

market. Visitors are estimated to have spent \$77 million in the territory, almost half as much again as in 1982 and three times as much as in 1973. (Source; *Yukon Annual Report, April 1 1983 to March 31 1984*, Whitehorse, Government of Yukon.)

Obituary

DONALD SNOWDON, a pioneer founder of Inuit co-operatives in northern Canada, died on 4 April 1984 in Hyderabad, India, aged 55. Born in Winnipeg in 1928, he worked successively as a journalist and Director of Tourism in Saskatchewan before joining the Canadian Department of Northern Affairs as an information officer in 1954. In 1956 he was made chief of the Department's Industrial Division, where he initiated studies of renewable resources, organized co-operatives for fishing and the production and marketing of Eskimo art, and established the Northwest Territories Tourist Office; he was ultimately responsible for establishing 43 co-operatives, involved in a wide variety of business operations, across the Canadian north. In 1964 he moved to Memorial University, Newfoundland, where he directed programmes of extension studies throughout the province. In co-operation with the National Film Board he developed methods of taping and filming local communities as a means of communication with government agencies; the Fogo Film Method, first used with the fishing community of Fogo Island, was later employed in villages and small communities throughout the world. When he died, Donald Snowden was working with the National Dairy Institute of India, training local people to make tapes for education and village development. A member of the Canadian Eskimo Arts Council and the National Film Board, he was Chairman of the Royal Commission on Labrador and had been invited to serve on the advisory board of the Dag Hammarskjöld Institute in Sweden. Memorial University is establishing a memorial fund in support of The Don Snowden Centre for Development Support Communications. (Adapted from an obituary by Edith Iglauer in *Inuktitut Magazine*, 1984.)

Dr HANS FREBOLD, an Arctic geologist with special interests in Spitsbergen and Greenland, died in Ottawa on 2 June 1983. Born in Hannover, Germany, in 1899, he was educated at the Technical University in Hannover and at the University of Göttingen, where he obtained his PhD in 1923. His first paper on arctic geology, written in 1924, was on Jurassic and Cretaceous faunas from Novaya Zemlya which had been collected by the Norwegian geologist Olaf Holtedahl. The contact with Holtedahl led to a lasting friendship. Frebold soon established himself as an authority on the Mesozoic faunas of the Arctic, and collections made by Swedish and Norwegian expeditions were submitted to him for study and description. In 1925 he became an assistant in the Palaeontological Institute at the University of Königsberg, East Prussia, and in 1926 moved to the University of Greifswald (now in East Germany) as a Dozent, becoming a professor in 1931. In 1930 he led a Norwegian Expedition to Spitsbergen, making important collections and observations, and in summer 1931 took part in one of Lauge Koch's expeditions to East Greenland.

Far from sympathetic to the Nazi Party, in 1933 he moved with his family to Copenhagen, where he undertook contract work at the University Institute. There he wrote extensively on Upper Palaeozoic and Mesozoic faunas from Greenland and Spitsbergen, and other detailed geological and palaeontological reports, and published in 1934 the first of several important syntheses, a paper entitled 'Tatsachen und

Deutungen zur Geologie der Arktis' (which he freely translated as 'Facts and Fantasies in Arctic Geology'). The first paper to reveal the scope of his knowledge and interests, this included a sketch map of the whole polar region and tables summarizing what was known of the geological succession. In little-known areas, particularly of northern Canada and Greenland, it was tempting for geologists to speculate, particularly about the age and extent of the circum-Arctic mountain systems. Frebold's palaeontological expertise, coupled with his ability to analyze rigorously the available geological data, enabled him to distinguish between the facts and the fantasies. In 1935 he published a comprehensive book on the geology of Spitsbergen and the adjacent islands, and embarked on a two-volume 'Geologie der Arktis' of which only the first volume, dealing with most of North America and Greenland, was completed. (This was published in Berlin in 1945, but only a single copy, Frebold's own, seems to have survived).

In 1941, with Denmark under German occupation, Frebold became head of the Arctic Department of the German Scientific Institute of Copenhagen. Between 1943 and 1945 his geological expertise was required by the German Navy and he was commissioned as a Korvettenkapitän.

In 1950 Dr Frebold was engaged by the Geological Survey of Canada, and moved from Copenhagen to Ottawa where he became a Canadian citizen. He now returned to the subject of his earliest research by specialising on the Jurassic. He did extensive field work in western Canada, and wrote extensively on collections from Arctic Canada. In 1955 his contributions to geology and palaeontology were recognized by his election to the Royal Society of Canada. Official retirement from the Geological Survey came in 1968, but he continued to work on Jurassic faunas and problems until a few months before he died.

E. T. Tozer

PAVEL AFANAS'YEVICH GORDIENKO, the Soviet sea ice specialist, died on 19 November 1982 aged 69. He started work in the Arctic as a meteorologist in 1937, first at Dikson and then at Mys Shmidta. From 1941 he was on the staff of the Arctic Research Institute [Arkticheskiy Nauchno-Issledovatel'skiy Institut] (now the Arctic and Antarctic Research Institute). His special and continuing concern was with the development of aerial reconnaissance of sea ice cover. In 1955 he was in charge of the relief party on the drifting station SP-4, and in 1956 led the sea ice group of the Soviet Antarctic Expedition. He took part in over 50 expeditions, 22 of them directly concerned with aerial ice reconnaissance. He achieved the titles of Honoured Scientist of the RSFSR, Distinguished Polar Worker, Doctor of Geographical Sciences, and Professor, was awarded The Order of Lenin and other orders and medals, and twice won the Yu. M. Shokal'skiy prize. His bluff good humour will be remembered by all who knew him.

Terence Armstrong

JOHN TUCK Jr died in Worcester, Mass. on 14 August 1984, aged 51. As a young engineer officer in the US Navy, Tuck in 1957 helped to build Amundsen-Scott station at the South Pole, and remained there in charge of military personnel 1957-59.