



# ANTARKTIESE BULLETIN

JANUARY, 1964 — No. 1 — JANUARIE 1964



Published by the South African Antarctic Association  
16, Anderson Street, Brooklyn, PRETORIA

Uitgegee deur die Suid-Afrikaanse Antarktiese Vereniging  
Andersonstraat 16, Brooklyn, PRETORIA

Patron/Beskermheer: Prof. S. P. Jackson, M.A., D.I.C., Ph.D.

Editor/Redakteur: J. J. Taljaard

## Redaksioneel—Editorial

### BAKENS OP DIE PAD

Die eerste daadwerklike stap op die pad van deelname aan waarnemings en navorsing deur Suid-Afrika in die gebiede suid van die Afrikaanse vasteland is in April 1942 gedoen toe die weerstasie op Tristan da Cunha deur die Weerkundige Afdeling van die Suid-Afrikaanse Lugmag gestig is. Daarna het die oornam van Marioneiland van Brittanje en die stigting van die weerstasie aldaar in Januarie 1948 gevolg. In 1954/55 het die entoesiasme hoog gevlam vir die oprigting van nog 'n weerstasie verder suidwaarts op Bouveteiland, maar hierdie onherbergsame rots- en ysmassa was eens te veel vir die gesaghebbendes wat die vaart van die S.A.S. *Transvaal* in Januarie 1955 onderneem het, sodat die stigting van 'n stasie daar tot vandag toe nog nie verder as belofte gekom het nie. Hopelik sal daar eersdaags meer van die uitvoerbaarheid van so 'n onderneming gehoor word.

Die grond vir die stuur van 'n Suid-Afrikaanse ekspedisie na Antarktika is voorberei deur deelname aan die Trans-Antarktiese Ekspedisie van 1956/58 en die stuur van twee lede van die Weerburo vir 'n jaar (1959) na die Britse basis by Halley Bay. Die stigting van SCAR (die Spesiale Komitee vir Antarktiese Navorsing) in 1958, met insluiting van Suid-Afrika as een van die twaalf lede daarvan, het die deurslag gegee vir Suid-Afrika se oornam van die

Noorweegse stasie, "Norway Station", in Januarie 1960.

Met hierdie stand van deelname aan Antarktiese bedrywighede en met die groeiende aantal manne wat deur persoonlike wedervaring aan die eilande en aan Antarktika gebind is, is dit goed gedink om 'n vereniging te stig waardeur die belangstelling versterk en verder uitgebou kan word. Daar is ook reeds baie belangstellendes afgesien van diegene wat werklik op die eilande of Antarktika vertoef het, of wat deur amptelike of ander bedrywighede daaraan verbonde is. Die Suid-Afrikaanse pogings en prestasies kan slegs onderskraag word deur die daarstelling van media buite die amptelike kringe om ondersteuning en belangstelling aan te moedig.

Die Suid-Afrikaanse Antarktiese Vereniging is in Pretoria op 16 September 1961 gestig en die ledetal het intussen aangegroei tot 130 in Desember 1963. Ons hoop natuurlik dat die ledetal verder sal groei, maar dit word goed beseft dat dit nie in die eerste plek getalle is wat saak maak nie maar wel daadwerklike belangstelling en ondersteuning.

Met hierdie eerste uitgawe van *Antarktiese Bulletin* word nou tot die verdere nodige stap oorgegaan om 'n eie tydskrif vir die Vereniging te skep.

### "ANTARKTIESE BULLETIN" MAKES ITS DEBUT

For the past two years the agenda and minutes of the meetings of the Association, as well as reports and summaries of interesting lectures and speeches delivered before the Association, were issued to members in rhoneoed form. This procedure is not as inexpensive as it would seem at a first glance and neither is it always effective. It was therefore a most welcome relief when BP Southern Africa (Pty.) Ltd., generously consented to print a bulletin free of charge for the Association, with no more acknowledgement for the Company than the display of its trade mark on the front page. Unfortunately the *Antarktiese Bulletin* will not entirely replace rhoneoed notices of meetings, agendas and certain parts of the minutes, but apart from its neat printed form it will considerably broaden the scope and nature of the information that can be placed at the disposal of the members of the Association, particularly those at centres far from Pretoria who cannot attend the meetings of the only branch which has been established so far.

*Antarktiese Bulletin* is intended to serve as a medium for the dissemination of news about the South African stations in the Antarctic and sub-Antarctic, the activities, achievements and decisions of the Association, as well as about other activities in South Africa concerning the Antarctic. It will form a medium for interesting material from the lectures and addresses delivered before the Association, as well as for popular and semi-popular articles on

any aspect of activities or research carried out at South African, or other, Antarctic stations.

It is the intention to issue *Antarktiese Bulletin* at least once every second month, but this will depend on the amount and quality of the contributions which will be forthcoming. Each number will consist of four pages, or eight pages in exceptional cases.

It will be obvious from this first number that *Antarktiese Bulletin* will be bilingual publication in the sense that both Afrikaans and English contributions will be accepted and published. If English contributions preponderate it will be because news items and articles of more than "local" interest will be intelligible to overseas readers only if the medium is English, and *Antarktiese Bulletin* will certainly make its way overseas, although in limited numbers to start with.

The selection of a name for the bulletin caused many headaches, because adherence to the principle of bilingualism implies either a double-barrelled name or one of which the spelling is similar in the two languages. No palatable name of this kind could be found and so it was finally decided to adopt an appropriate Afrikaans name only which would simplify the task of overburdened librarians.

So, off we go with . . . **ANTARKTIESE BULLETIN.**



## Graham Land and the activities of the British Antarctic Survey

Dr. R. J. Adie, Senior Lecturer in Geology at The University, Birmingham and supervisor of the branch of the British Antarctic Survey dealing with geology, glaciology and solid earth geophysics, addressed the South African Antarctic Association in Pretoria on 30th August, 1963. His talk dealt with the geography, scenery, rocks, ice, animals, birds and plants of Graham Land and adjacent Antarctic Islands, but he also discussed the British bases in the region, the work that is being done and in particular the training of men who go down there, as well as the working up and publication of the research.

Dr. Adie introduced his talk by telling about an address which he gave before a group of ladies in Natal after his return in 1950 from spending several years in Antarctica. The lady in the chair introduced him by saying, *inter alia*, that he had just spent several years working in the Falkland Islands just off the west coast of Scotland! Of course he then had to produce a map of Antarctica and teach the good ladies some geography!

Dr. Adie first explained the territorial claims of the different nations in Antarctica before the Antarctic Treaty was signed in 1959. He indicated that the important peninsula south of South America was claimed by the three nations, viz. Chile, Argentina and the United Kingdom and that the overlapping claims also included other parts of this sector of Antarctica. The Chileans called the peninsula Tierra O'Higgins (after their liberator), the Argentinians called it Peninsula Antartida, while the British called it Graham Land, but to cap it all the Americans called it Palmer Peninsula! This was all very confusing but in spite of the various names and claims, scientific work and co-operation progressed fairly well, particularly since the signing of the Treaty.

After explaining the various geographical features of the area Dr. Adie devoted the main part of his talk to the showing of slides illustrating the scenery, the animal life and the scientifically interesting aspects of the work which is being done by the British Antarctic Survey in the area.

The west coast of Graham Land is very much fiorded and similar to the coast of Norway. During the summer months the west coast is usually accessible from the sea, but the east coast is bounded by a broad ice shelf rising about 100 feet above sea level. In addition the Weddell Sea to the east of the Peninsula is filled with heavy pack ice practically all the year round. The pack ice slowly moves in a clockwise vortex which brings the ice to the South Orkney Islands and the northern tip of the Peninsula and sometimes causes great difficulties for relief parties to reach the bases.

The Graham Land Peninsula is almost dead flat on top at a level of about 6,000 feet, in contrast to the very irregular topography along the west coast. Further to the south the plateau rises to about 7,500 feet.

The British stations which are operating at present in the area are Signy Island (South Orkneys), Hope Bay, View Point, Argentine Islands, Adelaide Island, Stonington Island and Fossil Bluff on Alexander Island. The latter is the most southerly situated base. All bases are on the accessible west coast of the Peninsula. Several other bases were formerly maintained until the work (mainly topographical and geological surveying) was finished. Argentine Islands was, and still is, primarily a meteorological station. Base T on Anvers Island is the base from which the aircraft operate for surveying the east coast of the Peninsula and down as far south as Fossil Bluff.

It is the intention of the British Antarctic Survey to map in a systematic way the whole of the Peninsula, both topographically and geologically. Topographical mapping precedes geological mapping and at present this is being followed up by geophysical surveys, viz. gravity and magnetic surveys, starting in the north and proceeding southwards.

From the important IGY base, Halley Bay, situated at 78°S on the east side of the Weddell Sea, the Antarctic Survey is now also starting to survey the interior of Antarctica in the region of the Tottan Mountains.

Dr. Adie proceeded to discuss the various stations and areas in greater detail, starting with South Georgia, which is considered to be a sub-Antarctic island and not part of the Antarctic continent. He showed beautiful colour slides of this mountainous, strongly fiorded island with its many glaciers. There is a whaling factory and a meteorological station at Grytviken on the north side of the Island. There is even a magistrate and a policeman stationed there

to maintain law and order when the many thousands of whalers visit Grytviken in summer. The whaling companies decided to close their shore-based factories in the Antarctic recently because it is becoming uneconomical due to decreasing whale stocks in the southern oceans.

A typical Antarctic Survey base is situated on Signy Island which is one of the South Orkneys Group. All the buildings are completely prefabricated and assembled on the spot. To combat the fire hazard the former wooden buildings at the British Antarctic bases are being replaced by buildings made of a plastic material which does not burn but only chars when exposed to a flame. A huge biological laboratory has been constructed of this material and it is being erected at Signy Island. There are bogs on Signy Island composed of mosses and lichens several feet thick and the stratigraphic succession of these deposits are being studied through examination of the pollen grains which they contain. On South Georgia there are also peat bogs up to 16 feet deep containing beetles throughout their depth, the species being the same as are found living there today.

At Signy Island, as well as at other British Antarctic bases, the cultivation of vegetables in greenhouses has been very successful. At Halley Bay, where the huts are completely buried under the snow, a crop of daffodils were grown successfully, but unfortunately a cat ate them all off!

Proceeding to Deception Island (in the South Shetland Group) which is one of the most interesting of the islands, Dr. Adie said that it was used as a base by German raiders during the last War and that they virtually exterminated the British and Norwegian whaling fleets in the Antarctic. The Island actually consists of four volcanic cones, although it superficially looks like a single collapsed cone today into which the sea has broken at one end, flooding the crater and so forming a huge sheltered bay. There are crater lakes with lukewarm water in which one can swim. There are many other interesting vulcanological features on the Island, among them the many steam jets around Whaler's Bay which are flooded over by sea water containing krill and small fish as the tide comes in. When the tide goes out "steamed fish, but no chips" are left behind and hordes of Cape pigeons swarm in to devour the cooked meal. This is perhaps the only place in the Antarctic where man could survive—and has survived—without fuel.

At the northern end of the Peninsula the Swedish South Polar Expedition of 1901-1903 built a hut of stones and flung a tarpaulin across it. The stone walls are still there today. The Swedes lived in this stone hut for 8 months and all they had to keep them warm was a blubber stove. At present the nearby British and Argentine bases have all kinds of luxuries, even air conditioning at the Argentine base. It is interesting to find that Argentina maintains two separate buildings here, one for the military personnel and one for the scientists. The military hut is considerably more luxurious than the civilian hut and small wonder, therefore, that the military hut mysteriously caught fire one night.

The scenery along the west coast of Graham Land is magnificent, with many short glaciers coming down from the plateau and merging into the margin of what was formerly an ice shelf. The glaciers are "tumbled" at their mouths, i.e. they form a step, indicating that the ice sheet over the sea broke away when the climate ameliorated many years ago. This process can be seen in action today in George Vth Sound further south, where all the glaciers north of the Sound are tumbled and all those to its south are normal glaciers along which you can walk straight up.

There are many inaccessible rock outcrops along the west coast and on the islands surrounded by vertical ice cliffs hundreds of feet high. Helicopters have proved very handy to reach these outcrops for doing the necessary geological inspection, measurement and sample collecting.

Argentine Islands just off the middle part of the west coast of the Peninsula is the main meteorological and geophysical base in the area, where all kinds of surface and upper air meteorological observations are made, as well as magnetic and seismographic recordings, etc.

In addition to the main "permanent" stations, there are also smaller bases which are occupied for a year or two and then abandoned when their purpose has been served. Furthermore, there are small emergency bases at intervals along the coast and these huts can house four men for four or five months.



Dr. Adie then showed a series of fine pictures of sea ice and icebergs, particularly the very heavy pack ice which forms in the bays and fiords and builds up to great thickness before they break out after a few years, or are piled up into ridges and chaotic masses by wind and water movements. Sea ice forms a great hazard to expedition ships trying to reach the west coast bases. A programme of observation of sea ice is maintained at all the British bases and the data are analysed at Cambridge. From these studies it might become possible to predict whether certain bases will be accessible from the sea in particular years, or otherwise.

The vicinity of the famous base at Stonington Island in Marguerite Bay is not only beautiful, but there is much of interest in its vicinity for both geologists and glaciologists. For instance in one section the basement complex of paleozoic granites can be seen overlain with Jurassic rocks and this in turn is capped by more recent volcanic rocks, while all these rocks are intruded by Andean igneous rocks. Glacial valleys in this vicinity and further south are found well above sea level and this indicates that deglaciation to the tune of about 500 feet has occurred in the area.

The British Antarctic Survey uses Bell and Westland Whirlwind helicopters and Greenland and Nansen sledges. Dogs are still being used extensively by the British while on the other side of Antarctica the Americans have become completely mechanised and use motor toboggans instead of sledges and dog teams. Dog training starts soon after mid-winter and the form which the training takes is sealing. Sealing is a horrible but compulsory chore since the dogs have to be fed on seal meat. Seals are becoming very scarce in Graham Land and sometimes elephant seals have to be killed in South Georgia and transported to the Graham Land bases. A lot is being done on the physiology of the huskie dogs and among other things it was discovered that the dogs make their own Vitamin C, so that they never get scurvy.

As regards the animal life Graham Land is probably by far the most interesting in all of Antarctica. It consists mainly of a marine and bird life. There are many crab-eaters seals off the west coasts of Graham Land. The reproductive cycles of the crab-eater and Weddell seals have been extensively studied, as well as those of the elephant seals. The latter are hair seals but fur seals are found in South Georgia.

The elephant seals were first discovered by Captain Cook. They can become 20 feet long and weigh up to 10 tons. Their habits have been studied exhaustively. In spring when the cows come ashore to have their cubs they form little harems with one master bull controlling a section of the beach. The defeated bulls are found swimming about in the sea just off the shore.

There is a very big Adelie penguin rookery on the south-west coast of Graham Land and various others in the northern parts and on the islands. The Adelie penguin is 15 to 18 inches high and it is a very cheeky little bird. One cannot distinguish between the males and the females. What happens is that one penguin would pick up a pebble and put it down in front of another one and if the other one picks the pebble up then, right, they get together and build a nest. They would even put down pebbles in front of human beings, causing quite an embarrassing situation. A big banding programme has been carried out at Hope Bay and there it was discovered that the same birds come back to the same nests every year and the same pairs remate until one of them dies. Maps have been made of all these penguin rookeries. The young penguins have a coat of down which would get waterlogged if they venture into the water. So they stay on land until their swimming feathers have developed and the adults feed them until they are ready to swim.

Other species of penguins found in the area are the Macaronies and the Chinstraps. They all have their own private rookeries and are kicked out if they venture into one another's rookeries. Only two rookeries of the Chinstrap penguins have so far been discovered in the Graham Land area. Then there are the Emperor penguins, magnificent birds standing about 3 feet 6 inches high. Dr. Adie had the opportunity of observing the habits of these birds on the Dion Islands in 1948. He said that the female "apparently lays the egg" but immediately afterwards she hands it over to any male bird in her vicinity. He takes the egg between his feet and lets down a flap of abdominal skin over it, after which he keeps it covered for as long as possible, hobbling about on his heels. If he gets tired of holding the egg he drops it on the ice, but it is immediately picked up by another male and so freezing is prevented. So this goes on for two long months and one finds that although a penguin chick has only one mother it might actually have 25 or 30 fathers. Once the chick is hatched it sits on the feet of an adult bird and is covered up again. When the female returns from feeding in the sea the chick which she adopts is not necessarily the one which hatched from the egg which she originally laid. She takes on any chick.

The Sheath bills are the only land birds in the Antarctic.

The shag birds, or cormorants, return every year to exactly the same nests and many nests have grown to enormous heights—some of them three to four feet high. The age of these nests are being determined at present by radio-carbon dating. The cormorant chicks eat about three times their own weight in food every day. An interesting observation on Argentine Islands is that penguin feathers are found beneath some of the small ice sheets, indicating the existence of rookeries before these ice caps formed. Age determination of the feathers would throw light on the problem of the departure of the ice cap off the west coast of Graham Land.

The Dominion gull is one of the tallest birds in Graham Land. Hordes of them are found at every base and they eat up every possible thing that is left lying about. The Giant petrel builds a magnificent nest of little stones and if you go to near to it, it squirts a very smelly oily substance straight at you, never missing a shot.

Other birds found in Graham Land are the South American tern (its nest is invariably built next to a piece of Antarctic grass) the Dove prion and the Wilson's petrel, but of all the Antarctic birds the rarest, the most beautiful and the one which occurs most widely throughout the Antarctic is the Snow petrel. It was discovered that the Snow petrel nests in deep tunnels on very high cliffs.

*The last section of Dr. Adie's talk and his answers to some of the questions from the audience should be of particular importance to those who organize and control our own expeditions to Antarctica and the relief parties to Marion and Gough Islands. This is the crystallization of the experience of the British Antarctic Survey and of men who have been active for many years in polar research, some of them since the early years of this century. Useful hints may be reaped for our own work from their procedures. Therefore Dr. Adie's words are quoted in full below:*

"Having shown you the sort of work we are doing in the Antarctic I want to discuss generally why we are doing this work. Each year twelve countries doing Antarctic research send down hordes of people, many of them inexperienced, some experienced, some with programmes of work and others with no programmes of work. Some go because they like to go to the Antarctic and to be classified as Antarctic explorers.

"Wherever does this lead us? Surely there must be some economic approach to this whole business of Antarctic research. I have given a lot of thought to this because I have been working away at this for quite a long time now and I believe quite firmly that the way of achieving results in the Antarctic is first of all to choose the professional scientists that know their job already, preferably young people between 25 and 35 who have already had considerable experience in their own field, so that one knows that those people are professionally sound, both academically and in the field. If one is able to encourage that kind of person to go to the Antarctic, then one is likely to get tremendously good results.

"One must look at it from the other point of view, too, that it is very nice to be an Antarctic explorer for a few years but when you get to the age of 40 you cannot be an Antarctic explorer any more. Then you have to rely for your livelihood on your professional ability and your professional training. So here is a way in which it is possible to use good people for a short period of time after which they can revert to their particular field of science.

"Now, the second thing is this, have you ever thought how much it costs to send one single man to the Antarctic, irrespective of whether he does any scientific research or not? We know that it costs £25,000 a year for one man. So this means that if one is going to control Antarctic expeditions in a businesslike way, then one must get some return for this £25,000. If one puts a man into the field and he does the work with his field backing and then returns to his own country and says: 'Thank you very much, I have had some very nice field experience', after which he goes off, then you have lost £25,000. The job is only complete when it is written up and published!

"I think that many more countries have got to think along these lines. We are thinking very seriously in this way. The United Kingdom at the moment has no money to burn. We operate literally on a shoe-string. When one comes to compare the results produced by us in this way, say with those of the Americans and Russians—and we have done such comparisons—it is found that the Americans spend about forty times as much each year than we do on our Antarctic expeditions and they use perhaps about a hundred times more men, yet we find strangely enough that the United Kingdom is producing five times as much work! This is so.

"I believe quite firmly that it does not matter what field of Antarctic science one is operating in, one has got to produce



the best first time. I know from my own experience of working in Graham Land that there are many areas that I went to as long ago as 1946 to which nobody has gone back again and nobody is likely to go back there ever again. So we rely all the time on the completed field observations of one person. Many of us in science write down only part of our observations in a field notebook. The rest we keep in our heads and we hope that the memory will survive long enough for the whole work to be written up. This is not the correct approach. The correct approach is to write everything in the field notebook. I have now had four separate instances of individuals who have done superb fieldwork but they had not written it down completely. One fell off Mont Blanc the other day and got killed and his complete research is written off. Now this is very tragic.

"To go on to the other side a bit: How is one going to encourage these people to stay on after they have done their fieldwork? After having spent £25,000 for one year's fieldwork, a man is paid £600 a year for writing it up when he returns to his own country. I believe this is not a sufficient incentive. I think that one has got to do better than this. This is just not an economic proposition. This is the position we are in. I do not know what your position is, but our position is being rectified very quickly and smartly.

"As far as the training of personnel is concerned we have now come to the conclusion that to send people to the Antarctic with no training in Antarctic science is a waste of money. We have to learn that sometime sooner or later but we are beginning to believe that it is best to take a man on and even keep him at a paltry salary of £600 for the first year and train him thoroughly in all aspects, not only of his own science, but also on how to operate in the field, because if you cannot operate in the field you die and that is just as straight forward as that. Having trained a man for one year we send him down to the Antarctic for two summers and a winter and then bring him back to write up his results.

"How are we organized in the actual writing up of all this work? The British Antarctic Survey has fought tooth and nail with the Government over this very problem and at last we think that we have reached a fairly satisfactory solution. Under our main organisation we have now established three main branches, one which deals with geology, glaciology and geophysics, situated in the Geology Department of the University of Birmingham, one which deals with biology generally, which is at Queen Mary College in London and one which deals with static geophysics which is in the Natural Philosophy Department at Edinburgh University.

"In addition to these three main groups, which are under the direct control of an expert scientist, we have other organisations. For instance, who does our topographic mapping? The Director of Overseas Surveys, which is a Government department. Who deals with our meteorological results? Another Government department, the Meteorological Office. Who deals with the ornithological results? The Institute of Ornithology at Oxford, etc. So we have two main aspects to this, viz. the Government department (the red tape aspect) and the university aspect.

"We look at this from several points of view and we feel that if a man has had the initiative to train himself in his own science, to go to the Antarctic and spend two years of his life there working on a subject to increase the knowledge of mankind in that subject, then he is entitled to something a little bit more out of that. Our university set-up is the thing that gives him something for himself because a man can come back to England, say to the University of Birmingham, and not only work up his results for the Survey but also for a thesis for a higher degree. He can be employed by the Survey and be a research student in the University at the same time. The only trouble is that as a research student he has to work harder than otherwise. However, it all boils down to the same thing and leads, or should lead, ultimately to the publication of the results.

"Sometime sooner or later all these expeditions are going to come to end. They are not going to go on interminably for another 30 to 40 years. The work will be finished and if the topographic maps are not made and the monographs on the glaciological, geological work and other scientific subjects are not written, what will there be to show for all the money that has been spent? At one stage we did a calculation of the cost of each printed word in our publications and the result was quite staggering. They cost £5 each. So the real point here is that all of this work which is being done in the Antarctic should be published. Then it is made available to everybody for criticism, whether it be good or bad. It also becomes available to the

people who are out of the way, people like the Russians, who do not often bother to read English publications, the Argentinians and Chileans who still do not bother to read publications.

"Once something is published then one must make sure that all the people in that field, whether they are zoologists, botanists or geologists, get those publications. One must make sure to distribute them to the right reading audience and I think that perhaps the greatest thing of all in Antarctic work is that we believe that everybody in the country should know what is going on. They must be familiar with it. When I go anywhere and mention the British Antarctic Survey they say: "Oh yes, that is the set-up run by Sir Vivian Fuchs". They know all about it and we have gone as far as to be able to convince the B.B.C. to run specific programmes so as to inform people both on sound and television. We show films on television and it is this publicity which is extremely good for the Organization. The only thing you must beware of is that it is the good things that you publicise and not the bad ones.

"I have talked a lot about so many things and I think it is definitely time I stopped. I am sorry but I do not think it is practicable for me to comment on the South African Antarctic Expedition. I think that a lot more should be published so that people can become much more aware of what you are doing."

Question (Mr. J. J. la Grange): "Dr. Adie, you said that £600 a year is being spent on preparing a person to go down to the Antarctic. I will be pleased if you could give us a bit more indication of what these people go through. I personally believe that sometimes an expedition to Antarctica is more of a psychological ordeal than a scientific expedition. I wonder if you could embroider a bit more on the preparation of people before they go to the Antarctic?"

Answer: "We would like to write a book on these matters. Well, the first thing I do (and I know this particularly about geology, because I look after the geologists) is to teach them all the things they should not do. The European Universities teach only Northern Hemisphere geology and if you mention a word like Dwyka Tillite they look at you as if you have said something particularly nasty. The universities teach you economic geology, etc., and though people are taught all these things none of them know, for instance, how to use a plane table. You have to teach them complete survey from start to finish, so that they at least have a map to put the geology on. The second thing is that we make them read every single book that we can lay our hands on which has been published on the Antarctic, going from early books like *Siege of the South Pole* right the way through to the very latest book, say *The White Road*. In about three months' time a book will be published called *Antarctic Research*. It will cost quite a lot, unfortunately, because it will have many coloured plates in it. It has in it chapters dealing with every single aspect of Antarctic work. There is a complete chapter on glaciology. There are two chapters on meteorology (one on weather and one on climatology). There are chapters on oceanography, whales and whaling, seals and sealing, birds, etc. With the references at the end of each chapter we think that this work will form a very good basis for anybody going to the Antarctic. I believe that the New Zealanders are going to write a complementary volume to this, dealing with East Antarctica.

"Then going to the next stage, after making them read all this they go through all the on-file reports on work that has not been written up for publication. We make them go through all the collections so that they can pick up a rock and identify it. They look at all the thin sections as well, so that they can also see the rock in thin section, and so on right the way through till we put them in the field. During this time we tell them how to camp, how to light a primus, how to light a candle, how to splice ropes, how to mend a tent, etc., etc. You see we have a much greater problem than you have, because every South African knows how to put up a tent and how to splice ropes. But many people in Europe do not know one part of a tent from another. They do not know one end of a dog from another! This is very important, because in the part of Antarctica where we are working it is always essential to use dogs for much of the work. We are using Eliassen motor toboggans on the east coast of Graham Land. We put them in an aeroplane and fly them out there with the geologists, glaciologists and geophysicists, who do not trail over the plateau as we used to do. This is the sort of programme that wants to be lined up and, of course, some time during the course of the year of training we have a conference where all the people, who go down to the Antarctic, come together and have quick lectures on what is the meaning of ionospheric research, of meteorological research and so on. We have many technical films which we show to these people. We have films on dog-driving, on how to put up a tent, how to do this and how to do that. These things are all crammed into that four-



day course. We have a lot of people with an interesting background, people like Sir Raymond Priestley who was with Scott and Shackleton. He comes and says what it was like in 1910 compared with what it is like today with an American expedition. These are things that matter.

"To answer one other question of yours, i.e. the psychological approach. Do you know what I believe the answer is? If you keep a man employed all the day and he has no time to think you will not have any psychological problems. We never yet had a geologist breaking down while lots of other people break down, the people who have not had any work to do."

Question (Prof. S. P. Jackson): "Would you like to tell us whether you do this training at the different university centres that deal with the different specialities, or at one centre?"

Answer: "No, we do it at each individual centre."

Question: "So they send you the geologists and the biologists go somewhere else?"

Answer: "Yes. I go out to pick the geologists I want."

Question: "Now how do you set about a job like that? What sort of people do you hope to get? Do you take them from the universities or what do you do?"

Answer: "Yes, the way we have been doing this—and this applies to all the sciences dealt with by the Survey—we have a personnel officer who makes it his job to go round to every university and lecture to people who might be interested in the Survey. He takes down names and addresses of people who might be interested and then he assesses what these people are like from the personality angle. Eventually we write round to the heads of Departments to say that there will be, say, three vacancies for geologists and do you have anybody who might be interested? We do not advertise the posts in the newspapers any more. All these posts are filled literally by personal contact. The only people that we attempt to get by way of advertisements nowadays are wireless operators and diesel mechanics."

Question (D. C. Neethling): "Could Dr. Adie tell us what importance is attached to air support for a successful Antarctic geological programme and whether the Americans using mechanised toboggans instead of dog teams are as successful as they claim to be?"

Answer: "It depends on what sort of country you are working in. If you work in East Antarctica you can use Eliassen toboggans

until you are blue in the face, but if you work in Graham Land you cannot use them up glaciers and places like that because that will be the quickest way of killing yourself. The Eliassen motor toboggan is a very heavy thing, it has a very small bearing surface and it will easily break through the crusts of crevasses. I believe that there is a great deal in air support for geological work in Antarctica, because if I recall the time when I had to flog 600 miles before I even started working, often pushing sledges at the same time, I was a little bit too tired to do geology. It is much easier to fly people 600 miles and say to them, that is your area and there are your photographs, get going and do it. The Americans have also been very successful in the central mountains, the Eight Coast and in various other places. They just flew the men in and put them down."

Question (Dr. Taljaard): "Would it not be profitable for the purpose of topographical and geological surveying if the British Antarctic Survey followed the same procedure as the Americans in Victoria Land during their Projects Topo North, Topo South, Topo East and Topo West, in which a grid of primary beacons were fixed by means of tellurometers and by using helicopters to jump from one peak to another?"

Answer: "Well, actually we were the first people to have started using tellurometers in the Antarctic. We have been using this very same technique. Recently we closed a triangulation system over about 800 kilometres and it closed to two metres with tellurometers. Of course we are very fortunate in having air photographs (vertical and oblique) covering virtually the whole of the Graham Land Peninsula. The real hold-up comes in getting the surveyors to plot the data with their machines."

Dr. Adie answered further questions about the surveying and publication of the topographical and geological maps of Graham Land and also a question about the published results of medical research on dogs, particularly the Vitamin C aspect which he mentioned.

In proposing the vote of thanks, Dr. F. C. Truter, former Director of the Geological Survey, particularly stressed that South Africans interested in Antarctic research had already repeatedly indicated to the authorities the need for thorough preparatory training of scientists going to Antarctica and that they had also pointed out the necessity of opportunities for the returning men to work up their results to a stage ready for publication.

## Wat die Vereniging Reeds Bereik het

Twee jaar en vyf maande het verloop sedert die Vereniging op 16 September 1961 gestig is en die vraag van ondersteuners, sowel as van moontlike kritiese buitestaanders, sal wees: Wat het die Vereniging tot sy krediet bereik?

In die konstitusie staan die doelwitte van die Vereniging as volg aangeteken:

- Om belangstelling in Antarktiese ontdekking, ontwikkeling en navorsing aan te moedig en te handhaaf.
- Om byeenkomste te reël waar kennis van Antarktika voorgelê, uitgeruil en versprei kan word.
- Om saam te werk met ander instellings, amptelik of nie-amptelik, wat soortgelyke doelstellings het.
- Om fondse in te samel, te administreer en te voorsien vir die uitvoering van die doelwitte van die Vereniging.
- Om takke van die Vereniging te stig in die Republiek van Suid-Afrika en in Suidwes-Afrika.
- Om bulletins te publiseer, of om ooreenkomste te tref met bestaande tydskrifte of publikasies vir die verspreiding van inligting in belang van die Vereniging.

Die Vereniging het in die 29 maande van sy bestaan reeds 22 byeenkomste gehad. Dit sluit in die stigtingsvergadering, bespreking van die konstitusie, twee algemene jaarvergaderings, die eerste jaarlikse dinee en 'n spesiale funksie om Sir Vivian Fuchs te ontmoet. Die orige 16 vergaderings is gewy aan 'n verskeidenheid van onderwerpe wat wissel van skyfie-vertonings van ons Antarktiese- en eilandstasies tot semi-wetenskaplike oorsigte, soos die van dr. J. J. Taljaard oor Antarktiese weerkunde, gletserkunde en

geografiese ontdekking en die van mnr. D. C. Neethling oor geologiese navorsing in Antarktika. Rolfilms van ekspedisies na Marion-eiland, SANAE en Maudheim is vertoon. Oorsigte van die waarnemings en navorsing by SANAE is voorgedra. Interessante ou koeie is uit die sloot gegrawe deur mev. P. Crawford, dogter van Louis Bernacchi wat lid van Borchgrevink se Southern Cross-ekspedisie van 1899 en Scott se Discovery-ekspedisie van 1902 was. 'n Uitstaande lesing oor Tristan da Cunha in die ou dae en die vulkaan wat twee jaar gelde daar uitgebars het is deur mnr. A. B. Crawford gegee. Die geleentheid van die sewende SCAR-vergadering in Kaapstad in September 1963 is uitgebuut om oorsese besoekers vir voordragte in te trek en drr. A. J. Adie, geoloog van Birmingham-universiteit en J. de Q. Robin, direkteur van die "Scott Polar Institute," Cambridge, het aan die beurt gekom. Sir Vivian Fuchs is op 'n informele geleentheid in Pretoria aan lede en belangstellendes voorgestel.

Opsommings van byna alle voordragte is in afgerolde vorm aan lede beskikbaar gestel en pas hierbo vind u dr. Adie se voordrag. Dr. Robin se voordrag sal in 'n latere uitgawe opgesom word.

Getroue lede en besoekers sal ongetwyfeld die bewering kan onderskryf dat die voordragte en vertonings tot dusver nie oneer gedoen het aan punte (a) en (b) van die doelstellings van ons Vereniging nie. Dat populêre materiaal dusver oorweeg het hoef nie skaamte te verwek nie want soos die wetenskaplikegeoriënteerde en geïnteresseerde ledetal sal aangroei met verloop van jare, so sal die ideaal van 'n "learned society", wat prof. S. P. Jackson by geleentheid van die eerste jaarlikse dinee van die Vereniging aan ons voorgehou het, ook verwesenlik word.

Afgesien van voordragte, was veral die afgelope jaar ook propvol van ondernemings om die Vereniging gestalte en status te gee, naamlik:



1. 'n Beskermheer is aangestel in die persoon van prof. S. P. Jackson.
2. Drie Antarktiese veterane (twee daarvan huidige Suid-Afrikaners) het ereldmaatskap van die Vereniging aanvaar, naamlik dr. Harvey Pirie van Johannesburg (lid van die Scotia-ekspedisie van 1903/05), prof. R. W. James van Kaapstad (lid van Shackleton se 1914/16 Endurance-ekspedisie) en Sir Vivian Fuchs (leier van die Britse Statebond se Trans-Antarktiese Ekspedisie en tans hoof van die "British Antarctic Survey").
3. 'n Wapen is ontwerp vir gebruik as stempel op kennisgewings, lidmaatskapkaartjies, briewe, ens. Die wapen verskyn bo-aan die voorblad van hierdie bulletin.
4. Onderhandelings vir die verkryging van dasse met die wapen van die Vereniging daarop is gevoer en sal binnekort afgehandel wees.
5. Die publikasie van *Antarktiese Bulletin*, waarvan hierdie die eerste nommer is, is deur bewilliging van BP Suidelike Afrika (Edms.) Bpk., moontlik gemaak.
6. Deur verdere goedgunstige bewilliging van BP sal daar jaarliks, of van tyd-tot-tyd, 'n medalje genaamd die "Suid-Afrikaanse Antarktiese Medalje" (South African Antarctic Medal) toegeken word aan persone wat presteer op die gebied van Antarktiese wetenskaplike navorsing, of wat deur die loop van jare uitstaande diens gelwer het ter bevordering van die Suid-Afrikaanse pogings in Antarktika en op die sub-Antarktiese eilande.
7. 'n Topografiese model van Antarktika is besig om vorm aan te neem in die Aardrykskunde-departement van die Universiteit Witwatersrand. Hierdie model sal uitgestal word saam met die Vereniging se Antarktiese versameling wat gehuisves word by die Permanente Wetenskaplike Uitstalling by die Skouterrein, Pretoria. Die Vereniging se uitstalling is 'n voortsetting en uitbouing van die vroeëre uitstalling van die Departement Vervoer.
8. Die eerste van die voorgestelde jaarlikse dinees van die Vereniging is in April gehou. 'n Kenmerk van die dinees sal wees 'n toespraak deur 'n gasspreker wat 'n erkende persoonlikheid is in een of ander vertakking van Suid-Afrika se Antarktiese bedrywighede.
9. Mev. P. Crawford het aanvoorkerk gedoen vir die bewaring van Suid-Afrikaanse Antarkticana.
10. Laaste, maar nie die minste nie, het die Vereniging deur besonder goedgunstige inwilliging van die Daprtement Vervoer verkry dat twee van sy lede die huidige vaart van die RSA na Antarktika meemaak vir spesiale waarnemings.

## Association News

**Treasurer:** The Treasurer, Mr. F. Viljoen, resigned in November and was succeeded by Mr. C. Sanby. Mr. Viljoen was forecaster and analyst at the Weather Bureau, Pretoria, and was transferred to Durban to take charge of Weather Office at Louis Botha Airport. Mr. Sanby is supervising officer of the teleprinter section at the Weather Bureau and, as an experienced business man, the money of the Association will no doubt be safe in his care.

**New Members:** The following new members joined the Association in October and November:

Victor von Brunn, W. R. van Zyl, J. A. J. Nel, H. C. Viljoen, R. Abernethy, J. F. Pretorius and N. H. Jay.

**"Ver in die Wereld":** The monthly radio programme "Ver in die Wereld" broadcast over the Afrikaans service of the S.A.B.C. was discontinued during December. This feature, which consisted of news items and messages for the men at SANAE and the islands, is now absorbed (in diluted form) in the weekly programme "So onder deur die Maan", broadcast at 10 p.m. on Thursdays on the Afrikaans transmission.

**Subscription:** The experience during the past year, which was quite an active one for our young Association, that the annual subscription of R1 per member is inadequate for covering anything more than the notices, minutes, summaries of lectures, postage and other limited administrative expenses, led to the proposal that the

membership fee should be raised to R2 per annum from this year. The proposal was unopposed by the members present at the October and December meetings in Pretoria and no objection was raised by correspondence either. According to the Constitution the subscription can only be changed at an Annual General Meeting and therefore the final decision cannot be taken before April this year, but meanwhile the Committee urges members to pay R2 for 1964 to avoid having to pay another R1 later in the year. Members should take into account that they will be receiving this bulletin in addition to the privileges enjoyed previously.

**South African Antarctic Medal (Suid-Afrikaanse Antarktiese Medalje).** The announcement at the October meeting that BP had consented to sponsor the award of a medal to South Africans whose research results, or work in connection with the South African Antarctic effort, merits special recognition, was one of the highlights in the activities of our Association so far. Mr. G. Fitzgerald, Public Relations Officer of BP, Johannesburg, attended the meeting at which the announcement was made. The Committee subsequently discussed the name and conditions of award of the medal and an award committee was established, consisting of Prof. K. van der Walt (convener), Mrs. C. M. Taljaard (secretary), Dr. J. J. Taljaard and Mr. I. Lloyd. A call for motivated nominations for the first recipient(s) was issued at the meeting held on 2nd December and several names were submitted by the middle of December. The award committee is studying the nominations at present and it is the intention to announce the recipient(s) at the February meeting and to present the first award(s) at the annual dinner to be held in March.

**Members of the Association on RSA voyage to Antarctica.** After rather hurried negotiations late in November the Department of Transport agreed to accommodate two members of the Association on the present voyage of the RSA to Antarctica. They are Messrs. W. A. Nieman and J. A. Nel. Mr. Nieman is a lecturer in Geography at the University of South Africa. His main interests are meteorology and climatology and he will make detailed observations of sea temperature and sea ice, as well as general meteorological observations. Mr. Nel is lecturer in Zoology at Pretoria University and he will concentrate on zoological observation and collection.

**Meeting on 2nd December, 1963:** The November meeting was postponed until 2nd December to give the lecturer, Mr. W. Watts a chance to first complete his final examinations as meteorological technician. Mr. Watts was observer at the meteorological station on Gough Island for two years (1958 and 1959) and he has an outstanding collection of colour slides of the Island. Gough is located at 40°S, 10°W about 1,600 miles W.S.W. of Cape Town. It is about 9 miles long and 5 miles wide and steep mountain peaks rise to about 3,000 feet above sea-level. Being located in the southern west wind belt it gets copious rain from the many cyclonic storms and the vegetation consists of dense shrubs, grass and ferns wherever there is soil. Its shores are pounded by huge waves during the storms and this created a coast line of steep cliffs. Mr. Watts' slides cover the rugged mountain scenery, cliffs, plants and animals, the old station in the "Glen" on the northeast coast, the birds and seals and the weather. No doubt many of the audience must have wished to have such a scenic island to retire on.

## Plea for Contributions

It is the intention to include news from SANAE and the Islands as a regular feature of the *Bulletin*, but unfortunately the arrangements for obtaining news other than that which is officially supplied for publication in the *Weather Bureau News Letter*, etc. are still under way and it is hoped to start this feature in the second issue. Members of the Association and readers who receive interesting news items by correspondence from their friends in Antarctica and the Islands are welcome to submit these for publication.

*The Editor will not be able to fill the Bulletin with worthwhile material if no support is forthcoming in the way of contributions from readers. Short articles on any subject with a bearing on research, life, expeditions or other matters connected with the Antarctic, which are of wider than personal interest, are welcome. Reviews or brief summaries of work or events in other parts of Antarctica will also be accepted, but these should be concise, as we will as a rule be restricted to only four printed pages in two months. You might wish to express some thought or idea which is burning a hole through your heart. Please put it down in writing to the Editor.*