

ADVENTURE, M'BOY, ADVENTURE!

Reputedly, when the great British geologist Sir Edward Bailey (1881–1965) was about to retire, his assistant asked him, 'What will you do now, sir?' Bailey replied 'Adventure, m'boy, adventure!' Many readers will have chosen to become geologists because of the prospect of adventure, and it was certainly the case for me. As a young teenager, I became enthralled by the mountain travel books of Eric Shipton (1907–1977) and H. W. Tilman (1898–1977). They were very accomplished mountaineers and explorers, visiting regions in the Himalaya, the Karakoram and central Asia which at the time were unknown to western travellers and in many places untrodden by man. They lived and moved in these wild places for months on end, and were tough, brave and resourceful in ways beyond the imagination of us ordinary folk. Their writing is marvellously understated, rattling with stiff upper lip, and always with an undercurrent of humour.

I was just an ordinary teenager. I knew I was of a different species compared with my heroes. I lived in a village in southeast England and had never even seen a mountain, but the thought that new lands were there to explore, even in the 20th century, was thrilling. The idea that geology might provide a means of joining the explorers entered my teenage head from another mountaineering book. My father was a big figure in the village church, which each year ran a summer fête on the cropped lawns outside the flint walls of the local Norman castle, begun in 1085 just after the Conquest. My job was to sit at a little table at the entrance gate and collect money from visitors. My reward was to make my choice of books from the second-hand bookstall before the public arrived.

In 1954, I bought a book called *The Mountain World, 1954*, published by the Swiss Foundation for Alpine Research. The series *The Mountain World* was published annually and provided beautifully illustrated accounts of the great mountaineering feats of the year previous. Nineteen-fifty-three was a vintage year for mountaineering. Everest was ascended for the first time, by a predominantly British party, and Nanga Parbat was conquered by a German team, the summit being reached in a celebrated solo ascent by Hermann Buhl.

At the back of the book was a modest article by a geologist, Erdhart Fränkl, of the University of Basel (Switzerland), entitled 'Across the Mountains of North Peary Land'. Fränkl described how he and his PhD student, Fritz Müller, made the first crossing of the fold mountains of Peary Land (Fig. 1), the most northerly land in the world, while recording the geology. They reached Kap Morris Jesup, the northern extremity of Greenland¹, at 83°38' N, overland for the first time. Robert Peary had previously reached this cape in 1900 while sledging on the sea-ice. Fränkl and Müller used a Norseman floatplane to reach the starting point of their ten-day northward overland journey, landing on a stretch of open water at the head of Frigg Fjord (Fig. 2). This open water was discovered in 1938 by the celebrated geologist Lauge Koch, who called it 'Drivhuset', or the 'hot-house'. To me, as a teenager, it seemed that exploring the Greenland wilderness was a wonderful yet achievable adventure. You needed to be tough and resourceful, but you didn't have to be a super-hero, like the high-altitude climbers. Geology, I concluded, was the way to go.

By 1980, I had taken part in four expeditions to South and East Greenland, and had plenty of adventures, on some occasions more than enough! Then, early in 1980, my great friend and leader in the fierce terrain of East Greenland, Peter Brown (who wrote the Parting Shots in the last issue of *Elements*), told me that he had been asked to take part in the mapping programme of the Geological Survey of Greenland (Grønlands Geologiske Undersøgelse – GGU) in Peary Land. I was green with envy. A month later, he told me he had been invited



FIGURE 1 The folded Cambrian rocks of the Roosevelt Range, in the extreme north of Greenland. The peak on the right is about 1500 m, and the frozen sea forms the centre left.

to select a field assistant and asked if I would like that role. Envy was replaced by euphoria. By an unfair quirk of fate, Peter couldn't come for the first month because of national administrative responsibilities, so I had a Danish student as an assistant.

The expedition left Denmark on the 16th of June in a Danish Air Force C130, spent a night in the NATO base at Keflavik in Iceland, and then flew due North for 4.5 hours to Station Nord, a Danish military and meteorological base 872 km from the Pole. A GGU base camp had been established in previous years at Jørgen Brønlund Fjord, 220 km to the WNW of Nord, on the northern shore of the long Independence Fjord, named by Peary in 1892. The expedition was a masterpiece of organization, brilliantly led by Neils Henrikson of the GGU. It was, without question, the most rewarding experience of my career.

Peter and I were responsible for mapping the Kap Washington volcanic series (Fig. 3), on the north coast to the west of Kap Morris Jesup (see *Elements*, 2008, v4n1, p 72). These volcanic rocks had been discovered during the British Joint Services Expedition to Peary Land in 1969 by two British geologists, Peter Dawes and Jack Soper, who had been



FIGURE 2 Our Twin Otter aircraft at Frigg Fjord, or 'Drivhuset' (the 'hot-house'), showing the open water where Fränkl and Müller had landed by Norseman floatplane in 1953 to cross Peary Land for the first time. The picture was taken at 5 minutes after midnight.

¹ Kap Morris Jesup is not the most northerly land on Earth. This honour goes to Kaffeklubben Island, further to the east, which is 750 m further north. See *Elements* (2008), v4n1, p. 72.

EARTH SCIENTISTS ELECTED TO THE ACADEMIA EUROPAEA

In 2015, five Earth scientists were elected as members of the Academia Europaea (www.ae-info.org). Academia Europaea was founded in 1988 and is a European, nongovernmental association that acts as an academy and has about 2800 members. It includes leading experts from the physical sciences and technology, the Earth and environmental sciences, the biological sciences and medicine, mathematics, the letters and humanities, the social and cognitive sciences, economics, and law.



Greg Houseman is a professor of geophysics in the School of Earth and Environment at the University of Leeds (UK). Houseman researches the deformation and instability of the continental mantle lithosphere by using both computational modeling techniques and regional seismic tomography. He previously held posts at Monash University (Australia), Australian National University, and Harvard University (Massachusetts, USA).



Sean Willett is a professor of Earth surface dynamics at Eidgenössische Technische Hochschule Zürich (Swiss Federal Institute of Technology, or ETH Zürich, in Switzerland), where he works on the interactions among tectonics, climate, erosion, and sedimentation. His research makes use of forward and inverse models, as well as innovative applications of thermochronometry and geochemical proxies, working towards a better understanding of the Earth's surface.



Ülo Mander is a professor of physical geography and landscape ecology and head of the Department of Geography within the Institute of Ecology and Earth Sciences at the University of Tartu (Estonia). His research interests include nutrients and carbon cycling in landscapes and ecosystems and ecological engineering (material flux controls in watersheds using constructed wetlands and riparian buffer zones). He is currently a visiting professor at the French National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA) in Antony/Paris.



Klaus Mezger is a professor of isotope geology in the Department of Geological Sciences, University of Bern (Switzerland). His research and teaching center on geochemistry and cosmochemistry. His main research interests are the timing and processes of planet formation in the Solar System and the genesis and evolution of Earth's continental crust, including its metamorphic transformation.



Dimitrios Sokoutis is a professor and the director of the Tectonic Laboratory at Utrecht University (Netherlands) and adjunct professor at the University of Oslo (Norway). His research combines field studies with physical analogue modeling and builds bridges to numerical modeling. He integrates these methods to study rheological aspects of lithosphere deformation and feedback relations with surface processes.

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the last people to visit this area. We found a note from Dawes and Soper recording their discovery in a sardine tin on the summit of Kap Washington. We replaced it reverently in its tin. Perhaps it is still there, all alone. Every four days we used a helicopter to move camp and for reconnaissance. At its most distant, our tiny two-man tent was 185 km from base and for much of the expedition we were the most northerly humans on Earth, except, possibly, for those lurking in nuclear submarines under the Arctic Ocean. All the world's teeming billions down there, beneath our feet.

Real adventure arrived with a bang on Kap Washington when on the 7th August our tent blew away in a violent sleet storm. Soaked to the skin in ice-cold water at 83°33' N, in a wind that made standing difficult, conditions were less than ideal, but we managed to make a mayday call to base. After a cold 'night' (it never got dark during the expedition) spent under the groundsheet of our ruined tent, we were rescued by a brave and skilful Swiss helicopter pilot and flown to the nearest Sirius hut. There are about 50 Sirius huts in North Greenland, named after Sirius, the Dog Star. They are used by the Sirius Patrol, an elite unit of the Danish Navy that maintains Danish sovereignty in northern Greenland using two-man dog teams of up to 15 dogs. After we had slept, the pilots made us a real Swiss cheese fondue. They had all the accoutrements: the silver bowl, the heater to keep it warm and the special forks. When we returned to Kap Washington four days later to recover our gear, it was under a metre of snow. Summer was over.

During the two-month field season, we sometimes landed at Frigg Fjord on a gravel strip (FIG. 2) where previously Fränkl and Müller had landed their floatplane on the open water of 'hot-house'. Like them, my assistant and I encountered a polar wolf, solitary and rare. It walked up and down a few metres in front of us, with its nose in the air, decided we



FIGURE 3 Home, sweet home. Peter Brown at our camp on the northeast side of Lockwood Island, in the Late Palaeocene Kap Washington volcanics.

didn't smell too good, and padded off up a stream bed into the void that is Peary Land. When, as a teenager, I bought my mountaineering book at a church fête, the idea that I might experience such remote spaces led me to study geology. Never for one moment did I expect to follow so closely in the steps of these two adventurous Swiss geologists.

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