

W. Dansgaard in *Danish Polar Centre Newsletter* 19: 15–15, June 1990.)

CANADIAN OIL EXPLORATION PLAN REFUSED.

A plan by Gulf Canada Resources to drill six exploratory wells in the Beaufort Sea bed during the next three years was turned down by an Environmental Impact Review Board in early July. The Board is reported to have been dissatisfied with both Gulf's and the Canadian Government's ability to predict the possibility or size of a

blowout, or estimate the extent of possible cleanup and compensation costs. In the worst case, a blowout might result in the release of 40,000 barrels of oil per day for 9–10 weeks, some ten times more than was released in the *Exxon Valdez* disaster. A Gulf response refers to the company's 20-year record of safe operations. Plans to drill an exploratory well 80 km north of Tuktoyaktuk have been shelved because of the unwillingness of other companies to share drilling costs. (Sources: *Inuvik Drum* 26 (19): 1 and 12, 5 July 1990; *News North* 45 (9): A1–A8, 16 July 1990)

Obituary

JOHN ANGUS BECKETT, who served as under-secretary successively at the Ministry of Power, Ministry of Technology and Department of Trade and Industry between 1959 and his retirement in 1972, died in July 1990, aged 80. As a recently-qualified geologist and surveyor of Sidney Sussex College, Cambridge, he took part in the 1932 Cambridge Expedition to Vatnajökull, Iceland, led by Brian Roberts and including Launcelot Fleming (see below). He recounted the party's adventures in a book *Iceland Adventure* (1934, London, Witherby). After working as a schoolmaster he joined the civil service in 1940, becoming an assistant secretary at the Ministry of Fuel and Power by 1947. Later he devised and administered the scheme for allocating licences for exploration and production of North Sea oil. He served three terms as chairman of the petroleum committee of the Organisation for Economic Cooperation and Development, and was appointed CB and CMG.

The Rt Rev **WILLIAM LAUNCELOT SCOTT FLEMING, KCVO, DD**, or 'Launcelot' as he was universally called, was Director of the Scott Polar Research Institute for the two years 1947–49. The full array of Launcelot's talents, activities, and offices, from geology to theology, from polar activity to ordination, from Antarctica to the Friends of the Institute, to the high offices of Bishop of Portsmouth, Bishop of Norwich, and finally Dean of Windsor and Chaplain to HM the Queen, are set out elsewhere, for example in *Times* and *Independent* obituaries, and in *Friends for life*, a biography by Donald Lindsay (1981). Here I report mainly on polar aspects of his life.

Born on 7 August 1906 in Edinburgh, Launcelot Fleming was educated at Rugby and Trinity Hall, Cambridge. He took the Natural Sciences Tripos, in 1929 achieving Class I in Part II Geology despite vigorous rowing and other activities, and won a Commonwealth Fellowship to Yale, where his work resulted in a publication *The geology of Long Island* and the award of an MS. On return he

entered Westcott House, the Cambridge theological college. In the 1932 long vacation he joined Brian Roberts's Cambridge Expedition to Vatnajökull, the first to manhaul across that climatically unpleasing ice cap. In 1933, the year in which he was ordained Deacon at Trinity Hall, he was also chief scientist with A. R. Glen's Oxford University Expedition to Spitsbergen.

From his Chaplaincy and Fellowship Trinity Hall generously allowed him leave to join John Rymill's British Graham Land Expedition 1934–37, for which his title and duties were stated as Chaplain and Geologist, in that order. BGLE was the first major Antarctic expedition to leave Britain since Scott's and Shackleton's last ventures a score of years before. The expedition's foremost contribution was the demonstration and mapping of Antarctic Peninsula, and proof that it was not an archipelago as previously supposed. In this Launcelot Fleming, covering the geology and glaciology, played an important rôle. He was also a splendid sledging companion. With Alfred Stephenson mapping, we were the first to discover and penetrate King George VI Sound in a long dog-sledge journey that provided a wonderful opportunity for geological and glaciological discovery and research. One particular finding was the first stratified and fossil-bearing rock west of the main spine of the Graham Land Peninsula.

Throughout the expedition Launcelot was a strong and moral force, helping it to be an extraordinarily happy party despite its poverty of resources. Physically tough, he was the only member who, for a little bet, swam across the ice-infested creek at the Debenham Islands. Already referred to by some as 'the Bishop', he held a formal parish covering the entire British-claimed Antarctic Territory, of enormous size and utterly empty of people apart from ourselves. He was assiduous in holding Sunday services, preaching a sermon to the small company about once a month. Sincerity, goodness and friendship made this exercise of his first pastoral function acceptable in so small a community. Like all other members he was awarded the Polar Medal on return: his name is commemorated in the

Fleming Glacier, Graham Land.

Launcelot returned to Trinity Hall, advancing to the post of Dean. He presented a fine summary of the Expedition's geological and glaciological work to the Royal Geographical Society in December 1937 (*Geographical Journal* 91 (6): 508–12). World War II prevented him from further writing up his his extensive field-work, which others completed later. When war came he served as a naval chaplain, seeing action in the North Atlantic aboard the battleship HMS *Queen Elizabeth*: he was still with her when she was holed by limpet mines in Alexandria Harbour. After the war he returned to Trinity Hall, where his love of rowing and the coaching of his College eights again became prominent in his life.

In 1949 Prof Frank Debenham, founding Director of SPRI, retired and was succeeded in a part-time appointment by Launcelot. Working to all hours, Launcelot soon showed that he was exactly the right person in the post. Helping the Institute to grow and evolve from wartime to peacetime roles, he was concerned with the appointments of two key figures, Dr Brian Roberts and Dr Terence Armstrong. By friendliness and discussion he introduced the new, international age of polar affairs without detriment to people's feelings for past heroes and emotional pride. It was a period of financial stringency and many difficulties, but his zeal, friendliness and wisdom carried all through. He founded the Friends of the Scott Polar Research Institute, a sturdy body of active helpers, happily still with us today.

To Launcelot's surprise he received a call to be Bishop of Portsmouth, an appropriate naval diocese, becoming the youngest Bishop at the age of forty three. In 1959 he became Bishop of Norwich and in 1971 Dean of Windsor and Domestic Chaplain to Her Majesty. However, Launcelot always managed to keep in touch with the SPRI and polar affairs. He spoke with wisdom and vigour in the House of Lords on topics concerning Antarctica and Conservation. His advice was widely sought by newer polar leaders. Launcelot married comparatively late in life, to the widowed Mrs Jane Agutter: recently they celebrated their silver wedding. He was a wise and pastoral man; his strongest talents were displayed in his dealings with people as individuals. This Friend for Life was loving and much loved to a remarkable degree.

Colin Bertram

Terence Armstrong writes:

For all his competence and interest in science, Launcelot's greatest concern was undoubtedly with people. He made one feel valued; he never condescended, he showed real interest. He was the sort of man one never forgets: quietly impressive, very lovable, of iron principle behind an affectionately teasing exterior. Highly efficient in the big things, much less so in the small. To hear him dictating a letter was a fascinating experience: in the welter of 'ers' and 'ms' and second thoughts and rephrasings, the main verb of any sentence might never be reached. His secretar-

ies knew how to cope, of course. Yet his sermons were word-perfect. It was a real privilege to have known him, and the greatest good fortune to have been given one's first job by him. Of the great and the good, he was one of the greatest and best.

Sir Alexander Glen writes:

It is 57 years since Launcelot was with us in Spitsbergen, but it was some 10 years earlier, in the early 1920s, that he and I first made contact in the magical but bleak moorland of Rannoch, where the Flemings had their house. Wars and turmoil the world over in no way dim the impact of that youthful, deceptively slight figure, as strong physically as he was mentally. It is sad that Bob Ryder and James Martin, two great seamen and both of the British Graham Land Expedition, are no longer alive, for their tributes to Launcelot would have been very special. What can one add to what others have written or will write on a great gentleman, a great human being, a Churchman with the highest ideals and of the finest quality? Perhaps the simple fact that Launcelot had faith and a generous and all-giving spirituality, devoid of intolerance and lit by an inner warmth and love that never dimmed. We who travelled with him, especially in polar lands, were very privileged.

Alfred Stevenson writes:

Mention should be made of the film which the Maritime Museum recently produced on the British Graham Land Expedition, from material shot by Launcelot. This was no mean feat, involving as it did carting a 35 mm camera and massive tripod wherever he wished to film. He always regretted that the apparatus was too bulky to take on the more interesting sledging journeys. A comment on his continued interest in the two important centres in his life: after his retirement an oft-quoted reply to the question 'What is Launcelot's address?' was 'At speed, between Norwich and Cambridge ...'

Bernard Stonehouse writes:

Launcelot leaves many memories of episcopal un-stuffiness. While Bishop of Portsmouth he delighted naval and ex-naval friends by signing his personal letters 'Launcelot † Pompey'. His crook, modified perhaps by a friendly naval artificer, folded down to fit into a very small car. We shall sadly miss him at annual dinners of the Antarctic Club, which he enlivened year after year with a succession of wholly reverend but unorthodox graces. His last one, I recall, desired the Lord to fill all present, not with the lumpen worthiness of porridge, but with the snap, crackle and pop of a more spirited breakfast cereal.

Dr DYFRIG JONES, Head of the Space Plasma Physics Group at the British Antarctic Survey, died peacefully on 6 August 1989 whilst on holiday in Wales. He will be sadly missed by his friends and colleagues.

Dyfrig was born in Pembrokeshire, South Wales. He graduated in Physics at the University College of Wales, Aberystwyth, and went on to complete two PhDs, one in

experimental Space Physics from Aberystwyth and one on theoretical Space Physics from the University of Cambridge. In 1970 he joined the European Space Agency where he worked on the design of signal processing software and hardware for the two highly successful GEOS satellites. He also continued his theoretical work at the ESA by proposing a theory for the generation of a very weak type of radio wave emission called terrestrial myriametric radiation (TMR) detected by the GEOS and other satellites. Dyfrig called this the Linear Mode Conversion Window (LMCW) theory, a term which, together with TMR, became synonymous with his name.

In 1979 Dyfrig joined the British Antarctic Survey where he became head of the Space Plasma Physics Group. He applied his knowledge of signal processing to the wave data recorded at Halley, Antarctica, and installed a new experiment to compare ultra low frequency variations in the Earth's magnetic field with whistler observations at Halley. He continued his work on TMR and applied his theory to explain similar types of radiation detected at Jupiter, Saturn and Uranus by the two Voyager satellites. It was for this work that Dyfrig was promoted to Individual Merit Grade 6 in 1984, only the second scientist inside the British Antarctic Survey to achieve such distinction. During his career Dyfrig published more than 80 scientific papers and in the summer of 1989 he was awarded the ScD degree by the University of Cambridge in recognition of his scientific achievements. He set and maintained very high standards in his work and showed tremendous drive and enthusiasm which he communicated to others. He was also a Fellow of St John's College, Cambridge, Member of Council for the Royal Astronomical Society, and associate editor for *Annales Geophysicae*.

Throughout his illness, which included three operations for the removal of a brain tumour, Dyfrig showed remarkable courage. He did not dwell on his illness but instead retained a cheerful outlook on life; an outlook which was only briefly dampened when Wales lost at rugby. He was Welsh and very proud of it. In fact, some of his most important results on planetary radio emissions were first given, in Welsh, to the community of Welsh scientists. Dyfrig's enthusiasm and sheer hard work were matched only by his devotion to his wife, Elenid, and four children. His inspiration and leadership will be sadly missed by those of us who had the privilege of working with him.

Richard Horne

Dr IVAN MACKENZIE LAMB, a distinguished botanist with polar interests, died at Braintree, Mass, USA on 27 January 1990, aged 78. He was a pioneer botanist of Operation Tabarin, fore-runner of the Falkland Islands Dependencies Survey (now British Antarctic Survey), serving in Graham Land 1943–46. Born in Clapham on 10 September 1910, he spent his youth in Scotland, obtaining his education at Edinburgh Academy and at the University of Edinburgh, from which he graduated in 1933. After

spending two years collecting lichens in Europe he was appointed Assistant Keeper in the Natural History Section of the British Museum, South Kensington, where he became curator of Antarctic lichens, studying the collections of the Scott, Shackleton, Charcot and Drygalski expeditions. In 1942 he earned his DSc, and in the following year was appointed botanist on the then-secret Operation Tabarin, to build and maintain stations in Antarctica. Based for a year at Port Lockroy, he participated in several brief man-hauling expeditions. In a second year at Hope Bay he made more extensive trips exploring the coasts of Graham Land and James Ross Island. An avid collector, from his sledging expeditions he brought back many lichens which he was later to study and write-up in 'Discovery' and British Antarctic Survey reports.

After Antarctica Lamb spent several years at the University of Tucuman, Argentina, studying Andean lichens, and later as cryptogamic botanist at the National Museum, Ottawa, where he worked with Dr Erling Porsild. In 1954 he became curator of Harvard University's Farlow Herbarium of Cryptogamic Botany, where he remained until his retirement in 1972. During this period Lamb travelled extensively throughout Europe, examining museum lichen collections. He made a second visit to Antarctica in 1960 with the US Navy's Operation Deepfreeze, visiting McMurdo Sound. In the same year he became a US citizen. He continued collecting lichens throughout North and Central America, and in Florida developed a new interest in marine algae, developing skills as a scuba-diver. On a third visit to Antarctica 1964–65 he led a diving team which examined marine algae of the South Shetland and Melchior islands.

Undeserved ill-health marred his years of retirement. During the 1980s Lamb succumbed to amyotrophic lateral sclerosis, and from 1986 remained helplessly bedridden until his death. Mackenzie Lamb was an uncommonly good man, greatly admired by all for his gentle kindness and generosity. To have known so fine a soul so well in his prime was a great privilege. Lamb was awarded the Polar Medal and his name is commemorated in a cape on Vega Island. He is survived by his widow, two sons and a daughter.

Andrew Taylor

ROBERT L. LILLESTRAND, an Arctic scientist who participated in several polar expeditions, died 7 March 1990 in Minneapolis, Minn. USA, aged 62. Born in Bismark, North Dakota, in 1927, Lillestrand grew up in St. Cloud, Minn. He gained a Master's degree in physics from the University of Minnesota and spent most of his professional career with Central Data Corporation, where he held for many years the job of chief scientist, government systems. In 1967 and 1969 he carried out pioneering research at the North Pole with two Canadian expeditions. With Hans Weber he measured the plumb line deflection, aided by very accurate astronomical and satellite observations. Complimented by gravity data, this supported the

hypothesis that the Lomonsov Ridge is a fragment of the Eurasian continental plate. In 1968 and 1969, under the sponsorship of the Arctic Institute of North America, he greatly improved the map of Northern Greenland through astronomical fixes, correcting current map ends of 5 to 15 nautical miles. In effect, he showed that Greenland was 2500 square nautical miles larger than had been previously thought. All who knew Bob Lillestrand admired his creativity, enthusiasm and friendship. He is survived by his wife, daughter and son.

Bertrand Imbert

Dr ALLAN ROGERS died in June 1990, aged 72. Born in 1918, he read medicine at Bristol University, and was a lecturer in physiology there in 1957 when invited to join the Commonwealth Trans-antarctic Expedition as medical officer and physiologist for the second season. Based at Shackleton, on the Weddell Sea coast, he undertook a programme of physiological research involving both his colleagues and himself, measuring energy expenditure and acclimation to polar conditions: he was also a much-valued amateur and instrument-mender, and played a full rôle in the fieldwork of the expedition, including the crossing via the South Pole. He was awarded the Polar Medal, and Mt Rogers in the Shackleton Range is named after him. On return to Britain he resumed academic life and practice, undertaking research on blood pressure in infants. Shortly before his death Allan left his medical instruments and experimental equipment to the Scott Polar Research Institute, together with comprehensive notes and papers on his expedition work.

BRIAN SAGAR died of cancer on 12 January 1990. A traveller in the Arctic and West Africa, Brian was Associate Professor of Geography at Simon Fraser University, Burnaby, British Columbia, at the time of his death. Born in Colne, England, in 1927, he took his BSc and teaching diploma at the University of Hull. Then he spent four years with the United Africa Company in northern Nigeria, buying produce and managing trading posts. After teaching at Manchester Grammar School for three years, Brian went to Canada in 1958 to serve as assistant glaciologist on the Defence Research Board's 'Operation Hazen', the International Geophysical Year's expedition to northern Ellesmere Island. He found his true vocation in the Arctic, and returned there in the summers between 1959 and 1966, carrying out glaciological and climatological research.

Before joining the Department of Geography at Simon

Fraser in 1966, Brian worked for the Geographical Branch of the Canadian government. At the university he taught climatology, physical geography and the geography of Africa. He was active in faculty affairs, professional associations, environmental groups and the New Democratic Party. Brian Sagar was a big man in every way. He tackled every task, on the ice and on the campus, with great zest and a ready smile. A boon companion in the tent and on the trail, Brian read widely and deeply and committed himself to enhancing the lives of others. He loved the Arctic, he loved the Canadian outdoors, he loved life. Brian Sagar met his death with the courage and grace that marked his whole life. He leaves a widow, Norma.

Jim Lotz

Prof FREDERICK WILLIAM SHOTTON, MBE, FRS, Lapworth Professor of Geology at the University of Birmingham 1949–74, died on 21 July 1990 aged 83. Although he never had opportunity to visit polar regions to study at first hand the erosive power of ice and its end products, he devoted most of his career to investigating the Quaternary deposits of the English Midlands and their stratigraphy. His acute powers of observation, coupled with ingenious field techniques, allowed him to elucidate the often poorly-exposed Pleistocene deposits. He was probably the first to recognize that all organic deposits associated with glacial strata contain a rich assemblage of insect faunas, seeds and pollen. Using radiocarbon dating to establish a time scale, his detailed studies demonstrated clearly how sensitive these insect faunas are to climatic changes and how even small temperature fluctuations associated with any glacial–interglacial regime can be interpreted.

Fred Shotton gave enthusiastic support to the Falkland Islands Dependencies Survey (later British Antarctic Survey) Earth Sciences Section, which was established in his department in 1956, even encouraging his own departmental staff to participate in both terrestrial and marine geophysical research in the Antarctic. His stature as a leading Quaternary geologist is commemorated by the place-name Shotton Snowfield (Shottonfonna) in the Shackleton Range, Dronning Maud Land, Antarctica. Those who knew him well will remember him as an outstanding natural scientist, and as one who made it his business to understand, assist and encourage his staff, leading to an extremely friendly, happy and productive department. His very personality, acute sense of humour and fund of anecdotes brought great pleasure to all his many friends.

Raymond J. Adie