

or for scientifically oriented naturalists. The content may, however, be a little dense for naturalists who are not used to scientific and academic writing and who are looking for an informative, enjoyable, and relatively uncomplicated read. That said, those readers willing

to wade into the material and make the effort to understand it will find the endeavour well worthwhile and will learn a great deal.

RENATE SANDER-REGIER

3, 11th Line, Bristol, Quebec, Canada

MISCELLANEOUS

Innocents in the Dry Valleys: An Account of the Victoria University of Wellington Antarctic Expedition, 1958-59

By Colin Bull. 2009. University of Alaska Press, 794 University Avenue, Suite 220, Fairbanks, Alaska 99709 USA. 267 pages, 25 USD Paper.

One of the most remarkable and puzzling Antarctic finds by the *Discovery* expedition was the existence of an inland ice-free valley on the west side of McMurdo Sound. When Robert Scott, William Lashly, and Edgar Evans slogged into the valley in December 1903, it impressed them as “a very wonderful place.” It also impressed them by its apparent lifelessness, no doubt reinforced when they also found the mummified remains of a Weddell seal. Scott famously described the valley in his diary as “a valley of death”. However, this ice-free terrain, offering good rock exposures, was a magnet to the geologists on Scott’s second expedition. In 1911, Griffith Taylor, after whom the valley is named, with Charles (“Silas”) Wright, Edgar Evans, and Frank Debenham, spent several days there examining the geology.

Skip forward to the late 1940s, when aerial photography revealed the existence of two more large “dry valleys,” now called Wright Valley and Victoria Valley, in the same area. In the austral summer of 1957-1958, Colin Bull tells us, two geology undergrads from Victoria University of Wellington in New Zealand, Barrie McKelvey and Peter Webb, managed to finagle their way onto the team re-supplying New Zealand’s Scott Base in Antarctica. Together with Dick Barwick, a junior lecturer in biology at Victoria University of Wellington, Barrie worked in Victoria Valley, until then unexplored. McKelvey and Webb also spent time mapping sandstones and dolerites in Beacon Valley, a tributary of Taylor Valley. Back in New Zealand, they talked enthusiastically about their summer field experience. By coincidence, Colin Bull, then a newly hired physics lecturer fresh from the UK, heard one of their talks. Bull already had several years’ field experience in the Arctic carrying out geophysical surveys. He was thinking about trying to initiate fieldwork in Antarctica, having been intrigued by the air photos of the McMurdo Dry Valleys shown to him by Vivian Fuchs during a visit to Cambridge. Bull’s target was Wright Valley, located between Victoria and Taylor valleys and so far unexplored. Immediately, he recruited McKelvey, Webb, and Barwick onto his team. They spent several months scrounging up funds and

field supplies, notably by persuading various manufacturers and food suppliers to donate their products, while Bull negotiated the delicate official hurdles to get them to Antarctica. Eventually, the entire expedition was accomplished on a shoestring budget of about \$1,000.

Bull provides a lively and engaging account of their subsequent two-month field season in Wright Valley, with studies encompassing geophysics, geology, and biology. The valley provided plenty of scope for their fieldwork. Stretching inland for about 60 km, the valley is bounded by steep slopes of the Asgard and Olympus ranges. Cliffs are cut in sandstones topped with dolerite, while lower slopes are cut in granites, and igneous dykes protrude along the valley floor. The valley terminates in glaciers at both ends, with moraines providing additional evidence of earlier glacial episodes, while many smaller glaciers spill down side slopes. A large enigmatic ice-covered lake, which they named Lake Vanda, lies toward the west end of the valley and is fed by the Onyx River.

“It really was the most exciting view in all directions, the huge sandstone cliffs, the monstrous icefalls, everything!” exclaims Bull. “How can I tell you easily how excited we all were?” (page 75).

Given the size of the field area and their limited time, they were able to do only preliminary reconnaissance studies. Bull and Barwick did topographic mapping and survey work. Bull carried out a gravity survey to investigate subsurface structure and collected oriented rock samples for palaeomagnetic studies to provide evidence of polar wandering. McKelvey and Webb mapped and characterized the bedrock geology and collected rock samples for their MSc theses. Barwick hunted for life forms, terrestrial and aquatic. They also set up a Stevenson screen and recorded weather observations. All their data were interesting and significant because so little was known about this area.

Beyond the purely scientific objectives, this was a great adventure. Bull describes the vicissitudes of camp life and fieldwork, challenges exacerbated by the remoteness of their field area, which also lent a distinct edge and more than a touch of danger to their

experiences. They were aware that “this beautiful land was also a hideously dangerous place” (page 70). With considerable humour and some great colour photographs, Bull describes the hard work, fun, and rewards of their fieldwork. They definitely needed all their youthful energy and exuberance. Conditions were certainly trying. They were continually blasted by sand carried by the strong winds that constantly blew along the valley. This made carrying their field equipment and taking measurements difficult. The sand also added an unwelcome garnish to their meals. Survey work required getting to heights of land, which entailed some hair-raising scrambles along icy, rocky slopes and ridges. Crossing a glacier, Bull and Barwick experienced a “firnquake.” The weather was highly variable, from swelteringly hot to cold and snowy; they lost field days to storms that kept them tent-bound.

Despite the difficulties, Bull characterizes their field season as highly successful when he enumerates their achievements. This was the first expedition to Antarctica organized and planned from a university. They were the first group to visit and undertake scientific work in the Wright Valley. They estimated the depth of Lake Vanda (70 m) and the thickness of the Wilson Piedmont Glacier (250 m). They recorded and examined the mummified penguins and especially seals, of which there were surprisingly many. They found nematodes, rotifers, algae, and lichens growing in this place that seemed lifeless. They documented rain, which wasn't supposed to occur in Antarctica. They did basic geological assessment of about 2600 km² of mountainous terrain. They brought back important geophysical, biological, geological, meteorological, and geomorphological observations that formed the basis for many later studies.

Skip forward to 2005 and a reunion. The four of them met up again at an event to celebrate decades of fieldwork at Vanda Station. The reunion was a convivial occasion, with much telling of tales and sharing of field experiences. It was from that reunion that this book grew, with Bull deciphering his field notes and supplementing the account with photographs and field notes from his three colleagues. His reliance on those contemporary records gives this chronicle an immediacy and freshness that are captivating. The narrative was expanded by more reminiscences generated by another reunion in 2007 to celebrate more than 50 field seasons of work in Antarctica by faculty and students from Victoria University of Wellington. As leader of a pioneering field season, Bull is understandably proud of this achievement. Indeed, all team members have much to be proud of. All four contribute concluding essays to this book, summarizing their subsequent careers and, in three cases, their continuing involvement in Antarctic studies. Peter Webb reports that he has “participated in 22 expeditions and spent more than three years south of the Antarctic Circle” (page 226) in the course of his research career. Several of the “big names” in recent polar science are their students or

students of their students. And so their scientific legacy lives on.

Situated midway between the “heroic age” of polar exploration and today, Bull's account provides some thought-provoking comparisons and contrasts. In many ways, the technological, attitudinal, and scientific distance between Bull's fieldwork and Scott's is much greater than between Bull's and today's. Bull's group had radios and could get in touch with McMurdo or Scott bases; they had plenty of food and fuel and were never in danger of starvation; they were flown in to their field area by helicopter instead of man-hauling their gear on sledges from their base. Yet they lacked most electronic gadgets we carry today, especially for communication; surveying was done slowly and painstakingly by theodolite and aneroid barometer rather than by total station and GPS; apart from radio check-ins, their fieldwork was unencumbered by “risk management”; and, by burying or burning their waste and garbage, they were not as concerned with the ecological footprint of their activities.

However, in many ways fieldwork has not changed over the decades. The cold and discomfort of a wet camp, the obsession with food, the hard and tiring physical activity, and the sudden danger from swift weather changes: these are the perils of fieldwork. The exhilarating sense of discovery, the absorption in understanding and interpreting the landscape and biota, and the excitement of exploring new questions generated by observations and measurements: these are rewards of fieldwork that are the same in any climate and any time. So are wry memories of the opportunities missed. When taking survey readings on Mount Jason, Bull describes finding and dismissing a porous piece of sandstone with “a dark line just under the edge” that he thought was simply an odd weathering phenomenon (page 105). Years later, the line was found to be an extremophile endolithic bacterium living in that protected and sheltered microenvironment, one of the subsequent significant scientific discoveries in the McMurdo Dry Valleys.

Why should this account interest anyone other than people who were or are involved in Victoria University's Antarctic fieldwork? At first glance, this appears to be simply a minor historical footnote about an obscure place and esoteric research. It is that, of course, but it is nevertheless well worth reading. Bull presents an enthusiastic historical perspective of what it was really like to do field science. Unfortunately, this book is not well served by its title, which does not indicate what the expedition was about. Moreover, Bull never explains in what way he and his companions were “innocent.” Readers expecting a trekking adventure will be surprised by a different kind of endeavour. Those with an interest in Antarctica or the history of polar science will be fascinated and delighted.

ALWYNNE B. BEAUDOIN

Royal Alberta Museum, Edmonton, Alberta, Canada