

NOTES

SOME NOTES ON A SLEDGE JOURNEY FROM STONINGTON ISLAND 1940–41

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It has been nearly 40 years since a little known, yet remarkable, sledge journey was made in the peninsula region of Antarctica south from the 1939–41 US Antarctic Service Expedition's base on Stonington Island (East Base). The 84-day trek, undertaken in the austral summer of 1940–41, was the main southern sledge journey of this expedition, which was led by Admiral Richard Evelyn Byrd and brought to an abrupt end by America's entry into World War II. Finn Ronne (Byrd's second-in-command) and ornithologist Carl Eklund were the first to travel down the interior of Palmer Land south of 70°S and explore the west coast mountains and glaciers from the inland side. The only exploration previously undertaken on the ground in that part of the peninsula was the 1934–37 British Graham Land Expedition (BGLE) which, south of 70°S, confined exploration to George VI Sound.

In the years immediately following World War II, the British began a systematic programme of surveying and mapping from a base on Stonington Island. The areas first mapped were naturally those most easily accessible. Sea ice conditions during this period were excellent and work was concentrated along the coastal regions of Marguerite Bay and George VI Sound, improving and adding to the work of the BGLE. Consequently, 20 years elapsed before a Falkland Islands Dependencies Survey (FIDS) party re-discovered the American route on to the Graham Land plateau. Since then survey work has been carried out in Palmer Land and George VI Sound by the British Antarctic Survey (BAS—the successor to FIDS), at first using plane tabling techniques, giving way later to the establishment of ground survey control by electromagnetic distance measurement in order to map from US Navy trimetrogen photography—a technique in its infancy in 1940.

Recent compilation from ERTS imagery of 1 : 250 000 topographic maps (Series BAS 250P) of western Palmer Land and southern Alexander Island has finally made it possible to trace the hitherto uncertain route taken by Ronne and Eklund. Unfortunately, the only relevant map produced by the expedition is that contained in the official report (*Proceedings of the American Philosophical Society*, Vol 89, No 1, April 1945) which is on too small a scale to make positive identifications of features. Also, Ronne's campsite co-ordinates are known to be sufficiently in error to cause considerable ambiguity as to his actual route.¹ However, ground panoramic photographs were taken at selected campsites together with theodolite angles. By identifying features on these photographs and again on relevant trimetrogen and panoramic photographs from BAS trigonometric stations, it has been possible to fix by resection the positions of Ronne's campsites on the new photo-maps (Fig 1). Ronne's narrative (p 13–22 of official report) is also useful in building up a picture of the route between widely spread 'fixes'.

Two sections of the journey, however, remain somewhat of a mystery: the route through the Batterbee Mountains to George VI Sound and the route both ways between the Wordie Ice Shelf and the plateau to the south. Whereas one can make a reasonable guess at the former with the help of some of the panoramic photography and the official narrative, the latter has inevitably been the subject of some controversy among people who have travelled and worked near the area. After seeing it from both ground and air, one can only be amazed that a route was possible at all. Writing of this section on the outward journey, Ronne, not normally given to exaggeration, says, 'The following four days took us through the most dangerous crevassed area that, I believe, can ever be encountered in Antarctica. Huge open crevasses, over which we crossed on narrow snow-bridges, were most common; but the hidden crevasses were also numerous and they caused us great concern'. This could, of course, be a description of many areas in the Antarctic, but the area

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Reconstruction of Ronne and Eklund's route from Stonington Island.

in question between Mount Balfour and Triune Peaks has never subsequently been crossed, or even attempted, despite some detailed geological mapping undertaken around Triune Peaks. Ronne's co-ordinates would also need to be severely in error to put him anywhere near a 'safe' area. Nowadays there is rarely any necessity for ground travel through badly crevassed areas and it is my opinion that this must rank as one of the most hazardous journeys accomplished in the Antarctic (comparable to Amundsen's negotiation of the icefalls on the Axel Heiberg Glacier).

For the first part of the journey Ronne and Eklund were accompanied by Glenn Dyer and Donald Hilton (surveyors), Paul Knowles (geologist), Joseph Healey (dog driver), and Lytten Musselman (radio operator). Following Alfred Stephenson's (BGLE) route the party reached Wordie Ice Shelf by sea ice over Marguerite Bay. Unlike Stephenson, however, they continued in a southerly direction, ascending the Fleming Glacier towards a cache near Garcie Peaks established earlier by aircraft. Having reached the plateau above the ice shelf, and unable to locate the cache, the party split up. The five supporting members returned to base while Ronne and Eklund continued south following a straightforward route as far as 'Blizzard Camp' at the head of the Meiklejohn Glacier. Here the two descended from the 'high' plateau before continuing in a southerly direction approximately 30 km in from the coast. A descent towards George VI Sound was attempted down the Ryder Glacier but was thwarted about 12 km from the Sound edge by crevassing². Instead a southerly course was followed along approximately $66^{\circ}30'N$ as far as Mount Cadbury, before the pair again turned westwards through the Batterbee Mountains towards a cache in George VI Sound.

From the brief description of this part of the route, it is probable that they followed a zig-zag course starting along the southern side of Mount Ness, then cutting southwards in front of Mount Bagshawe to the 'Otter Glacier'³ following the now traditional 'BAS route' to the Sound. The alternative would have been to continue westwards and enter the Sound just north of Swine Hill. If this latter course had been taken, however, some passing mention would surely have been made of nearby Gadarene Lake, a fairly large melt-water lake observed eight years later by Dr Vivian Fuchs on a FIDS journey but which has subsequently disappeared. Ronne's co-ordinates for 1-2 December also suggest a more devious route.

Apparently the original intention had been to continue south past the Batterbee and Seward mountains before turning west to follow the coast. However, plans were changed and from the 'Batterbee cache' they now proceeded south-west and, rather inexplicably, climbed up into southern Alexander Island south of Coal Nunatak before descending once again to George VI Sound and continuing on to the Eklund Islands. Ronne does mention approaching 'pressure ice which extended beyond the horizon in a south-easterly direction' as he approached the south-east corner of Alexander Island; presumably he considered this a possible barrier to further progress on the Sound.

The party did in fact travel for a considerable distance beyond Eklund Islands on the sea ice of Ronne Entrance, their most westerly position being the mouth of a bay in Stange Sound north-west of Smyley Island at approximately longitude $77^{\circ}W$. This last 300 km, a journey over sea ice along a coast of ice cliffs, must in itself have represented a considerable risk at that time of year.

The return trip was not without its interesting aspects. George VI Sound was followed exclusively until just north of Carse Point where it appears that the Riley Glacier was chosen as the access route to the plateau above the Wordie Ice Shelf in preference to Stephenson's route up the Eureka Glacier near Terminus Nunatak. From Ronne's co-ordinates, it is clear that their route passed north of Mount Dixey and Mount Pitman. A safer route between Mount Dixey and Mount Flower was subsequently used by BAS parties.

Further north near the head of the Wordie Ice Shelf, the route once again becomes vague. The same large crevasse fields encountered on the outward journey appear to have been crossed 'without too much labor', and Sickie Mountain was eventually reached via the lower Hariot Glacier, after only two days' travel across a 'badly crevassed area' from a position at least 15 km south of Garcie Peaks—a truly remarkable run even allowing for good surfaces. Ronne's co-ordinates are little help here and this must remain the big question mark of the trip.

From Sickie Mountain the route followed the Meridian, Lammers, Gibbs and Neny glaciers back to Stonington Island, previously reconnoitred by air, thus avoiding the climb up the Wyatt Glacier to the plateau and the treacherous icefalls at the head of the Northeast Glacier—used many

times in later years by BAS parties. The descent of the Neny Glacier, although understandable after a long journey from the point of view of the topography, must have caused some anxiety. It is worth mentioning that when the British later established a base on Stonington Island in 1946, a party made a ground reconnaissance of the Neny Glacier to investigate the possibility of a route to the interior, but abandoned it in favour of the Northeast Glacier route. To this day no party has ventured on Neny Glacier, notorious for its crevassing and vulnerability to strong katabatic winds. Ronne and Eklund's journey must rank as one of the more impressive of the exploratory sledge journeys in Antarctic history, particularly in view of the fact that the party was out of radio contact with the base for virtually the whole of the return trip.

After World War II, Ronne returned to Stonington Island for a year as leader of a private expedition to continue the exploration begun in 1940. Both he and Eklund later became leaders at American Antarctic stations during the International Geophysical Year (1957-58), Ronne as base leader at Ellsworth Station on the Filchner Ice Shelf, and Eklund as station scientific leader at Wilkes Station. Eklund also became a pioneer of Antarctic conservation and his name is commemorated in the biological centre at McMurdo station, America's main base.

Notes

¹ Although not consistently in error there is a tendency for Ronne's co-ordinates to be in error to the south-west. They vary in accuracy as some are sun fixes while others merely 'dead-reckoning' positions.

² It is interesting to note that Ronne's co-ordinates for this lowest camp on the Ryder Glacier puts his position on the coast, ie an error in longitude of approximately 12 km.

³ 'Otter Glacier' is the unofficial name traditionally given to the glacier flowing south-westwards through the Batterbee Mountains immediately south of Mount Bagshawe.