University in 1916, he became an instructor in physics at the University of Cincinnati before joining up in the Science and Research Division of the Army Signal Corps during the First World War. He then became assistant and associate professor of physics at Yale University. During the Second

World War he served with the Office of Scientific Research and Development, becoming Chief of the Office of Field Services. From 1946 to 1951 he was Chief Scientist in the Office of Naval Research before transferring to the newly established National Science Foundation as Director, a post he held with distinction until his retirement in 1963.

The extent of Waterman's contribution to United States scientific enterprise is summed up in a statement by Dr Leland J. Haworth, the present Director of the National Science Foundation.

"...Alan Waterman successfully guided this organization from a small beginning to a position of strength and influence. He, more than any other single person, made the Foundation an important bulwark of the Nation's scientific strength. He left his own indelible mark of quality and of integrity in every field of activity in which the Foundation was involved.

When Alan Waterman took the helm of this fledgling agency in 1951, few in Government recognized the importance of basic research in the total spectrum of the nation's scientific and technological enterprise. Alan Waterman was one of those few; his work at the Office of Naval Research had already established that agency's leadership in providing financial support for basic American science. When he came to the Foundation, he began to build another organization through whose efforts science could develop strength commensurate with its promise and with the Nation's needs.

...Dr Waterman, in concert with the National Science Board, established the basic philosophy, still used in the Foundation, whereby scientists themselves largely determine the direction and progress of basic research..."