

Conclusions

A study of temperature and pressure at Norway Station/Sanae shows several features which are not unique to this part of Antarctica and for which the explanations are not apparent. These are: 1) the deceleration or reversal of the summer to winter rate of drop in temperature during May and/or June; 2) the pronounced semi-annual oscillation of the atmospheric pressure over Antarctica, and 3) the pronounced, sustained rise in annual mean temperature from 1971 to 1975.

These phenomena ought to be studied for the whole of

Antarctica and surrounding oceans in order to arrive at a complete description of the events and perhaps to find their explanations as well as the implications for middle and low-latitude weather.

References

- South African Weather Bureau. Monthly mean temperature and sea-level pressure at Norway Station and Sanae since 1960. *S. Afr. J. Antarc. Res.*, **1**, 33, 1971.
- Burdecki, F. The climate of Sanae, Part I: Temperature, wind and sea-level pressure. *Notos*, **18**, 4-58, 1969.

Report on South African participation in cruise MD08 of MS Marion Dufresne, March—April 1976

P.G.H. Frost

Percy FitzPatrick Institute, University of Cape Town,
Private Bag, Rondebosch, 7700.

J.R. Grindley

School of Environmental Studies,
University of Cape Town.

T.H. Wooldridge

Department of Zoology, University of Port Elizabeth,
P.O. Box 1600, Port Elizabeth, 6000.

Introduction

The Administration of Le Terroire des Terres Australes et Antarctiques Françaises (TAAF), through SASCAR, invited our participation in their scientific programme during cruise MD08 of the *Marion Dufresne*. The total complement of scientists and technicians was 23, 15 from France, 3 each from South Africa and the United States, and one each from Portugal and Canada. Cruise MD08 lasted from 8 March to 26 April 1976. Details of the course, station locations and local noon positions of the *Marion Dufresne* during the cruise are given in Fig. 1. This report summarises the nature and extent of the South African contribution to the joint research programme, which was an investigation of the fauna around the Crozet Archipelago and the Prince Edward islands, and observations on the distribution and abundance of seabirds in the south-western sector of the Indian Ocean.

Studies of zooplankton and the marine benthos

(J. R. Grindley and T. H. Wooldridge)

Zooplankton samples were collected at 23 stations during MD08, with a 50-cm diameter WP II net hauled vertically

from 300 m to the surface at a speed of about one metre per second. At depths of less than 300 m, the hauls were made from about 10 m above the bottom to the surface. Nine samples were taken at stations 1-8 in the southern Indian Ocean between Reunion and the Subtropical Convergence at about 40°S. These samples are being studied at the Plankton Sorting Centre, Washington, D.C. One sample was collected at station 9, off Possession Island, Crozets, and 13 samples were collected at different stations in the vicinity of the Prince Edward islands. These latter samples, including the Crozet sample for comparison, are being sorted and studied at the University of Cape Town.

In a preliminary examination of the samples taken around Marion and Prince Edward, the following groups were observed: Copepoda (including the Antarctic species *Calanus propinquus*, *Calanoides acutus*, *Rhincalanus gigas* and *Oithona frigida*), copepod nauplius larvae, Ostracoda, Euphausacea (including juvenile stages), polychaete larvae, gasteropod larvae, lamellibranch larvae, diatoms, Radiolaria, Foraminifera, Dinoflagellata, Oikopleura, Chaetognatha, medusae, eggs and algal detritus. Some samples included large amounts of phytoplankton including *Chaetoceros flexuosus*, *C. neg-*