

WILLIAM LIDDLE BROWN (1929–2007)

Bill, a man of Old Caledonia, in New Caledonia in 1992

Bill Brown was born on December 24, 1929, in Edinburgh, Scotland. He was evacuated to the USA during the war, and then returned to his family in Edinburgh, where he obtained his undergraduate university education. Despite speaking French for most of his professional life, he never lost his slight Edinburgh accent when speaking English. He studied chemistry at Edinburgh University from 1948 to 1952, obtaining a first-class honours degree, then set out to gain a degree in geology, partly, we suspect, because of his love for the Scottish mountains. After only two years, he

obtained first-class honours marks in geology. The great Arthur Holmes was Regius Professor at the time, and Bill was thrilled by his work on the age of the Earth and continental drift. Holmes spotted his talent in crystallography and recommended that he study for a doctorate at the ETH in Zurich, which he obtained in 1958 under the direction of Fritz Laves. This work, on the effect of heating on the cell parameters of plagioclase and the characterization of peristerites, set him on a lifetime study of the feldspar minerals.

After obtaining his doctorate, a year's post-doc at Penn State brought him into contact with a young J. V. Smith, a working relationship that was to become very close. Thirty years later, Bill and Joe collaborated on volume 1 of the second edition of Joe's mighty book *Feldspar Minerals* (1988). This remains one of the greatest mineralogy books ever written and is still an extraordinary mine of information. After volume 1 was published, Joe, Bill and Ian Parsons settled down to write volume 2, on the phase equilibria and natural occurrence of feldspars. By 1993 Bill and Ian had almost completed the phase-equilibrium chapters, but Bill became Director of the CRPG, Ian became Head of the department in Edinburgh, and Joe became much involved with the Advanced Photon Source at Argonne. Volume 2 was never completed, and by a sad and remarkable coincidence, both Bill and Joe passed away in the same year.

Bill held various posts during his career, starting with research assistantship positions at ETH (1957–1958 and 1960–1962) and Penn State (1959–1960), then Lecturer in Geology at the University of Manchester (1962–1966), Maître de Conférences associé (1966–1969), and Professeur associé at the University of Paris VI (1969–1973) and the University of Nancy (1973–1983). He joined the Centre National de la Recherche Scientifique (CNRS) in 1984 as Chargé de recherche at the Centre de Recherches Pétrographiques et Géochimiques (CRPG) in Nancy, and was promoted to Directeur de recherche in 1986. He served as Director of the CRPG from 1991 to 1994. After his retirement in 1997, he continued working in an emeritus position for 10 years. He was an editor of the *Journal of Petrology* and a consulting editor of the *Transactions of the Royal Society of Edinburgh*. He directed the NATO Advanced Study Institute (ASI) on feldspars and feldspathoids in Rennes in 1983 and was a member of the organizing committee of the NATO ASI on feldspars held in Edinburgh in 1993.

During his younger days, Bill was a keen mountaineer and skier, despite having lost an arm as a teenager falling from a tree. At one time, with a group of Edinburgh friends, he held the speed record for climbing all the British mountains over 4000 feet (1220 m) without stopping. Readers accustomed to greater ranges may find 1200 m insignificant, but Scottish mountains start at sea level, and the whole enterprise involved 136 km of walking and 5000 m of ascent, a considerable athletic undertaking.

Bill's career effortlessly combined field-based petrology with cutting-edge mineralogy. His best-known early paper (1974), with Chris Willaime, was concerned with the orientation of coherent exsolution lamellae in

alkali feldspars, and this work is one of the earliest applications of the electronic computer to a problem in mineral physics. His collaboration with Daniel Ohnenstetter started in 1973 when he supervised Daniel's research on ophiolites in Corsica. This was followed by work with Daniel's wife, Maryse, on deformation of the Harris anorthosite and related pseudotachylites in Scotland. Work on alkaline ring complexes in Cameroon and in the Aïr region of Niger followed. Bill and Daniel visited New Caledonia to study the occurrence of boninites, fascinating volcanic rocks devoid of feldspar. The mineral's absence was explained by the suppression of feldspar nucleation in a water-rich melt under rapid cooling conditions. Bill and Ian began to work together in 1977, and in 1981 they published a graphical, ternary, two-feldspar thermometer based on thermodynamic relationships that underlie modern computerised versions. Many of their subsequent papers involved TEM work on feldspars from the Klokken intrusion in South Greenland, a Rosetta Stone for alkali feldspar studies. In 1993 Bill wrote the definitive paper on ternary feldspar–liquid–vapour relationships, a phase diagram tour de force. His last research project, carried out with Mike Toplis, was a study of the microtexture of cumulates from the Skaergaard intrusion, which they visited in September 2001.

Bill was married to Françoise-Romaine, daughter of the celebrated French organist of Saint Eustache in Paris, Joseph Bonnet. Five children were born from their marriage: Marie-Claire, Stéphanie, Ian, Lucie and Guillaume. Each year, Bill's family spent their holidays in their cottage on the island of Barra, in the Outer Hebrides. Bill was deeply affected by the death of his son Ian. Bill died on November 12, 2007, after a long illness.

Daniel Ohnenstetter, CRPG, Nancy
and **Ian Parsons**,
University of Edinburgh

BJØRN BØLVIKEN (1929–2009)

Bjørn Bølviken, formerly division director at the Geological Survey of Norway (NGU) and Professor II at the Norwegian Technical University in Trondheim (NTNU), died on January 19, 2009, at the age of almost 81. Bjørn Bølviken played an important role in the development of regional and applied geochemistry.

Curiosity was the driving force behind Bjørn's scientific career. He was a pioneer in establishing medical geology in Norway. Looking at his career is

like studying the history of applied geochemistry. He had an important impact on the development of regional geochemical mapping as an aid to understanding natural processes driving the distribution of chemical elements in the terrestrial environment. Natural lead poisoning, electrochemistry and fractal geometry are some important landmarks along that way. Bølviken's ability to see research possibilities led him into quite different fields of science, and he established cooperation with medical doctors, physicists, statisticians, geographers and botanists. That led to a scientific production that was both substantial and innovative. Bjørn was an extraordinary lecturer, and he was in demand by both the general public and his scientific peers. In 2008 the International Association of GeoChemistry honoured Bjørn's scientific impact on applied geochemistry with the Vernadsky Medal.

For his students and young scientists, Bjørn was an outstanding mentor because of his ability to generate a creative atmosphere. His colleagues will never forget the person, his humour, his drive and his enormous curiosity in all that is geochemistry. We wish to thank Bjørn for all that he has taught us. We feel that with Bjørn's death an epoch in geochemistry ends. Our thoughts are with his family.

Rolf Tore Ottesen, Tore Volden,
Amund Rein, Clemens Reimann, NGU