

Geomagnetism and Aurora Programme in Antarctica

The Aurora Programme

At present this programme consists of an all-sky camera recording of aurorae, supplemented by visual observations. From 1960 to 1963 the recordings were made by means of a Stoffregen all-sky camera of 16-mm black and white film. This camera was obtained from the Norwegian Antarctic expedition when the first South African Antarctic Expedition took over Norway Station (70° 30'S, 02° 32'W geographic; -63,9°, 43,8°E geomagnetic). The camera was later transferred to Sanae Base (70° 18'S, 02° 22'W geographic; -63,6°, 43,9°E geomagnetic) when Norway Station was abandoned.

In 1964 a SCAR-type all-sky camera was put into operation at the Sanae Base. This camera is still in operation and makes recordings on 35-mm black and white film. The camera normally runs on a 15-minute programme, in which a sequence of four exposures of 10 secs., 2½ secs., 40 secs., and 10 secs. duration are made every 15 minutes. This sequence takes up the first three minutes of every 15-minute period. When active forms are observed in the aurora, the camera is switched to a 1-minute programme in which the above sequence of exposures is supplemented by a 10-seconds exposure once every minute for the remainder of the 15-minute period.

The records are analysed and tabulated as hourly auroral plots.

Review —

Quaternary Studies of the Antarctic

"The study of the palaeoecology of the Antarctic region is of paramount importance for our understanding of the age, origin and ecology of the present-day flora and fauna of that region. Such study is also essential for an explanation of the Quaternary palaeoclimates of the Southern hemisphere in general." With these sentences Dr G. de Q. Robin, secretary of the Scientific Committee on Antarctic Research (SCAR) introduces his foreword to the proceedings of a conference on *Quaternary Studies of the Antarctic* which was held in Cambridge (England) from 24-27 July

The Magnetic Programme

This programme was also taken over from the Norwegian Antarctic Expedition in 1960, and later transferred to Sanae.

Continuous recording of the magnetic field elements H, Z, and D is done on a La Cour storm magnetograph and on a 3-Axis Kelvin Hughes Fluxgate magnetometer. The recording speed of the La Cour magnetograph is 12mm per hour and the sensitivity of the instrument is of the order of 3,5γ per mm for D, 18γ per mm for H and 22γ per mm for Z. The fluxgate records are used to supplement incomplete La Cour records.

Absolute observations of the magnetic elements are made regularly to maintain base-line control and to establish the secular-change rates of the magnetic field elements. The instruments which are at present used for the absolute observations are:

1. quartz horizontal-force magnetometers (QHM) for determining the horizontal intensity and declination;
2. a magnetometric zero balance (BMZ) for determining the vertical intensity;
3. a fibre declinometer for determining the declination; and
4. an Elsec proton precession magnetometer for determining the total field intensity.

Whenever conditions at the base permit, absolute observations are made at a number of established field stations in the vicinity of Sanae, and also along routes taken by the geological field parties. This is done with the object of obtaining data for the determination of secular changes.

G. J. Kühn

Potchefstroom University

1968. This conference was organized on the initiative of Prof. E. M. van Zinderen Bakker Sr, with the approval of the SCAR Working Group on Biology and the financial support of SCAR.

Nine scientists from six different SCAR nations representing biogeography, climatology, geology, glaciology, micropalaeontology and oceanography held a very successful meeting at which eleven review papers in different fields were presented and discussed. The collection of material was of such general interest that it was decided to publish the complete proceedings and discussions. The financial assistance of the South African Council for Scientific and Industrial Research made it possible for the proceedings to be published in a special volume (no. 5) of the sequence *Palaeoecology of Africa and the Antarctic*.

This issue, published in 1969, can be obtained from Messrs A. A. Balkema, P.O. Box 3117, Cape Town, at R6.00.