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BERGY BITS AND GROWLERS

Geological and Biological Investigations on Marion Island

It will be 17 years in January 1965 since the weather station was established on Marion Island. During all of this period very little scientific work other than meteorological observations were carried out on the island. It was a sore point that the station could only be called a weather station instead of a scientific station, as is the case with most of the bases maintained by other nations in the Antarctic. Limited biological and geophysical observations were taken over short periods but not even a thorough cartographical survey has yet been made.

Therefore it is gratifying to learn that a well organized expedition will go to the island at the end of this year to undertake biological and geological investigations and to chart the island more thoroughly than was possible previously. Professor E. M. van Zinderen Bakker, head of the Botany department of the University of the Orange Free State, will lead the expedition and with him will go his son, E. M. van Zinderen Bakker, Jr., who is an ornithologist, Dr. W. J. Verwoerd and Mr. O. Langenegger of the Geological Survey, B. J. Huntley (botanist, University of Natal) and N. R. Fuller (Zoologist, University of Cape Town).

The RSA will deviate from its usual course to take the Marion expedition to the island in late December or early January. Van Zinderen Bakker, Jr. and Huntley will stay on the island for approximately 15 months, but Prof. van Zinderen Bakker and the remaining three members of the team will return to South Africa after about 3 months with the normal relief voyage of the RSA in late March.

The geological and cartographical surveys will be carried out by W. J. Verwoerd, D.Sc. (Chief Geologist of the General Geology Section of the Geological Survey) and by Otto Langenegger, B.Sc., B.Sc. Ing., who was the geologist of the fourth relief expedition to SANAE in 1963. Dr. Verwoerd is a son of the Prime Minister. He has specialized in vulcanology and should therefore be very much at home on Marion Island. The geology programme includes detailed mapping with the aid of aerial photographs, description of field observations and photography. Representative rock samples will be collected for chemical analysis and petrographic study, as well as geochemical, palaeomagnetic and geochronological determinations.

Mr. Langenegger will assist Dr. Verwoerd but it will be his main task to carry out the cartographic survey, particularly of the western half of the island. It is the intention that a base map should be constructed incorporating as much detail as it will be possible to obtain in the period of under 3 months. A base line will be laid out with the aid of a tellurometer and this will be followed up by triangulation by theodolite. The two men will spend most of their time under canvas in the remote parts of the island, proceeding along traverses radiating from their temporary base camps.

The biological expedition was jointly organized by Professor van Zinderen Bakker and Professor J. M. Winterbottom, Director of the Percy Fitzpatrick Institute of Ornithology, University of Cape Town. The programme includes: collecting of fauna and flora, plant ecology, pollen analysis, soil types, etiology of birds and seals, study of the intertidal zone, collection of bird skins and stomachs, and terrestrial arthropods, census of breeding birds,

ringing of birds, including colourmarking of species intended for further research, ethnological and life history studies of selected species, etc.

It is planned to start out with a limited programme from the meteorological station and to proceed further afield as the investigations gather momentum and experience is gained of working and living conditions in the field.

The expedition is well equipped and extensive arrangements have been made with specialists in the various fields for the working up of the collected material. Nobody will be allowed to publish separate articles or papers on the expedition. The results, at least of the botanical work, will all be published in a monograph on the island.

Lede van die Sesde Aflosspan na SANAE

Die volgende persone is gekies om gedurende 1965 die fort te hou by SANAE (let wel dat daar drie Jouberts in die span is en dat daar ook drie lede is wat 'n tweede jaar by SANAE sal deurbring):

Leier: Josephus Theodorus Johannes van Wyk, 27 jaar oud. Hy het B.Sc. met hoofvakke Wiskunde en Toegepaste Wiskunde in 1963 behaal aan die Universiteit Pretoria en daarna het hy B.Sc. in Bedryfsingenieurswese aangepak. Tewes, soos sy vriende hom ken, het reeds een jaar in Antarktika deurgebring, naamlik 1962, toe hy as weerkundige hoofsaaklik vir die stralingswaarnemings verantwoordelik was.

Medikus: Dr. Jan du Preez de Wit, 25 jaar oud. Hy het sy mediese graad in 1961 aan die Universiteit Pretoria behaal. Dit was besonder moeilik om vanjaar 'n medikus vir SANAE te kry en Dr. de Wit is einde ten laaste in November eers aangestel. In vorige jare het die medikus ook 'n fisiologiese navorsingsprogram behartig behalwe sy gewone pligte om na die gesondheid van die spanlede, asook die van die honde, om te sien. Volgens die 6e Suid-Afrikaanse verslag aan SCAR, word daar nie mediese navorsing vir 1965 beoog nie en behoort Dr. de Wit eintlik 'n geringe taak te hê.

Geoloog: Dr. Wolfgang Hermann Pollake, 28 jaar oud, gebore in Bodenbach, Tsjeggo-Slowakye. Hy het sy doktorsgraad in geologie in 1962 aan die Universiteit van Wenen behaal. Hy het in Februarie 1963 in Suid-Afrika arriveer as geoloog op kontrak vir opnames in verband met die Oranjerivierskema, maar sy belangstelling is gewek vir Antarktiese geologie. Sy program sal insluit 'n oorsigtelike studie van die geologie en geomorfologie van die Ahlmannryggen- en Borgmassivetsdagsome in Dronning Maudland, 100-150 myl suid van SANAE, asook gletsmerkundige waarnemings in die omgewing van die stasie, sowel as langs die roetes na die binneland.

Landmeter: John Anderson Strydom, 27 jaar oud. Hy het sy B.Sc. in landmeetkunde in 1963 aan die Universiteit Pretoria behaal. Gedurende die afgelope jaar was daar nie 'n landmeter by SANAE nie, aangesien kartografie nie een van die dissiplines is waaraan Suid-Afrika besluit het om aktief deel te neem nie. Daar is egter heelwat hulp wat 'n landmeter ten behoeve van ander

programme kan verrig, byvoorbeeld, akkurate bepaling van die beweging van die ysbank (dus ook van die stasie) bepaling van posisies vir geologiese kartering, bepaling van die absolute posisie van die stasie van tyd tot tyd deur middel van waarnemings van die sterre, uitlê van die lugdrade van die radioteodoliet of radiosenders, ens. Gevolglik sal 'n landmeter weer elke jaar in die toekoms by die ekspedisies ingesluit word.

Fisikus: Daniel Johannes Joubert, 24 jaar oud. Hy het B.Sc. in 1961 aan die Potchefstroomse Universiteit behaal. Sy vernaamste program sal wees die waarneming van kosmiese strale. Hy het reeds die vaarte van die RSA verlede jaar na Marion, Bouvet, Gough en Tristan da Cunha meege maak vir die meting van kosmiese strale.

Fisikus: Derek William Sharwood, 22 jaar oud. Hy het B.Sc. in 1962 aan Rhodes Universiteit, Grahamstad behaal. Hy sal die ionosferiese en luggloedprogramme behartig. Ook hy het verlede jaar aan die aflosvaarte van die RSA deelgeneem en luggloedwaarnemings gedoen.

Geomagnetikus: Maurice Bernard Ezekowitz, 23 jaar oud. Hy het B.Sc. (Honours) in Fisika in 1962 behaal aan die Universiteit van Grahamstad. Hy het die afgelope jaar die ionosferiese program by SANAE behartig en hy gaan gevolglik nou sy tweede jaar in Antarktika tegemoet.

Weerkundige: Hendrik Johannes Joubert, 23 jaar oud. Hy het die Seniorsertifikaat in 1959 aan die Noord-Kaaplandse Tegniese Kollege behaal en in 1960 by die Weerburo aangesluit waar hy die diploma vir Tegniskunde (Weerkunde) in 1964 verwerf het. Hy sal as leier van die weerkundige groep optree.

Weerkundige: Gerhardus Petrus Potgieter, 24 jaar oud. Behaal sy Seniorsertifikaat te Lindley in 1961. Sluit aan by die Weerburo as Leerlingtegnikus (Weerkunde) in 1961.

Weerkundige: Andreas Jacobus Steyn, 21 jaar oud. Behaal die Seniorsertifikaat te Philippolis in 1960 en sluit die volgende jaar hy die Weerburo as Leerlingtegnikus (Weerkunde) aan.

Senior Werktuigkundige: Johannes Lodewicus Joubert, 32 jaar oud. Behaal sy N.T.S. I aan die Tegniese Hoërskool, Uitenhage, in 1952. Dit sal sy tweede jaar te SANAE wees, aangesien by reeds een jaar (1962) daar deurgebring het.

Werktuigkundige: Wilfred Hodson, 37 jaar oud. Hy het die Seniorsertifikaat in 1945 behaal aan die Kearsney College.

Radiotegnikus: Nicolaas Stephanus Smit, 27 jaar oud. Hy het die N.T.S. II (Elektronika en Elektrotegniek) aan die Pretoriase Tegniese Kollege in 1956 behaal en in 1963 het hy die Radio-elektrisië Diploma ontvang.

Radio-bediener: Eric Raymond Statt, 27 jaar oud. Junior Sertifikaat aan die Hoërskool Malvern, 1952. Hy het in 1962 as Lugvaart-radiobediener by die Departement Vervoer aangesluit.

Investigations into the "Cape Anomaly" with the co-operation of the South African Air Force

A concerted effort is being made by South African scientists to obtain information on cosmic radiation and airglow in the region of the "Cape Magnetic Anomaly" in the South Atlantic Ocean. Apart from the geomagnetic, cosmic ray, aurora, airglow and

ionospheric observations which are being taken at SANAE, efforts were made to observe airglow and cosmic-ray neutron density in the South Atlantic and western Indian Oceans during voyages of the RSA in 1964 to Marion, Bouvet and Gough Islands. The scientists behind these investigations are Professor P. H. Stoker of Potchefstroom University, Professor P. B. Zeeman of Stellenbosch University and Professor J. A. Gledhill of Rhodes University. These special efforts at present form part of the South African programme in connection with the International Years of the Quiet Sun.

Through the support of the Council for Scientific and Industrial Research, the co-operation of the South African Air Force was obtained to enable the scientists to take observations from Hercules C-130 aircraft which flew special long distance traverses in various directions from Cape Town on 2nd, 3rd, 5th and 6th October. The flight level was about 30,000 feet above sea-level and flying was done during the night for the taking of the airglow measurements. The flights went in the directions of Gough, Bouvet, Marion and Ascension Islands.

It is hoped to obtain more information on the results and success of the flights for publication in a later issue of the *Bulletin*.

Exchange of Publications

The Association has received the following publications from overseas institutions in exchange for the *Antarktiese Bulletin*:

Polar Post—Journal of the Polar Postal History Society of Great Britain.

Arctic—Journal of the Arctic Institute of North America.

Antarctic Report—United States Antarctic Research Programme: National Science Foundation.

Polarforschung—Deutschen Gesellschaft für Polarforschung (Polar Research Institute of Germany).

Il Polo—Rivista Trimestrale Dell' Istituto Geografico Polare (Italy).

Suid-Afrikaanse verteenwoordiger met "U.S. Deep Freeze 1964/65".

Mnr. D. C. Neethling, die koördinerende geoloog vir Antarktiese geologiese en gletserkundige navorsing by die Geologiese Opname te Pretoria, het op 3e Oktober vertrek om as die Suid-Afrikaanse wetenskaplike waarnemer met die "U.S. Deep Freeze" Ekspedisie van 1964-65, saam te gaan. Sy reisplan sluit onder andere in amptelike besoeke aan die Sekretaris van die Gletserkundige Werkgroep van SCAR, Dr. Claude Lorius in Parys; Sir Vivian Fuchs en Dr. Ray Adie van die "British Antarctic Survey"; Dr. G. de Q. Robin van die "Scott Polar Institute" te Cambridge, die Poolnavorsingsinstitute van die Universiteite Wisconsin en Minnesota; die "U.S. Geological Survey" en "National Science Foundation" in Washington en die voorsitter van die Werkgroep Geologie van SCAR, Mnr. R. Willett, in Nu-Seeland. In Antarktika sal Mnr. Neethling aktief deelneem aan geologiese en gletserkundige navorsingsprogramme in die omgewing van McMurdo Sound, Byrdstasie en in die drôe valleie van Suid-Victorialand.

NUUS VAN DIE EILANDE

SANAE—25e September, 1964:

Hier op die ysvlaktes gaan alles nog goed. Die son skyn nou al 12 uur per dag en op helder dae kan 'n mens al sy warmte voel. Die eerste Skua het nou-die-dag hier rondgevlieg.

Ons het verlede week twee interessante Antarktiese verskynsels waargeneem. Onder 'n helder blou hemel was 'n stralekrans om die son duidelik sigbaar en kon ons dit beleef dat sneeukristalle op ons neersif. Boere in die Republiek sou wat wou gee as dit kon reën sonder dat daar 'n enkele wolkie in sig is.

Soos voorspel, is vanjaar sover blykbaar 'n sonstiltejaar want ons het sover nog slegs enkele magnetiese storms gehad, met gevolglike goeie radio-ontvangs. Suiderligte is ook minder waargeneem as in die verlede.

Ons simpatiseer met die manne op Marion, met hulle temperatuurprobleem. Hier is dit 'n gerieflike 15°C binnenshuis.

Tollie Traut, wat ons kok was met die midwintersfees, was nou ook weer kok met Koos Pretorius se verjaarsdag op die 24e. Dit lyk vir ons sy kookbeurt val altyd saam met een of ander spesiale geleentheid en dit sal nie verbaas as Kersfees ook in sy beurt val nie, want hy is altyd vol nuwe idees.

Sover het ons nog steeds die S.A.U.K. se programme helder en steuringsvry ontvang. Die inhoud van die programme vind groot byval by ons almal. Die instelling van die FM-diens maak dit nou vir ons moontlik om na 2200 G.G.T. die Suid-Afrikaanse programme te geniet.

SANAE, 5th October, 1964:

With summer just around the corner there is increased activity at SANAE. The men are still in excellent physical and mental condition. Much interest is focussed on the names of those who will

relieve us when our sojourn on the beautiful yet forboding Antarctic continent is over.

A recent trip to Polarsirkelbukta revealed that the Bukta is still frozen, but many kilometres out some stretches of open sea could be seen. Some new icebergs have joined the familiar older ones and on a clear day they make a breathtaking sight.

Despite the fact that the station is situated 22 kilometres from the ice front mirages often reveal the whole coastline north of us with amazing clarity.

Without hesitation it can be stated that our leader, Skroef van Zyl, and our radio technician, Pieter de Waal, have done a fine job keeping the seismological programme running efficiently. Drift of the level, caused by uneven settling of the new buildings situated about 300 yards south of the base, has made their task a difficult one. During January the American seismologist, Brian Hill, and Howard April had installed the three short period and the three long period seismometers, the system being identical with that in Pretoria.

The short period seismometers are operating satisfactorily but the long period system is disappointing and of little use, apart from earthquake recording. Interesting observations have been obtained from time to time, probably caused by ice shelf movements.

At present Pieter de Waal is erecting a rhombic antenna beamed on Washington, to improve time signal reception.

Apart from the seismological programme Pieter and Skroef have many duties to carry out. Being the radio technician, Pieter is always busy repairing some or other bit of electronic apparatus, but in addition he is at present in the throes of erecting various new aeriels. On social occasions, Pieter is the barman, a task which he enjoys—being a partial abstainer! He is also editor of the local newspaper, the *Sankrant*.

Skroef, as leader of the expedition, always has his hands full with administrative work and organization of matters at the Base. He has been very active with star fixing and azimuth determinations.

Zac Ezekowitz has been appointed geomagneticist for 1965 and we congratulate him and hope that he will enjoy good health and happy days during his second year at SANAE.

SANAE, 28th October, 1964:

Within a matter of weeks SANAE will be enjoying the midnight sun. Already the brightest stars can be seen only with great difficulty and final astro-fixes are being carried out. Large numbers of Antarctic petrels have been circling the base. About ten days ago the temperature rose to -2°C during a heavy snowfall.

The annual Kruger Day bisley was held in spite of bad weather and a cold breeze. Bernie Booyens won the competition with an 84 per cent mark performance.

A severe setback forced the geomagnetic survey party to return to base without completion of proposed work. Approximately one kilometre from Polarsirkelbukta on the normal route the snow bridge of a probably newly formed crevasse collapsed disastrously and swallowed up the caboose and one sledge with two of the field party, viz. Bernie Booyens and Andre du Plessis. Fortunately the muskeg had been detached after the first crack was noticed. Using the muskeg Noel Jay and Trevor Robertson were able to rescue the others from 30 feet down in the 20-foot wide crevasse. There were no serious injuries. Ezekowitz and Traut travelled with huskies, taking spares for the defected muskeg. Two days later Skroef van Zyl salvaged all the important equipment from the caboose.

It now appears that Polarsirkelbukta is unsafe for offloading purposes and another bukta will have to be sought. With this in view, as well as for pursuing further glaciological work, Andre du Plessis and Zac Ezekowitz will soon depart with the dog team on a short trip.

The cosmic ray programme, under geophysicist Deon Kuhn, is a threefold one in which a neutron monitor, a riometer and high altitude balloons are used. The neutron monitor is used to determine both the erratic and cyclic variation of solar and cosmic rays. The riometer measures the signal strength of radio noise originating in the sun and stars. The signal strength is a measure of the density of the ionosphere and atmosphere. During a balloon flight two neutron counter tubes are sent up. The pulses recorded by the tubes, as well as the air pressure, are signalled back by the apparatus

and in this way a profile of the intensity of the neutrons versus pressure can be determined. The first flight was launched successfully, but unfortunately the signals faded before a really useful height was reached. We hope that Deon will have better luck with forthcoming flights.

MARION, 23e September:

Afgesien daarvan dat die weer ons baie goed behandel het die afgelope tydjie, gaan hier nie veel aan nie. Nou moet almal darem ook goed verstaan dat 'n mens van mooiweer op Marion praat as die wind die dag nie waai nie en die son skyn so af-en-toe. Ander soorte mooiweer het ons nie. Een ding waarmee ons darem kan spog is mooi reënboë en volmaanaande. In die winter sit die son laag op die horizon en dan hang daar altyd 'n pragtige reënboog oor die stasie. Op Marion reën dit mos al is daar net een wolkie in die verte.

Noudat die ergste van die winter verby is wemel die wêreld weer van die voëls. Klein pikkewyntjies stap oral rond en die seeolifante is ook fluks aan die kalf. Ons hoenders bly ook nie agter nie—die goed lê deesdae amper twee dosyn eiers per dag en vir 31 henne is dit nie sleg nie. Intussen het ons 'n knortjor gebou.

MARION, 1e Oktober, 1964:

Hier op Marion word die dae nou mooi lank. Mens kan al die termometers soggens 5 v.m. reeds lees sonder om met flitsligte te sukkel.

Die wêreld wemel van die klein pikkewyntjies en seeolifant-kalfies. Die klein albatrossies begin reeds hulle babadonsies verloor en die vlerkvere begin al uitkom. Op pad na Tripodbaai is daar een albatroskuiken wat besonder mak is, seker van al die mense wat gedurig by hom verbyloop om skape te gaan haal.

Die weerkundige hoogtepunt van die maand was die groot wind van die 24e en die aansienlike drukneigings op die 23e en 24e. Tussen 1700 en 2000 S.A.S.T. op die 23e het die druk 11.2 mb gedaal en volgende oggend, ook oor drie uur, 11.1 mb gestyg, gepaard met 'n gemiddelde wind van oor die 60 myl per uur en stote van meer as 90 myl per uur. Onder sulke omstandighede is dit onmoontlik om 'n ballon op te stuur, soos die manne na 'n groot gesukkel en twee stukkende ballonne agtergekrom het.

Dan sit ons hier ook met 'n eierprobleem. Ons hoenders (31 henne) lê deesdae drie dosyn eiers per dag. Ons weet nie meer wat om met die goed te maak nie. Loutjie, ons kranige broodbakker, sit toe nou die dag twaalf eiers in die deeg vir ses brode. Ons kan hierdie gebruik by almal aanbeveel want die resultate het vorentoe gesmaak.

MARION, 3rd November, 1964:

Although Spring on Marion Island started off with wind and snow and cold weather, we had the uncommon experience of three consecutive days of sunshine and little wind at the end of October. Sunburnt faces are quite common on Marion Island after numerous expeditions to far-off places. Meanwhile the rockpenguin penguins have returned to the base and this more than anything else indicates that time is flying and that our pleasant sojourn on the Island will soon come to an end.

GOUGH, 6e Oktober 1964:

Hoewel die berge om die stasie op die oomblik nog wit lê onder die sneeu en dit die afgelope twee dae nog byna onafgebroke reën, is daar, snaaks genoeg, wel sprake van die aankoms van die lente op Gough. Al is dit nie deur trompetgeskal voorafgegaan nie, is die karige 61.2 mm reënval van die afgelope maand, gesien in die lig van 'n gemiddelde sonskynduur van 4 uur per dag, 'n aanlig van 'n gemiddelde sonskynduur van 19 mb in 24 uur waargeneem met al die bykomstighede wat gewoonlik met so 'n verskynsel gepaard gaan. Hieronder resorteer die platwaai van radiosonde en radioteogolietlugdrade. Laasgenoemde het meegebring dat ons nie met vroeë radiosonde en radiowind waarnemings kon bydra tot die sukses van die Hercules C130 vlug oor Gough op die 2e Oktober nie. Hierdie vlug het deel gevorm van die Suid-Afrikaanse eerste keer op 'n hoogte van 30,000 voet om 0001 G.G.T. oor Gough gevlieg, natuurlik ongesien en ongehoord. Nou wag ons almal in spanning op die verskyning van die Tristania wat die gesogte pakkies en tydskrifte sal bring.

NUUS VAN DIE VERENIGING

Vergadering van 28e September 1964: Tien lede van die Vereniging en vyf nie-lede het die vergadering bygewoon waartydens mnr. J. A. Nel van die Zoölogie Departement van die Universiteit Pretoria 'n voordrag gelewer het oor die dierelewe van die Antarktiese gebied. Mnr. Nel het die aflosvaart van die R.S.A. in Desember 1963/Januarie 1964 na SANAE meegemaak en het dus eerste-handse inligting bekom oor sommige aspekte van die Antraktiese dierelewe. Ongelukkig is geen opsomming van die verhandeling vir publikasie in die *Bulletin* verstrek nie. Dit was min-of-meer 'n uitbreiding van die artikel wat deur mnr. Nel geskryf en in No. 2 (Maart 1964) van die *Bulletin* verskyn het.

Meeting of 26th October, 1964: The meeting was attended by 13 members of the Association and four non-members. A general discussion was held on the leadership of Antarctic expeditions. Three former leaders of South African Antarctic teams, viz. Hannes le Grange (1960), Martin du Preez (1962) and A. M. Venter (1963), as well as Henry Fulton (mechanic, 1962) took part

in the discussions. Only four members of the 1965 team could attend the meeting, viz. W. Hodson, G. P. Potgieter, H. J. Joubert and N. Smit. A tape recording was made for the leader of the 1965 team, Mr. J. T. J. van Wyk, to take down with him to Antarctica and to which he can turn for wise counsel when encountering problems during his term of office at SANAE.

Chairman announces resignation: At the meeting of the Association in Pretoria on 26th October, Hannes la Grange announced that he would not be available to act as Chairman after January 1965. As the October meeting was to be the last meeting of 1964 he availed himself of the opportunity to tender his resignation about six months before his term of office would normally have expired at the time of the next annual general meeting. Mr. I. Lloyd moved a vote of thanks for Hannes' devoted services to the Association during more than one year. His place will be taken by the vice-chairman, Commandant W. J. Chapman, until the election of the new office bearers takes place in March or April 1965.