BROKKIES EN GEBEURE — GROWLERS AND HOWLERS

'n Gedugte hengelkompetisie woed tussen Marion en Gough. In Junie het die Marionette berig: „Die manne hier het alreeds probeer visvang maar ongelukkig was die pogings nie juis 'n sukses nie. Ons beny julle mense daar op Gough waar 'n mens omtrent drie keer per dag vars vis kan eet." Trouens onlangs het Steve Visagie van Gough berig dat hulle vang hulle dik aan kreef, blouvis, kapewers (bietjie draderig om te eet) en vyfvingers van 3 pd. in gewig. Geen wonder dat die Marionette *brand* van begeerte om na Gough te verkas nie!

Verder berig Marion van baie muise en dat dit lyk of man en muis nou letterlik saam woon in die huis. Die muise het hulle intrek in die huis geneem, waar hulle doodluiters rondstap en ook nogal lekkerbekkig is. *Vurige* pogings word aangewend om die muislus te blus.

Meimaand het storms en reën op Gough gebring. „Ons geniet nog besondere goeie weer. Aan die einde van die maand het dit begin reent maar die temperatuur bly lekker warm. Die hoogste daaglikse reënval was 71 mm. met 'n totaal van 225 mm. vir die maand. Op die 26ste het 'n kwaai storm vanuit die suidooste opgekom teen 'n windspoed van 60 m.p.u. Die see was baie rof en het die landingsplatform afgespoel. Kort daarna het die preekstoel die stof gebyt. Dit moes 'n geweldige golf gewees het aangesien die preekstoel 70 voet bo die water teen die kranse is en nou so plat soos 'n pannekoek daar uitsien."

Junie het onverwyld die voorbeeld van Mei gevolg. Baie reent en snaakse winde. „Die probleem is nie om die weerballon in die lug te kry nie, maar as dit eers daar is, kan enige ding daarmee gebeur. Wanneer die ballon in so 'n snaakse windstroming beland speel die radiosonde sommer yo-yo bo-oor die ballon en vou die windmeul daarvan sommer soos papier op, die draad ruk af en die instrument plons daar kort anderkant die kuslyn in die water. Dan moet die manne maar weer gaan mooipraat met die waterstofbom vir 'n ekstra teugie waterstof om weer die dag se pogings van meet af aan te begin."

By SANAE was daar tandmoeilikheid—omdat die medikus self die pasiënt was. Weens 'n wortelabses moes sy tand verwyder word. „Sulke tye tree die werktuigkundige as tandarts op, miskien juis omdat hy uit die aard van sy werk weet hoe om 'n tang te hanteer. By hierdie geleentheid het Henry Fulton hom meesterlik, dog nie sonder professionele teenkanting van sy kant af, van sy vreemde taak gekwyt en die tand pynloos en suksesvol verwyder,"

Die son het na twee maande weer sy verskyning kort voor die einde van Julie gemaak. Die manne, belaai met waarnemings- en wetenskaplike werk, naslaan en opskrywe, het die winter geniet. Die temperatuur het af en toe kort duskant minus 50 sentigrade omgedraai en die wind so amper 90 knope gehaal.

SANAE—KEY TO A SPACE RESEARCH PUZZLE

(*Continued from Page 5*)

evidence that the electrons precipiated from the outer radiation belt came as low as 50 miles above Sanae. This was the first time that anyone had proved that electron bombardment produces such ionospheric effects, except during auroras. Our paper about it, which I read at the International Space Research Symposium in Argentina last year, was very well received and several of the experts commented that it looked as if we were on to something important.

Our research group had meanwhile been joined by another M.Sc. student, Marsha Harding. During 1965 she and Doug. Torr worked hard at our new discovery. Now that we knew what to look for the pieces of the puzzle began to fit together. They were able to show that similar ionospheric disturbances to those at Sanae occurred at other places beneath the outer radiation belt also: Campbell Island, south of New Zealand; Halley Bay, not far from Sanae; and Winnipeg, Ottawa and St. Johns in Canada. And in every case when *Alouette* observed electrons being precipitated at one of those places, one of the ionospheric disturbances was in progress. The disturbances were much less frequent at those other places, because they do not lie near the South Radiation Anomaly. But when they did occur, they were unmistakable.

Ever since the ionosphere had been studied systematically it has been observed that, while the E and F1 layers are very predictable in their behaviour, changing in a regular manner each day, the F2 layer is quite different. One day it will build up an enormous concentration of electrons about noon, the next it will have very few, perhaps reaching a maximum before 10 a.m. and then falling off again, or building up much more slowly than usual and then suddenly shooting up towards evening. One day it will have its greatest concentration of electrons at a height of 180 miles, the next at 300 miles. It varies erratically from one hour to another. Many suggestions have been put forward, but none has gained general acceptance. Could it be, we asked ourselves, that this erratic behaviour was caused by the dumping into the F2 region of electrons from the radiation belts?

This is a much more difficult question to answer, because we do not have a satellite overhead at each ionosphere station 24 hours a day to watch for incoming electrons. Nor can we afford to fire rockets at 15-minute intervals to heights of 100 miles or more to look for the bombarding electrons every time our ionosonde takes a recording. What Marsha Harding and Doug. Torr did was this. They took a lot of two-hour periods chosen at random at each of the ionosphere stations I have already mentioned, and they classified them as "disturbed" or "quiet" according to the knowledge they had gained in the preliminary study. Then they worked out, for each station, the percentage of the total time for which the ionosphere was disturbed. Then they looked up, from the *Alouette* recordings, the percentage of the total time for which the number of electrons precipitated per second at each station exceeded the limit known to produce a disturbance from the preliminary study. The results were astonishing. In every case the two figures were very close to each other. Thus there could be little doubt that electron bombardment did take place exactly often enough to account for the disturbances. We have written this up for publication and we are confident that it will prove to be the key to the puzzle of the odd behaviour of the F2 region. Had we not gone to Sanae, we would never have found it, for Sanae is the place with the most disturbances of any from which ionosphere records are available.

Marsha Harding went on to show that the electron population observed in the outer radiation belt by various satellites can be accounted for if there is a constant leakage of electrons from outer space into the belt all the way round the earth. This theory is simple to work with and seems to give better answers than more complicated ones worked out by others.

In conclusion, then, we seem to have been extremely lucky to have settled on Sanae as our base, for ionospheric work in particular.

J. G. I. & S. 0931 8/66