



SASCAR NEWSLETTER

WKAN NUUSBRIEF



ISSN: 1010-2604

No: 30

DATE: APRIL
DATUM:

IN THIS ISSUE

- FRD EVALUATIONS AND SASCAR PROJECT LEADERS
- SUMMARY OF SANAE TAKE-OVER (V.52) : 1987/88
- SHORE-BASED RESEARCH CONDUCTED ON GOUGH AND INACCESSIBLE ISLANDS, VOYAGE V51, SEPTEMBER - OCTOBER 1987
- REPORT ON THE 1987/88 SURVEY AND MAPPING FIELD SEASON IN ANTARCTICA : V.52
- AIN'T NO CURE FOR THE WINTERTIME BLUES - OR IS THERE?
- HISTORICAL ARTEFACTS : PRINCE EDWARD ISLANDS
- NATIONAL GEOPHYSICAL DATA CENTER (NGDC)
- THE TRISTAN DA CUNHA ASSOCIATION
- DEPLETION OF THE OZONE LAYER CAUSES CONCERN
- VACANCY : ORNITHOLOGIST
- DID YOU KNOW?
- LIMERICKS

FRD EVALUATIONS AND SASCAR PROJECT LEADERS

This is a reminder that all SASCAR project leaders (i.e. the grantholders) should submit themselves for evaluation by the FRD classification of researchers system. The same applies to research, as opposed to technical, Antarctic Officers. It seems likely (possibly from 1989) that all persons submitting or proposals to research programmes at FRD will need to have been evaluated through the above-mentioned system. Non-tenured persons (e.g. Antarctic Officers), who may now serve as project leaders, will therefore also need to have been evaluated.

P R Condry
SASCAR Office

SUMMARY OF SANAE TAKE-OVER (V.52) : 1987/88

After a 6-day delay, we finally set sail for Antarctica on 1 December 1987. We arrived at the ice shelf of SANAE on 10 December 1987 after an uneventful voyage. Fortunately there was bay ice available for offloading purposes. The SANAE 28 team had performed the impressive task of digging a ramp down from the ice shelf to the bay ice to allow vehicle access to the ship. This greatly facilitated the task of offloading as the visibility was generally bad and the helicopters were grounded. It also meant that vehicles could be loaded onto and off the ship. We were fortunate to be frequently visited by curious Adelie and Emperor penguins.

Once offloading the ship was completed we flew into SANAE. The base was found to be in good general condition. Outside installations such as the emergency base and the scientific huts were also bearing up well. Work during take-over proceeded fairly well although consistently poor weather, including three storms, held up operations and resulted in a lot of extra labour. Nevertheless most of the work, scientific and logistic, was completed.

On the scientific side there were many suggestions for the improvement of SANAE. These included satellite communications to South Africa, heated raised garages for the servicing of vehicles, and a large raised structure, similar to the emergency base, to house all the scientific huts and possibly offices. In the longer term it was suggested that a mountain base built on rock be opened for over-wintering purposes. This would allow some programmes to have dual stations and, due to lower cloud cover, improve the viewing of aurora.

A generally congenial atmosphere pervaded the base throughout takeover. We were grateful for the warm reception given us by SANAE 28 and their continued hospitality in the base during takeover. Thanks go to DEA and Dirk van Schalkwyk for organizing and co-ordinating the takeover period, Captain Leith and his crew for a safe voyage, the helicopter pilots and crew for their difficult task and SANAE 28 for so graciously accommodating us.

M Kosch
Chief Shore Scientist (Sanae) : V52
Dept Physics, UN Durban

SHORE-BASED RESEARCH CONDUCTED ON GOUGH AND INACCESSIBLE ISLANDS,
VOYAGE V51, SEPTEMBER - OCTOBER 1987

Introduction

The M.V. S.A. *AGULHAS* left Cape Town on 16 September 1987, arriving at Gough Island on 22 September, after a detour via Tristan da Cunha to land a sick passenger. After unloading at Gough, the ship departed for Tristan where it disembarked members of the Inaccessible Island expedition on 28 September, removing them from the island on 14 October. The S.A. *AGULHAS* returned to Gough on 15 October, departing for Cape Town on 17th and arriving there on 22 October.

Scientific Activities at Gough Island

1. Geomagnetism

The pulsation data logging system, Eda Fluxgate Magnetometer and Proton Precession Magnetometer were operated by Andy Walton (Magnetic Observatory) without any serious snags. It was not possible to erect a reference pillar, used during sun and star observations, due to the lack of a suitable position and also a lack of sufficient building materials. As a result no sun or star observations were performed.

2. Geology

A team of ship-based geologists, led by Anton le Roux (University of Cape Town) was flown into Goneydale by helicopter on 23 September and walked back to base on the same day, after having completed their investigations.

3. Ornithology

Gastric digestion rates of three prey types were qualitatively determined for Sooty Albatrosses and Rockhopper Penguins by Sue Jackson (University of Cape Town). Stomachs were inspected using a fibre-optic gastroscope. Gastro-intestinal passage rates of the three prey types were determined for captive adult Rockhopper Penguins. All captive birds were released, unharmed, on the completion of the experiments.

Apart from a two-day trip to Goneydale at the beginning of the takeover on 23 and 24 October (helicopter in, walk out) to count and ring Wandering Albatross chicks, ornithological field work centred on birds near the base. Monitoring of individually colour-banded breeding Yellow-nosed Albatrosses, Sooty Albatrosses and sub-Antarctic Skuas by John Cooper (University of Cape Town) continued for the sixth year.

The diets of sub-Antarctic Skuas and Broadbilled Prions were studied by collecting regurgitated pellets and induced regurgitations respectively. Diets of skuas (including plastic pellet loads) will be compared with data collected simultaneously at Inaccessible Island. Diets of prions will be compared with those of Salvin's Prions at Marion Island.

Scientific Activities at Inaccessible Island

1. Volcanology

The aim of the studies conducted by Luc Chevallier (University of Stellenbosch) was to reconstruct the different building phases of the Inaccessible Island eroded volcano in order to compare with other intra-oceanic volcanic edifices. Mapping covered more than three quarters of the island; the impossibility of walking around the whole coast and on half the surface of the plateau (covered with dense vegetation) did not allow complete coverage. Stratigraphic analysis was done on several cross sections on the north-west cliffs of the island. Different geological units (building phases) were recognized. The structural analysis was based upon tectonic observations (intrusives) and morphology. This analysis was completed by a trip by dinghy along the southeast and northeast coasts. Rock sampling was done on two specific cross-sections, along West Road (from the hut to the plateau).

2. Ornithology

The metabolic rates of captive Inaccessible Rails were estimated from oxygen consumption using a throughflow chamber by Peter Ryan and Barry Watkins (University of Cape Town). Body temperature and mass were recorded before and after metabolic experiments. Birds were then released, unharmed.

Tristan Buntings at Blenden Hall and on the plateau were caught and studied. Recordings on male and female songs and calls were also made. Further work is required to elucidate the taxonomic status and possible evolutionary history of the Tristan Bunting, which occur in two forms on Inaccessible.

A survey of beached artefacts was made and compared with the results of the 1984 survey. The overall density of artefacts had increased by 47%, with the greatest increase among plastic objects. Artefacts attributable to the local fishery were little increased in abundance, whereas those derived from distant sources had increased by at least 120%, suggesting a recent increase in the density of artefacts adrift in the south Atlantic Ocean.

Fresh sub-Antarctic Skua pellets were collected and examined for plastic particles. Three seabird prey species predominated among skua pellets: Whitefaced and Whitebellied Stormpetrels and Broadbilled Prions. Plastic levels were considerably greater than during 1982 - 1983 at Inaccessible Island.

Inaccessible Island supports the smallest regularly breeding population of Wandering Albatrosses in the world, with a population of some two to four pairs for the last 50 years. However, despite an intensive search of the area where these birds breed, no nests were found.

The shore-based research at Gough and Inaccessible Islands went smoothly and nearly all objectives were attained. My thanks to everyone who participated in V51 (both on ship and shore) for their willing help at all times, and to the Administrator and Island Council, Tristan da Cunha, for permission to visit Inaccessible Island and for the use of the Denstone Hut.

J Cooper
Chief Shore Scientist :V51
Percy FitzPatrick Inst., UCT

**REPORT ON THE 1987/88 SURVEY AND MAPPING FIELD SEASON IN
ANTARCTICA : V.52**

1. Introduction

There were three tasks to be completed in the following order of priority during this season.

- 1.1 Fix seven doppler control points in Sverdrufjella - of which six were identified during 1986/87 plus one additional point which was to be identified prior to fixing.
- 1.2 Topographical survey of Robertskollen including identification of numerous photo control points and fixing three or four doppler points.
- 1.3 Annual doppler survey at SANAE plus topographical (huts, masts, etc.) survey and annotation of aerial photograph of SANAE.

2. Surveyors concerned

S Coetzee (leader)
W A O Linghorst

3. Sverdrupfjella doppler survey

- 3.1 Three JMR doppler receivers were used without apparent problems.
- 3.2 Three stations were occupied simultaneously - one at Grunehogna S.A.1 and two points in the Sverdrupfjella for a period of + 3 days each to collect enough information at each station.

- 3.3 24 - 37 Dec 1977 Deploy PC8 and PC11 in Sverdrupfjella with base station at Grunehogna.
- 27 Dec 1987 to 3 Jan 1988 Retrieve doppler receiver from PC8 and PC11 and deploy at PC2 and PC15 in Sverdrupfjella with base station at Grunehogna.
- 3 - 7 Jan 1988 Retrieve receiver from PC2 and PC15 and deploy at PC1 and PC17 in Sverdrupfjella with base station at Grunehogna. Identify photo control point (PC1) at Sorhausane.
- 7 - 15 Jan 1988 Retrieve receiver from PC1 and PC17 and deploy at PC11 and PC14 in Sverdrupfjella with base station at Grunehogna.
- 3.4 Meteorological observations (i.e. temperature and pressure) were recorded at Grunehogna immediately prior to deploying receivers in the field and again on return to Grunehogna. Pressure was also recorded in the field at the time of deployment to give a good estimate of pressure difference between Grunehogna and field stations. There is no relative humidity recording device at either Grunehogna or SANAE.
- 3.5 Bad weather resulted in some stations being occupied for much longer times than necessary and thus slowing the work down. Bad weather also initially resulted in the programme being delayed.

4. Robertskollen topographical survey

- 4.1 Due to circumstances beyond control (i.e. bad weather and a malfunctioning helicopter), Robertskollen could not be visited.

5. SANAE doppler and topographical survey

- 5.1 19 - 23 Jan 1988 Doppler observations at SANAE West pillar and, as an extra, at SANAE North pillar were carried out. The latter was done for the benefit of Hermanus Magnetic Observatory to whom both pillars are of importance.
- 5.2 19 - 27 Jan 1988 Of all the time spent at SANAE only three half-days could be spent working outside because of poor weather conditions. A basic survey could be carried out with necessary angles and distances to do topographical survey, as well as the annotation of aerial photograph taken by the West German Alfred Wegner Institute during February 1987.

5.3 Instruments used were Wild T2 theodolite and Wild DI 3000 electronic distance measuring device.

6. General

Because of extremely bad weather conditions experienced during this season and one defective helicopter, not all the planned survey work could be completed.

S Coetzee
Chief Directorate:
Surveys and Mapping

AIN'T NO CURE FOR THE WINTERTIME BLUES - OR IS THERE?

Because winter is such a gloomy time, it makes us gloomy too, or so theory goes. Scientists have a fancy name for this alleged change of mood, which they attribute to seasonal changes in the amounts of sunlight we receive. They call it seasonal affective disorder, or SAD.

Recently, scientists studied a group of subjects who are susceptible to drastic seasonal changes in the light conditions. The subjects were scientists themselves. They were based at Halley, the most southerly British research base in the Antarctic. During the winter, they spend almost all day in the dim light of their laboratories and quarters.

Psychologists think that they can cure depression caused by lack of light by increasing levels of artificial light. Scientists at the British Antarctic Survey and at the Universities of Surrey and Sussex recently studied the researchers at Halley, which has the longest darkest period of all British bases in the continent. They aimed to prove the theorists correct.

They report their results in *Neuroscience Letters* (vol 79, 1987, p 185). They examined how extra hours of bright light affected the moods and hormone rhythms of the staff at the base.

They gave one hour of bright light twice a day to five subjects and compared the consequences with the effects of dim light on another group of subjects.

Despite anecdotal accounts of depression under these conditions, the psychologists recorded no changes in the subjects' patterns of mood or sleep during the experiment. But they did find significant changes in hormone rhythms. The subjects exposed to extra light developed an abnormal two-hour shift in their cycles for producing melatonin, a hormone produced by the pineal gland.

The researchers speculate that this ability to manipulate circadian rhythms by altering people's exposure to light might help shift workers, for example, and people suffering from jet lag.

The researchers also conclude, that, contrary to expectations, dim light is powerful enough to dictate the body's circadian rhythms. Also, they say, the body seemd to produce melatonin according to a 24-hour cycle.

from NEW SCIENTIST
7 January 1988 No 1594

HISTORICAL ARTEFACTS : PRINCE EDWARD ISLANDS

The SA Maritime Museum is an approved satellite of the SA Cultural History Museum with a mandate to preserve, research and represent South Africa's maritime history in its broadest sense.

Recently the museum was approached, and accepted the request, to become the official custodian of all historical material removed from the Prince Edward Islands. Furthermore, in accordance with the recommendations of the SASCAR workshop of 1984 and report of 1986, a member of the maritime museum will, in the course of the next few years, survey these sites and draw up guidelines for the preservation of material they contain.

The 1986 report also stated that over the years many historical artefacts have been removed from the islands and suggested that an effort be made to trace, identify and work for the transfer of these items from private individuals to a recognized museum.

As it is now firmly established that the SA Maritime Museum will be the official custodian of historical objects removed from the islands, we appeal to all persons of previous expeditions, who have such items in their possession, to contact the museum so arrangements may be made for accepting them into the collection.

The address: The Curator, SA Maritime Museum, P O Box 645, Cape Town 8001
Telephone : (021) 468280

T A Graham
Director: SA Cultural
History Museum

Note: I urge all past expeditioners and visitors to Marion and Prince Edward Islands to donate any mementos they may have to the SA Maritime Museum where they can be properly looked after and displayed to the public.

P R Condy
SASCAR Office

NATIONAL GEOPHYSICAL DATA CENTER (NGDC)

Due to changes in U.S. Government pricing policies, it is necessary for the National Geophysical Data Center (NGDC) to change charges for shipping data. Beginning mid-November 1987, a handling charge of \$10.00 will be required on all orders. Non-U.S. orders will require an additional \$10.00 surcharge for a total of \$20.00. Prices for data have also changed, many are now lower than in previous years.

Please call or write before placing your order to verify the price of data. Calls or written enquiries should be directed to the following address or phone numbers:

National Geophysical Data Centre
NOAA, NESDIS E/GC4
325 Broadway
Boulder, CO 80303

Telephone Numbers

For Solar Geophysical Data	(303) 497-6346	(FTS) 320-6346
For Solid Earth Data	(303) 497-6419	(FTS) 320-6419
For Marine Data	(303) 497-6338	(FTS) 320-6338

Thank you for your continued interest in our products and services. We hope to hear from you soon.

Michael A Chinnery
Director : NGDC

THE TRISTAN DA CUNHA ASSOCIATION

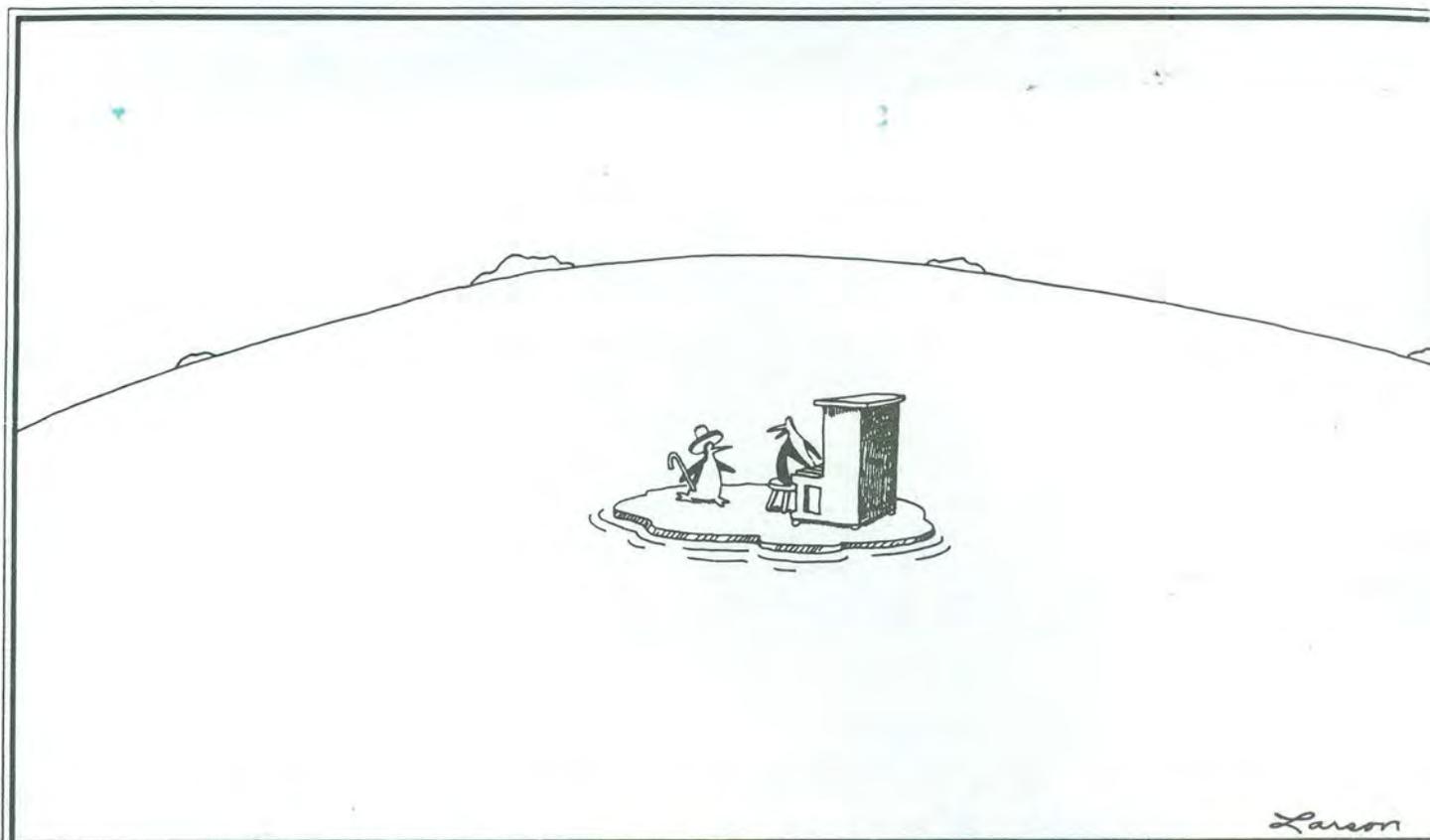
The Association, like the proverbial oak, has grown quickly from a small beginning. We now have 233 members and, judging by the continuing enquiries, this number is likely to go on rising. Among our members, only eight of whom are Corporate, are: 15 Islanders (mostly resident in this country), eight ex-Administrators, eight ex-Pardres (including one widow), six ex-Doctors, six ex-Schoolteachers, that is a minimum of 28 ex-patriates and nearly double that if one includes wives. It is very fitting that, in their Jubilee year, no fewer than seven members of the Norwegian Scientific Expedition have joined the Association, as also have six members of the Gough Island Scientific Survey and eight of the Denstone Expedition to Inaccessible Island. The largest single group of members is the philatelists (at least 20 who have declared their interest); but there are also nine who have served in ships that have visited Tristan, including three from *H.M.S. ATLANTIC ISLE*. However, all of these together account for only half our membership. It would be interesting to hear from the other half what their special interest in or connection with Tristan is. Probably the oldest person we have heard from is one ex-Chief Petty Officer Riley who was serving in *H.M.S. DUBLIN* when she visited Tristan in 1921.

The Committee met three times during the year and has been kept busy, especially in connection with the *Newsletter*: At its first meeting, the joint Editors were elected and many suggestions about its form and content were discussed. It was, however, felt that two *Newsletters* a year to start with was as many as could be managed; but that may change. Links have been established with other island Associations - a report from the St Helena Link occurs in this *Newsletter*.

Extract from "Tristan da Cunha Newsletter", No 2 March 1988.
Published by the Tristan da Cunha Association

Note: For the convenience of readers we attach to the back of this SASCAR Newsletter a copy of the Tristan da Cunha Association membership application form.

Mrs B Coetzee
SASCAR Office



"No, no, no! Now, try it again! . . . Remember, this is our one and only ticket out of here!"

DEPLETION OF OZONE LAYER CAUSES CONCERN

Recent research has indicated that a considerable increase in the incidence of skin cancer as well as some disruption of natural ecosystems can result from the depletion of the ozone layer, protecting the earth from dangerous solar ultraviolet rays.

The gradual depletion of the stratospheric ozone layer which shields the earth from dangerous solar ultraviolet radiation (UV-B) is causing concern for scientists all over the world.

This depletion is attributed to the effects of anthropogenic emissions of halocarbons (especially chlorofluorocarbons) and has been predicted for over a decade. The likely consequences of increased skin cancer and the potential disruption of ecosystems are the main causes for concern by international scientists.

According to Mr Denzil Miller, oceanographer of the Sea Fisheries Research Institute of the Department of Environment Affairs and the South African delegate on the scientific committee of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), recent observations have indicated a dramatic increase in the seasonally linked decline of the ozone layer over Antarctica.

"It appears that an 'ozone hole' opens every August, reaching a maximum depletion of nearly 40% of the global level, before closing again in November. The result is that springtime UV-B levels have almost doubled over the last decade.

These observations have ominous implications and preliminary experiments have indicated that even slight increases in ultraviolet light can dramatically reduce the potential productivity of Antarctic phytoplankton, the base of one of the ocean's most important food chains," Mr Miller said.

As a result, due cognisance was taken of the potential consequences of this effect at the recent Sixth Annual meeting of CCAMLR held in Hobart, Tasmania during November 1987.

At the meeting the 19 member nations of CCAMLR recognized the seriousness of Antarctic and global ozone depletion and agreed that every effort should be made to implement the 1985 Vienna Convention for the Protection of the Ozone Layer, as modified by its 1987 protocol.

Press Release from
Dept. Environment Affairs

VACANCY : ORNITHOLOGIST

A vacancy exists for an ornithologist, with a minimum of a BSc Hons degree in Zoology, at sub-Antarctic Marion Island on a four-year project entitled:

"The breeding cycle of the King Penguin at Marion Island"

The post is available for immediate filling. The ship sails for Marion Island on 25 August. The successful candidate will need to spend a minimum of one year on the island and return for shorter periods afterwards.

A salary of up to R18 299 per annum (depending on qualifications and relevant experience) plus VSB and an expedition bonus of R2 500 per annum pro rata is offered. Opportunity exists to use the results of the project towards a higher degree.

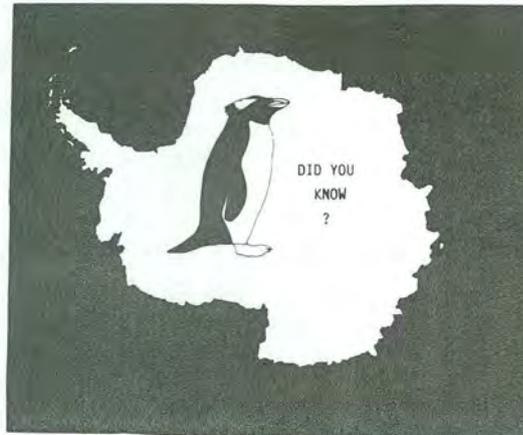
All amenities at Marion Island (accommodation, transport to and from, board, medical aid, recreation, protective clothing, regular radio/telex communications with South Africa) are provided free of charge.

Appointment will be dependent on passing medical and psychological tests set by the Department of Environment Affairs.

Write as soon as possible with a detailed *curriculum vitae* and names and addresses of two referees, to:

John Cooper
Antarctic Officer
Percy FitzPatrick Institute of African Ornithology
University of Cape Town
RONDEBOSCH 7700

Telephone (021) 650 3294



1. **Mnr Frank Anderson**, gewese Hoofdirekteur van die WNNR se Nasionale Navorsingsinstituut vir Oseanologie (NNO), het aan die einde van 1987 afgetree. In die nuwe bedeling van die WNNR val die funksies van NNO voortaan onder die Divisie vir Aard-, Mariene en Atmosferiese Wetenskap en Tegnologie, Direkteur: Dr Jan van Zijl. Baie dankie aan mnr Anderson vir sy reuse bydrae tot die aktiwiteite van die SAWKAN-program deur die jare - ons wens hom graag 'n rustige aftrede toe.

2. Dr Louis Botha has been appointed Director of the Sea Fisheries Research Institute with effect from 1 February 1988. He succeeds Mr George H Stander who retired on pension. We wish Dr Botha every success in his new post. In taking leave of Mr Stander and in wishing him a happy retirement, we also recall with thanks and recognition his many contributions to Southern Ocean science over a period of some 30 years. It is gratifying to learn, however, that Mr Stander will remain with the Institute in a temporary capacity as a special adviser, where his experience and skills will still be available. Mr G de Villiers succeeds Dr Botha as Deputy Director of the Institute; to him also our congratulations and success in his new post.

SASCAR Office

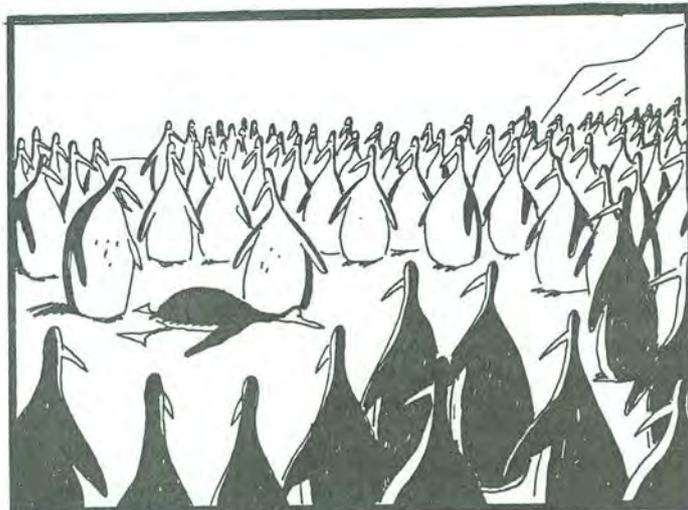
LIMERICKS

Our friend *Felis catus* on Marion
reduced certain bird life to carrion.
They gave him the flu,
fired a pot shot or two,
but still he's determined to tarry-on.

Someone sighted a rat on Gough
which proved incredibly tough.
He refused to dally
with a female rat rally,
so the researchers gave up in a huff

Contributions from our readers, for inclusion in forthcoming SASCAR Newsletters, would be most welcome.

Secretary, SASCAR Office



"He's dead, all right — beaked in the back . . . and, you know, this won't be easy to solve."

TRISTAN DA CUNHA ASSOCIATION

Please complete and return this form to:

Mr M K Swales
Tristan Resource Centre
Denstone College
Uttoxeter
Staffordshire ST14 5HN
United Kingdom

- *1. Please renew my subscription to enrol me as a member of the Tristan da Cunha Association
- *2. My class of membership is Ordinary (minimum £5)
Family (£10)
Corporate (minimum £10)
Tristan Islander (voluntary sub. only).
- *3. I enclose cheque/money order/bank draft to the value of £**
made payable to the TRISTAN DA CUNHA ASSOCIATION. All subscribers will receive the Tristan Newsletter.
- 4. Please check my name and address is correct on your mailing list as below (please use BLOCK CAPITALS):

NAME

ADDRESS

.....

.....

.....

Post Code

Telephone

- 5. Please add the name and addresses below of any other persons you think may be interested in joining the Association.

* Delete as applicable.

** Overseas members please note that allowance should be made for the fact that banks make a handling charge for cheques in addition to applying the relevant exchange rate to those not made out in £ sterling. An International Money Order made out in £ sterling is thus the only way of ensuring the Association gets the full amount intended.