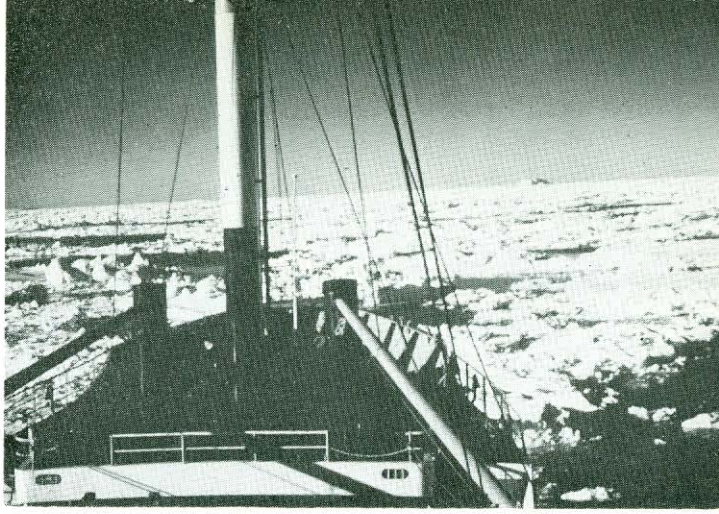
LIFE IN THE FIELD

by T. G. Schaefer

(SANAE 12)



The R.S.A. breaking its way through the pack ice.
(Photo: T. G. Schaefer)

Introduction

For a number of years the South African National Antarctic Expeditions have had field parties operating, during the summer months, in the interior of Western Dronning Maud Land. Early every summer these parties would leave the sheltered confines of Sanae, the main South African base situated on the Ice Shelf at position 70°18½'S, 2°21½'W and travel southwards into the mountain regions of this portion of the continent to do geological and geophysical work.

It was not until 1969 that one of these field parties spent an entire year in the field – overwintering in the mountains in what is termed a semi-permanent base. This party consisted of four men and has become known as the Borga 1 team – the name being derived from the mountain range, the Borg Massif, in which this first semi-permanent base was built. There are definite advantages in having the expedition's field party over-wintering in the mountains – the chief advantage being that at the beginning of summer the men are already in the area in which they are going to work so the time that would have been spent in travelling inland can now be more profitably employed.

In 1970 the second Borga team headed south with the aim of over-wintering once again in the mountains and continuing scientific work where the Borga 1 team had left off. Unfortunately Borga 2 had a run of bad luck and were forced by weather and vehicle difficulties to return to Sanae shortly before winter closed in only to return to the field at the beginning of the next summer.

At the beginning of 1971 Borga 3 moved south from Sanae and this article tells a little about the life, work and some of the experiences of these members of the 12th South African National Antarctic Expedition, during their year in the field.

The R.S.A. moored in Otterbukta.
(Photo: T. G. Schaefer)

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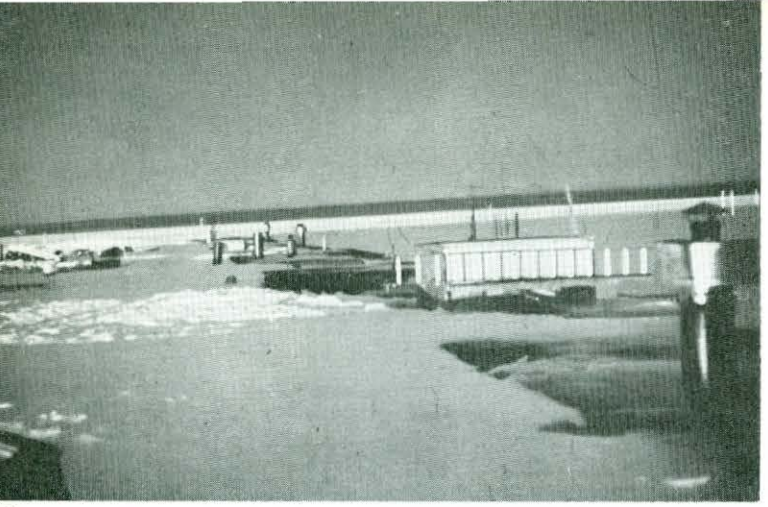
Narrative

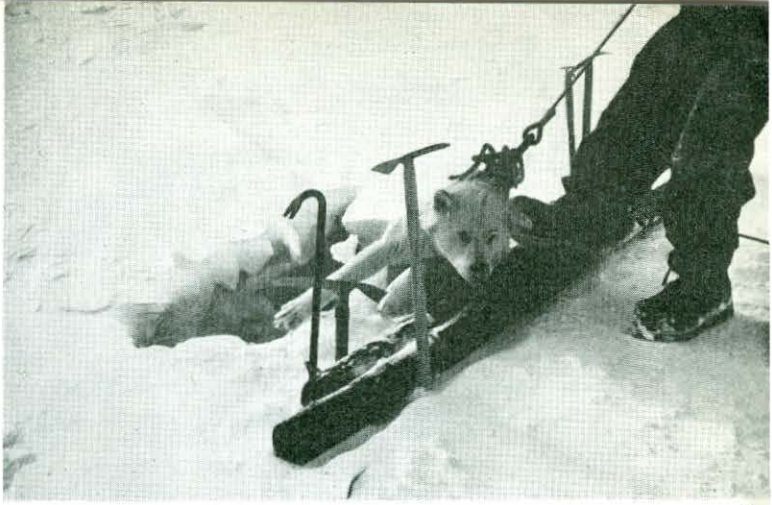
At the beginning of January 1971 the *R.S.A.* left Cape Town on a course due south towards Sanae. The *R.S.A.* was loaded to capacity, for besides the normal food and fuel supplies, material for the construction of an entire new base was also aboard. A new base was to be built by a team from the Public Works Department, some 1,5 km south of the old one, since this old base was near the end of its life span and was already beneath 13 m of accumulated snow.

The southerly journey lasted two weeks during which we were favoured with relatively calm seas. The speed of the *R.S.A.* was not seriously impeded by pack ice either, on this voyage and within only a day of entering the pack the *R.S.A.* sailed into the mirror-calm, pack free water surrounding the ice shelf; a rapid journey yes, but also a memorable one for the silent splendour of the ice bergs, the beauty of the pack ice (photo 1), the schools of whale, the seals and penguins that one sees en route through the Southern Ocean, are all scenes which imprint indelibly on the mind's eye.

For the last half of January the *R.S.A.* moored in Otterbukta (photo 2), one of the natural bays or inlets in the ice front which serve as harbours, and much work was to be done before the ship could leave again. Working twelve-hour shifts around the clock, an easy task with the midnight sun to light the proceedings, the ship was soon unloaded and the P.W.D. team set about the construction of the new base. First the site was levelled, wooden spreaders were laid on the ice, then the



3 *The new Sanae base after it had just become covered with snow.*
(Photo: T. G. Schaefer)



Viking being hauled to safety after falling into a crevasse. 4
(Photo: T. G. Schaefer)

floor, the walls and gradually the new Sanae took shape. However, as the base progressed and as the midnight sun began to set and temperatures became just that little colder, it was realised that the *R.S.A.* would soon have to leave and the five-man field party realised too that they would have to gather their supplies and equipment and move south into the field if they were to reach their destination before winter set in. A period of intense activity followed – packing fuel and food onto sledges, organising personal kit and installing scientific instruments in the new Geophysical Caboose – this being a specially constructed caravan, mounted on a sledge, and serving as a mobile laboratory. A second larger caravan – called the "Living Caboose" – acted as kitchen, dining room, and comfortable sleeping quarters.

Construction of the new base was soon complete (photo 3) and during the third week in February the *R.S.A.* sailed out of the Bukta and headed back to Cape Town. A feeling almost of desolation is experienced when the ship leaves and one realises that you are now entirely on your own. However, there was no time for lingering as there was so much to be done.

Eventually everything was organised and Borga 3 were ready to move. After a grand farewell dinner the five men left their thirteen comrades and moved south, at the end of February, not to return to the main base for almost a year. The five-man field party consisted of two geologists, a mechanic, a male nurse and an electrical engineer – indeed an assortment of occupations. The destination was Borga Base.

The train consisting of a D-4 Caterpillar, two brand new Muskegs, the two cabooses and eight sledges slowly worked its way across the 120 km of ice shelf towards Draaipunt. Just south of Eskimo Ice Rise a delay of a few days was experienced when the one track of the Caterpillar broke through a crevasse and the tractor was left perched precariously on the brink. Fortunately the tractor was extracted from the crevasse without undue difficulty and the journey continued.

On reaching Draaipunt the party realised that the ourney across the ice shelf was complete and they looked eastwards to the first nanutak (this is the peak of a mountain protruding through the ice). However, before reaching the continent proper the hinge area had to be crossed – this is a portion of the route which is only 19 km long, but which crosses the badly crevassed area found where the ice flowing off the continent floats on the sea in the form of the Ice Shelf. Where this ice shelf hinges on the land it is subjected to severe stresses since the floating ice tends to move vertically with the tides whereas the land ice is stationary – the result is intense shearing and cracking or crevassing of the ice in this area. So when crossing this area it is advisable to exercise caution. Viking, a husky dog, who was the field party's much spoilt pet and mascot learnt this, for one day during the two-week crossing of the hinge area, he broke through the thin snow covering a crevasse and plunged 35 m. It was feared that he had been killed or injured, but on descending into the crevasse on ropes tied to the Caterpillar's winch he was found to be amazingly unhurt (photo 4). From that day on he accepted his rescuer as sole master and trusted friend.

Very often when crossing the hinge area, light-weight aluminium bridges would be used to drive the tractors safely over crevasses (photo 5). Eventually the hinge area was crossed and course was set towards the Ahlmannryggen and Borga mountain ranges. It was at this stage (towards the middle of April) that it was realised that Borga Base might never be reached before winter really set in for mechanical difficulties were experienced with the two Muskegs and the resulting loads were too heavy for the Caterpillar to tow alone. Sledges had to be relayed and the result was a net forward speed of 1 km per hour. In view of the fact that Borga Base might never be reached and because over-wintering in just the two cabooses meant a serious lack of living space it was decided to load a Parcoll prefabricated hut, stored unopened in its packing cases at Muskeg Depot by a previous party, onto the sledges with a view to establishing a second semi-permanent base further north of Borga, say in the Ahlmannryggen, should we only manage to reach this area. This was done and when towards the

end of April the Grunehogna nunataks of the Ahlmannryggen had been reached it was decided to erect the hut and over-winter here.

A sheltered site was chosen for the hut in a valley between two large nunataks and after one-and-a-half days the hut stood complete in Grunehogna valley (photo 6). The hut measured 20 by 16 ft (photo 7) and with the two cabooses pulled up at the entrance of the hut the five men were provided with ample living space.

On 12th May the sun finally set and the long night began. For approximately $1\frac{1}{2}$ months the sun would be below the northern horizon. It was not continuously dark however and even on midwinter's day a ruddy, twilight glow was faintly visible on the northern horizon around midday. Also when the full moon shone during the long night, the reflected light from the white ice-scape would give to the surroundings a weird luminescence. Other lights to be seen during winter were the lights of the Aurorae Australis. On occasions these auroral displays would light the entire sky – rays and curtains of light would dance in the sky – changing forms and colours – reds, greens, violets and yellows (photo 12).

It was during winter that the lowest temperatures were recorded – the minimum at Grunehogna being minus 51,5°C.

With the change of seasons viz. during autumn and spring violent storms were experienced and winds in excess of 100 knots would gust through Grunehogna valley, vibrating and buckling the very walls of the hut.

Obviously not much could be done outdoors during the long winter's night and so the five men had to occupy themselves – reading, tapestry and rug sewing, model aircraft building and games such as Gin rummy and Monopoly helped to pass the long wait enjoyably. It was also during the winter's night that detailed plans were made for the post-winter scientific programme.

One peculiar thing which became apparent during winter was that the normal daily routine of a person changed completely and it was found that it seemed most natural to sleep from about 4 a.m. until midday, and indeed these were the hours normally kept.

One of the winter highlights of course was the mid-winter dinner. Mid-winter in Antarctica is an occasion celebrated on an even grander scale than is Christmas. Messages of goodwill and greeting are received from all over the world and the actual mid-winter dinner is celebrated in formal or fancy dress and delicacies such as condensed milk and sherry, which have been saved for months, are brought out of hiding and ravenously consumed.

Eventually in August the sun returned to hang weak and watery on the northern horizon and a severe shortage of fuel for heating and cooking forced three of the five to return to Muskeg Depot for supplies of the essential Polar Diesel.

Upon the return of these men the scientific programme began in earnest – geological mapping and sampling was done over an area of 3 400 sq. km; magnetic and gravity measurements were made at selected sites throughout the Ahlmannryggen area; glaciological studies were performed and ice depths were determined along selected routes, totalling 630 km, using a Radio Echo Sounder. (This is a radar system capable of recording ice depths continuously.)

In midsummer it was found that one tended to work longer hours than would normally be the case, since the midnight sun caused one to lose track of the time. In fact very often the "nighttime" was chosen for work, as at times during the "heat" of the day the snow surfaces were so soft that the vehicles experienced great difficulty in towing any weight at all. Concerning this "heat" of the day, it is interesting to note that very often in summer the temperatures would be around −1°C and in comparison with winter this could be regarded as "heat". In fact on a windless sunny day when temperatures were above −10°C. one would actually become hot in a jersey and would be quite comfortable walking around in a vest and shirt with sleeves rolled up. This is proof of the body's ability to adapt in the space of only one year to such extreme conditions.

The summer season was truly unforgettable, for Antarctica is a continent of supreme beauty and when

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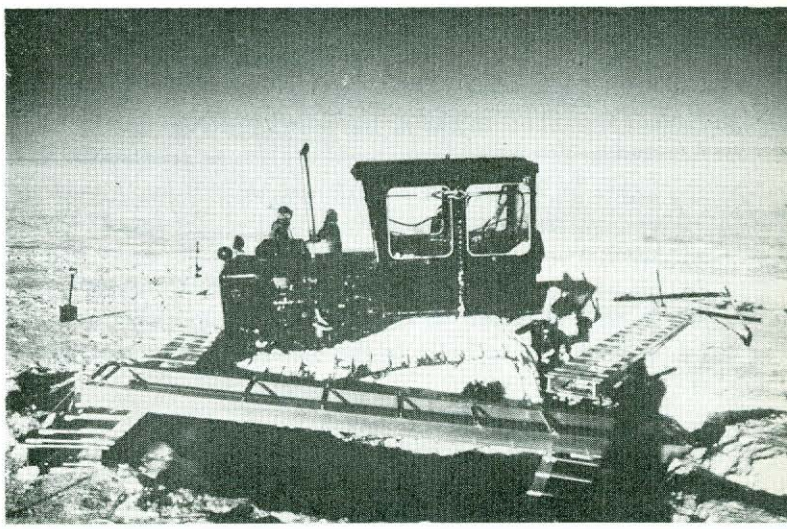

Extracting the Caterpillar from a crevasse using aluminium bridges to support the one track.
(Photo: T. G. Schaefer)

Grunehogna base nestling in the valley between nunataks 1285 and 1390.
(Photo: T. G. Schaefer)

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one's work takes one to lofty snow-covered mountains (photo 11), or into windscoops dug by nature around these mountains and filled with intricately wind-carved forms, or on to vast glaciers – it is always the unknown and fascinating that is being discovered and hence interest in what one is doing never wanes, but is perpetually kindled and rekindled.

What has been said could give the impression that life in Antarctica is all "honey-and-roses" but of course this is not so and some of the hardships and difficulties should be mentioned – there are the technical problems, for example, engines and electronic equipment don't always function at −30°C as they would at normal temperatures. A typical example of this is the motor-generator set which could only be started after a few hours effort, and then with blow torches heating the cylinder head, at temperatures below about −25°C. There are the problems of the terrain that has to be negotiated – the hazards of crevassed areas have already been mentioned (photo 15). Nor will the day be forgotten when the Caterpillar was travelling slowly up a steep rise of hard, blue ice – so hard in fact that even the steel tracks of this 8 ton vehicle could not make a mark in it – traction was lost and the vehicle skated wildly down the rise for a few hundred metres until it came to a stop in the soft snow at the foot of the rise, where the driver emerged pale and trembling. There are also the problems of physical discomfort when forced to work outdoors in bad weather. Anyone who has experienced serious frostbite and has felt the pain when life returns to the frozen flesh will understand this clearly. These are but some of the problems of the Antarctic way of life.

A question frequently asked is: "What plant and animal life is found in the interior of the continent?" Concerning animals, the answer is that no land animals are found on the continent; although there is an abundance of bird life, and during the summer many are the occasions when petrels, skuas and other bird types swarm around a campsite. Plant life in Western Dronning Maud Land is limited to lichens and mosses which were found growing on the rocks of the nunataks – particularly the more northern nunataks with their slightly milder climates.

However, the year had passed and the *R.S.A.* was once more on its way back to Sanae, bringing the new team and fresh supplies and it was with a heavy heart that the five turned northwards again at the beginning of January, 1972. It was strange returning to Sanae after an abscence of nearly a year for the new base that had last been seen standing on the ice surface was already covered to its roof with accumulated snow and familiar faces were hardly recognisable behind the dense growth of a year's beard. Nevertheless a grand reunion was had upon arrival back at base. After a few weeks during which the new team were instructed in their work and assisted in finding their feet on an alien continent, it was time to leave Antarctica and sail back to Cape Town, back to the life and people one had left so long before. The prospect of being with one's family again is a very happy one, but when the *R.S.A.* leaves the Bukta and sails across the mirror-calm sea between the silent magnificence of the ice bergs it is a sad eye that casts one last, longing, lingering look behind at the continent which has so long been your home and which has become so intimate a part of you.

The Parcoll prefabricated hut, 20 × 16 ft.
(Photo: T. G. Schaefer)

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