ice depths were calculated. *Bentley & Clough* (1970) estimated that ice depths calculated from seismic wave velocities based on seismic refraction measurements at the surface are approximately 2 per cent less than those calculated from seismic wave velocities which take ice crystal anisotropy into account.

It is worth noting that the maximum ice depth measured was 1 700 m and that continuous recording of bedrock echoes could be obtained only when the ice depth was less than about 1 500 m. This limited performance of the radio echo sounder was probably due, in part, to a large absorption of the radio waves by the ice. (Ice temperatures at depths of 10 m range from −15°C to −25°C in this area, and on this basis the absorption is expected to be approximately 2 db per 100 m.)

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Meetings during 1972

SYMPOSIUM ON ANTARCTIC UPPER ATMOSPHERE PHYSICS HELD AT CSIR, PRETORIA, ON 17-18 MARCH, 1972

Review and Projection of Upper Atmosphere Physics Programmes:

Ionosphere (i) Sanae *J. A. Gledhill*
Ionosphere (ii) Marion Island *R. W. Vice*
Cosmic Rays *P. H. Stoker*
Whistlers/Micropulsations *N. D. Clarence*
Aurora and Geomagnetism *G. J. Kühn*
Airglow *P. B. Zeeman*

Particle Precipitation (Open and Closed Field Lines)
Die moontlikheid om vasgevange presipiterende deeltjies in die Kaapse Stralingsanomalie met behulp van 'n NaI-kristal waar te neem op ballonhoogte (The possible detection of charged particles at balloon altitudes in the Southern Radiation Anomaly by using an NaI crystal) *P. J. König, Potchefstroom University*

Nighttime ionization enhancements at Sanae *M. R. Torr, NITR, CSIR*

Problems in explaining the behaviour of the ionospheric F-1 layer *D. G. Torr, NITR, CSIR*
Electron production due to precipitated electrons in various model atmospheres *A. Wulff, Rhodes University*

Magnetospheric electrons observed to the west of Sanae *J. G. Greener, Rhodes University*

Die tydelike verband tussen magnetiese en luggloed aktiwiteite (The temperal relationship between magnetic and airglow intensities) *P. B. Zeeman, University of Stellenbosch*

Presipitasie soos waargeneem met die riometer (Precipitation as observed with the riometer) *G. J. Kühn, Potchefstroom University*

Magnetic Effects and Micropulsations (Open and Closed Field Lines)
Magnetiese Sq-variasie te Sanae (Magnetic Sq variation at Sanae) *G. J. Kühn, Potchefstroom University*
Fase-omkering van dagvariasie in Z-komponent van magneetveld te Marion (Phase reversal in the diurnal variation in the Z component of the magnetic field at Marion Island) *G. J. Kühn, Potchefstroom University*
Whistlers and Micropulsations *N. D. Clarence and A. Woods, University of Natal*

Solar Effects
Die invloed van sonaktiwiteit op die resultate verkry deur 'n geiger ballonpakkie op Sanae (The influence of solar activity on the results obtained from a balloon-borne geiger counter payload at Sanae) *P. J. König, Potchefstroom University*
Waarneming op protonvlam van 24 Januarie 1971 (Observation of the proton flare of 24 January, 1971) *H. Moraal, Potchefstroom University*

Modulasie van kosmiese strale vanaf 1963 tot 1970 met behulp van die neutronmonitor op die *RSA* (Observations of the modulation of cosmic rays from 1963 to 1970 using the neutron monitor on the *RSA*) *P. H. Stoker, Potchefstroom University*
Solar control of F2 ionization in the Antarctic *M. H. Williams, Rhodes University*

Morphology
A critical examination of the wind theory of Antarctic foF2 behaviour *M. H. Williams, Rhodes University*
Luggloed intensiteite te Stellenbosch en Sanae (Air-

glow intensities at Stellenbosch and Sanae) *P. B. Zeeman, University of Stellenbosch*

General Discussion

Factors of common interest to the individual programmes

SYMPOSIUM ON ANTARCTIC BIOLOGY AND MONITORING HELD AT CSIR, PRETORIA, ON 17-18 MARCH, 1972

Antarctic Biology

Ecology and aims of botanical research on Marion, Prince Edward and Gough Islands *E. M. van Zinderen Bakker, University of the O.F.S.*

Priorities in oceanographic and marine biological research in the southern oceans *J. H. Day, University of Cape Town*

Possibilities for researcl on marine mammals in the Antarctic and sub-Antarctic *P. B. Best, Division of Sea Fisheries*

Possibilities for research on birds in the Antarctic and sub-Antarctic *W. R. Siegfried, University of Cape Town*

Global Monitoring (Atmosphere)

Atmospheric pollution and the aims of environmental monitoring *E. C. Halliday, APRG, CSIR*

Suggestions for the establishment of a Baseline Station on Marion or Gough Island *C. W. Louw, APRG, CSIR*

Atmospheric circulation in the sub-Antarctic area and interpretation of monitoring results *J. J. Taljaard, Weather Bureau*

Practical experience in running weather stations on the sub-Antarctic islands *S. A. Engelbrecht, Weather Bureau*

Global Monitoring (Marine and Terrestrial)

Aims of environmental monitoring in marine and terrestrial ecosystems *C. A. du Toit, University of Stellenbosch*

Circulation patterns in the southern oceans and the transport of pollutants *L. V. Shannon, Division of Sea Fisheries*

Pollution of marine and terrestrial ecosystems from the atmosphere *E. C. Halliday, APRG, CSIR*

Suggestions for a marine monitoring programme in the southern oceans *A. E. F. Heydorn, Oceanographic Research Institute*

Suggestions for a terrestrial or freshwater monitoring programme on Marion or Gough Island *G. N. Louw, University of Stellenbosch*

South African Representation at International Meetings

15TH COSPAR MEETING HELD AT MADRID, MAY 1972

Dr F. J. Hewitt represented both South Africa and SCAR at this Meeting

SCAR SYMPOSIUM ON SCIENTIFIC PROBLEMS OF TELECOMMUNICATION IN THE ANTARCTIC HELD AT OSLO, MAY 1972

Mr I. H. Lloyd of the Weather Bureau attended this meeting.

SCAR XII HELD AT CANBERRA, AUGUST 1972

Mr D. G. Kingwill (on behalf of Dr F. J. Hewitt) represented South Africa at this Meeting. Dr F. J. Hewitt and Mr B. P. Lambert were appointed to co-ordinate participation by SCAR in the 16th COSPAR Meeting. SCAR is interested in approaches to earth survey problems through the use of space survey techniques. Mr C. J. J. van Rensburg attended the session of the Working Group on Logistics, and Prof. E. M. van Zinderen Bakker attended the sessions of the Working Group on Biology. Concurrently with the SCAR Meeting the Second Conference on Quaternary Studies of the Antarctic was held. This Conference was convened by Prof. E. M. van Zinderen Bakker.