

Biologiese Navorsing in die Antarktiese Gebied

Deur Jan Nel

Vir die bioloog is Antarktika 'n braak veld sover dit navorsing betref. Alnoewel ons vandag weet watter diere daar voorkom (verwysings 1, 2, 3), is ons kennis omtrent hulle getalsterkte, verspreiding en veral die faktore wat hulle leefwyse beïnvloed, nog maar baie karig. Die meeste lande wat belang het by Antarktika het tot nogtoe gekonsentreer op navorsing in verband met aspekte van weerkunde, landmeting, geologie en fisika, om 'n paar te noem. Dit is slegs betreklik onlangs dat die V.S.A., en tot 'n mindere mate Groot Brittanje, ook intensiewe navorsing op biologiese gebied aangepak het. Alhoewel daar reeds die afgelope paar eeue 'n groot aantal ekspedisies na Antarktika, of die suidelike oseaan onderneem is, was die aantal bioloë wat saamgegaan het betreurenswaardig min, sodat ons kennis van die diere- en plantelewe van hierdie afgeleë gebied nog agterweë gebly het (verwysing 4).

Wat dit vir Suid-Afrika so uiters noodsaaklik maak om navorsing op biologiese, en meer bepaald dierkundige gebied, te onderneem is die feit dat die huidige navorsing gedoen word baie ver weg van die sektor tussen SANAE en die Republiek waardeur die RSA jaarliks vaar. Baie belangrike navorsing kan op sulke reise van die RSA onderneem word—veral wat betref die samestelling en talrykheid van die dierelewe in hierdie gedeelte van Antarktika. Ook die faktore wat die dierelewe op die pakys beïnvloed is nog nooit ondersoek nie—die meeste navorsing word gedoen op diere buite die pakys, of digby die kontinent self (verwysing 5).

Vir dierkundige navorsing kan Antarktika in vier gebiede verdeel word:

- (1) Die sub-Antarktiese eilande;
- (2) die suidelike oseaan;
- (3) die pakys, en
- (4) die Antarktiese kontinent self.

In die winter is die pakys en die kontinent aaneenlopend, maar in die somer is daar 'n wissellende hoeveelheid oop water tussen die kontinent en die pakys, wat 'n duidelike invloed op veral die verspreiding van voëls het.

Op die sub-Antarktiese eilande waarop daar Suid-Afrikaanse weerstasies is, het onder andere Rand (verwysing 6) en La Grange (verwysing 7) waardevolle waarnemings gedoen op robbe en voëls en La Grange het ook waarnemings gedoen in die suidelike oseaan, die pakys en die kontinent. Op die pas afgelope reis van die RSA na SANAE is veral aandag geskenk aan die verspreiding van robbe (Phocidae, Lobodontini) op die pakys, en watter invloed die ystoestande en oop water in die pakys daarop het. Hierdie aspek van robverspreiding is sover bekend, nog ooit ondersoek nie. Tot dusver was daar nog altyd beweer dat die Antarktiese robbe (met uitsondering van die Weddellrob) net aan die rant van die pakys voorkom. Waarnemings het getoon dat hierdie aanname foutief is—robbe is tot honderde myle die pakys in teëgekrom. In drie gevalle kon waarnemings ook gedoen word op die samestelling van kuddes van die Krapeter rob, *Lobodon carcinophagus*, waar al die diere van die kudde geskiet was vir hondevoedsel. Wat veral interessant is, is dat van die ongeveer 120 robbe wat gesien is (ongeveer 40 is geskiet) daar net een jong individu teengekom is. Die mates van bykans al die robbe wat geskiet was is geneem. Grafies kon dus die gemiddelde lengte van onder andere die Krapeterrob, sowel as die gemiddelde lengte van die bulle en koeie, bepaal word.

Die liggaamstemperatuur van twee spesies robbe (Krapeter en Luiperdrob) is gemeent deur middel van 'n spesiale rektale termometer. Daar is aansienlike verskil in die temperatuur, wat moontlik gekorreleer kan word met die verskil in leefwyse. Ook is die temperatuurafname by 'n Krapeterrob vanaf intree van die dood tot 3 uur daarna eksperimenteel vasgestel.

Gedragstudies is 'n relatiewe nuwe veld in Dierkunde. Alhoewel daar reeds werk gedoen is op die gedrag van robbe in die noordelike halfrond, is nog min bekend oor die gedrag van die Antarktiese robbe. Vanweë hulle isolasie en die gebrek aan natuurlike vyande kan verweg word dat die gedrag van die suidelike robbe sal verskil van dié van hulle noordelike verwante. Waarnemings in dié verband is dan ook gedoen.

'n Aantal robbe is gedissekteer, veral met die oog op die bestudering van die spysverteringsstelsel, die voortplantingsstelsel, om orgaanmonsters te bekom vir latere studie en om te soek vir parasiete. 'n Paar neus- en inwendige parasiete is bekom, wat egter nog nie geïdentifiseer is nie.

'n Aantal robskedels is versamel, party heeltemal onbeskadig. Skedels van al vier robspesies wat in Antarktika voorkom is bekom, en dit word betwyfel of daar nog so 'n verteenwoordigende versameling in Suid-Afrika is.

Bostaande is die hoofaspekte van die dierelewe waarop gelet is. Weens gebrek aan tyd voor vertrek na Antarktika kon spesifieke projekte nie uitgewerk word nie, en daar is dus meer in die algemeen waarnemings gedoen. Die verskeidenheid van die dierelewe daar in die verre suide laat 'n mens tot die besef kom van die geweldige moontlikhede vir biologiese navorsing, temeer so omdat daar feitlik nog niks navorsing gedoen is op die fauna en flora van dié gebied nie. As geïnteresseerde party in Antarktika is dit Suid-Afrika se morele plig om in dié verband 'n bydrae te lewer.

Verwysings:

1. Alexander, W. B., 1928: *Birds of the Ocean*.
2. Winterbottom, J. M., 1963: The antarctic Fauna. *S. Afr. J. Sci.*, 59:559-560.
3. Sceffer, V. B., 1958: *Seals, Sea Lions and Walruses*. Stanford, Stanford University Press.
4. Roberts, B. B., 1948: Chronological list of Antarctic expeditions with brief notes on each, 1502-1948. In *The Antarctic Pilot*, Ed. 2:6-25. London, Admiralty Hydrographic Department.
5. Bulletin of the U.S. Antarctic Projects Officer, Washington. Vol. IV, No. 9:38-60; Vol. V, No. 2-37.
6. Rand, R. W., 1956: Notes on the Marion Island Fur Seal. *Proc. Zool. Soc. London*, 126:65-83.
7. La Grange, J. J., 1962: Notes on the Birds and Mammals on Marion Island and Antarctica (SANAE). *Jour. S. Afr. Biol. Soc.*

News from SANAE and the Islands

SANAE

One of the two Muskeg snow vehicles at SANAE was completely destroyed by fire in March and this was a particularly severe blow to geologist Andre du Plessis, whose programme of field work had been planned in considerable detail. It is Andre's second year at SANAE in accordance with the policy that to obtain the most out of a geologist in Antarctica he should stay for a second year in order to have at least one full summer season in the field. The loss of the Muskeg will fortunately not completely upset his work, because the training of the huskies is proceeding well and the prospects of a successful trip to the mountains after the winter are promising. In the meantime Andre is concentrating on glaciology and he intends doing a comprehensive survey of the Trolltunga glacier about 45 kilometres east of SANAE.

On 7th April it was reported that practically all the settling-in drudgery at the base had been finished and that more attention could be given to the scientific programmes. Everything at the Base had been stored in its correct place, including Franco du Toit, that is in his bed, which, according to his philosophy, is the only place to solve one's problems in such a cold part of the world. Franco is the leader of the meteorology team and it must have been in bed that he solved the problem of obtaining higher radiosonde soundings than previously. Thanks to Pieter de Waal's zeal, the seismograph recorded its first big earthquake, viz. the Alaska quake. Tollie Traut (medical doctor) operated on the eyes of Vrystaat, one of the husky pups. He was assisted by Zac Ezekowitz while Koos Pretorius acted as narcoticist (small wonder that it took abnormally long before Vrystaat came round again). The operation was a success as testified by the fact that Vrystaat now starts barking the moment his food appears through the window in his section of the dog tunnel.

Although the station is on shelf ice almost 20 kilometres from the sea, mirages are often responsible for excellent views of that world north of the ice front.

On 25th April the following signal was received: As the approach of winter draws closer we are very busy with the final preparations for colder days. Sufficient fuel for this period has been pumped into the drums in the snow passage. The caboose has been emptied and the sledges raised on drums. Those of us who have aerial systems to maintain are making final close checks to save us from repairs at temperatures below minus forty degrees Celsius. The absolute magnetic hut has been lifted from under several feet of snow and placed in a new position. Meanwhile Skroef van Zyl and Andre du Plessis have been doing sun and star fixes to obtain our exact position. Trevor Robertson has observed the first faint aurorae.

The successful cultivation of tulips, pot plants and a variety of vegetables under artificial light and heating conditions at SANAE caused quite a flutter at the station and in South Africa. This is of course not the first time that plants have been grown in greenhouses in Antarctica (see, for example, page 2 of *Antarktiese Bulletin* No. 1) but it is undoubtedly a triumph for the du Plessis (Andre and his father) and it will certainly raise the morale of the men at SANAE. (It is hoped to publish a detailed article about this venture in the next issue of the *Bulletin*).

MARION ISLAND

The RSA arrived at Marion Island on 2nd March with the new relief team. The weather was not particularly favourable for off-loading and the ship could only start the return voyage on the 10th, arriving back in Cape Town on the 17th.

The first news from the new team arrived on 20th March, as follows: Once more Oubaas (the dog) has to get used to an array of new faces. He is the only permanent inhabitant of the station and it will be understandable if he should turn into a neurotic being with so many strange "basies" to get accustomed to every year. The present set of new faces belong to: **Theo von Ludwig**, meteorologist and leader, hailing from Stellenbosch, engaged; **Steve Quinn**, technician (meteorology); Port Elizabeth; **Sidney Strong**, learner technician (meteorology), Mafeking; **Wynand Visagie**, radio operator and technician, Pretoria; **Loutjie de Beer**, medical orderly and excellent cook, caretaker of the biltong and dried sausages, Pretoria, but with his heart in Durban; **Kosie Human** and **Cedric Roberts**, two handymen from the Department of Public Works, Cape Town. They are both married. Tidying and patching up the place and welcome assistant cooks.

On 1st April the news from Marion read that with plenty of unpacking and storing of supplies, there had been little time for prawning round the island. The weather had been exceptionally mild during March, except for a brief snowfall and 60 knot winds on the 18th. It was practically cloudless on the last four days of the month.

Two of the members of the team had the fright of their lives while fishing one morning when two killer whales surfaced right in front of them. They swore that they could feel their breaths.

After two months on Marion, that is, at the end of April, it was reported that at last the low pressure generator was functioning and that the met blokes could almost guarantee that after filling up with the necessary chemicals something very much like hydrogen would be emitted. The 800 gram balloons supplied for the IQSY have occasionally been too much for the men because they reach alarming proportions when fully inflated in a 40 knot wind. With these balloons the average pressure level reached in the soundings of April was 46 mb., something to be proud of. Loutjie de Beer, the medical man, developed a very successful secret call to entice the sheep to come running from wherever they are grazing to be locked up for the night.

GOUGH ISLAND

Once again Gough Island was drought stricken during March. Only 12.7 mm of rain fell during the last 12 days of the month and the stream from which the station's water supply is derived, dried up completely (the pipe line was shifted to a more perennial stream during the visit of the RSA two weeks later).

The swan song of Piet le Roux and his colleagues, as reported fully in the Weather Bureau News Letter for March 1964, was quite moving, but lack of space does not permit its reproduction here. The year had been eventful at Gough, the outstanding event having been the death of leader Johan Smalberger. A notable achievement was the installation of the Väisälä radiotheodolite and the commencement of wind soundings since December.

The relief team to Gough Island departed from Cape Town on 22nd March. Instead of sailing directly to Gough the RSA made a detour to Bouvetoya to carry out a reconnaissance of this island in conjunction with the British patrol ship *HMS Protector*. Thus the men arrived at Gough only on 9th April after having covered almost 3,000 miles at sea and endured some rough weather at Bouvetoya and on the voyage to Gough. Daily radiosonde soundings on board offered some diversion during the prolonged cruise.

The off-loading was handicapped by poor weather but the helicopter, which had been hired for the Bouvet reconnaissance, was employed to carry about half the cargo to the recently erected station above Transvaal Cove. The helicopter has proved to be marvellously versatile and useful for ferrying men and material from ship to shore and if there had been sufficient space for it to come in among the "forest" of derricks to pick up loads directly from the holds, it would have been a piece of cake to have off-loaded the 50 tons of cargo for the station.

The new team consists of: L. I. Naude (meteorologist and leader); M. Fourie (technician, meteorology); G. R. Vallance (technician, meteorology); A. J. Kriel (learner technician, meteorology); J. S. Bouwer (medical orderly); D. N. Jonker (radio technician); De W. T. Mynhardt (radio operator).

Little has been heard from the new team—they are evidently very busy getting "method into the madness" of the new conditions, work and the "untidy heap of boxes" piled up during the off-loading of the RSA. When everything is finally sorted out they hope to sit back and enjoy the luxuries to be gained from a new washing machine, snooker table and record player.

Nuus van die Vereniging

Jaarlikse Dinee en Oorhandiging van die Eerste Suid-Afrikaanse Antarktiese Medalje

Die tweede jaarlikse dinee van die Vereniging is op Saterdag, 21e Maart, in die Union Hotel, Pretoria, gehou. Altesame 45 persone het die dinee bygewoon, onder wie 8 eregaste, naamlik Mnr. A. E. Morris (hoof van BP in Transvaal) en sy gade, Mnr. G. Fitzgerald (Publieke Skakelbeampte van BP in Transvaal) en sy gade, Prof. en Mev. S. P. Jackson en Mnr. en Mev. D. G. Kingwill.

Prof. K. van der Walt het as seremoniemeester opgetree. Mnr. Kingwill was die hoofspreek (sy toespraak word in hierdie uitgawe weergegee) en mnr. M. P. van Rooy (Direkteur van die Weerburol) het hom bedank.

Dit was ook die geleentheid vir die oorhandiging van die eerste Suid-Afrikaanse Antarktiese Medalje aan Hannes le Grange. Prof. Jackson het die motivering vir die oorhandiging voorgedra en die medalje is deur mnr. Morris as verteenwoordiger van BP, wat die medalje aan die Vereniging geskenk het, oorhandig.

Nog 'n item wat die geleentheid merkwaardig gemaak het was die oorhandiging van die topografiese model van Antarktika, wat deur mej. Hazel Beaton van die Aardrykskunde-fakulteit van die Witwatersrandse Universiteit gemaak is, aan die Vereniging.

Algemene Jaarvergadering, Pretoria, 27e April, 1964

Vier items van algemene belang is by hierdie geleentheid behandel, naamlik die finansiële staat vir die jaar 1963, die voorsitter se verslag vir die periode vanaf die vorige Jaarvergadering, die verkiesing van die nuwe Bestuur en die goedkeuring van die voorstel vir verhoging van ledegelde na R2 per jaar. Die finansiële verslag word aan lede van die Vereniging alleen gesirkuleer. Die jaarverslag van die Voorsitter word hieronder aangegee. As Bestuur vir die tydperk tot die jaarvergadering van 1965 is die volgende lede gekies:

Voorsitter: J. J. le Grange (herkies).
Vise-Voorsitter: W. J. B. Chapman.
Lede: I. Lloyd (herkies); E. R. Boden.
Ere-sekretaresse: Mev. C. M. Taljaard (herkies).
Ere-penningmeester: C. Sanby (herkies).
Ere-ouditeur: M. du Preez.