

ROYAL METEOROLOGICAL SOCIETY: AUSTRALIAN BRANCH MEETING

27 March 1980

The Meteorology Department of the University of Melbourne

Professor W. F. Budd

The talk commenced with the Royal Meteorological Society Chairman, Mr R.H. Clarke, welcoming Professor Budd and congratulating him on his appointment as the first Professor of Meteorology at the University of Melbourne.

Professor Budd began with an historical account of his department since its inception with a solitary academic staff member in 1936, to the present level of six with six support staff. The quality of the staff members, especially such people as Fritz Loewe and Uwe Radok, was considered by the speaker as an essential feature of both the colour and continued success of the department.

Student courses were then described. At present meteorology can make up to 50 per cent of the B.Sc. degree, this being extended to full-time study in the fourth year. A range of options for full-time, part-time and external participation in post graduate degrees is also available. To date 45 M.Sc., 15 Ph.D and 2 D.Sc. degrees have originated from the department covering an exceedingly wide range of subjects. As an illustration, Ph.D topics have included aspects of numerical modelling, the quasi-biennial oscillation, remote turbulence detection, studies of plant growth, boundary layer meteorology and radiative transfer mechanisms.

The wide range of current departmental research activities was generally classified as: long and short term climate studies, numerical modelling, synoptic climatology, instrumentation and urban meteorology, micro-meteorology, and atmospheric modelling. Some results from current projects were then presented. From the urban meteorological program pollutant tracks around Melbourne derived from surface wind observations were shown. The climate program results included relationships between northwestern Australian sea surface temperature anomalies and Victorian rainfall, and a climatology of anticyclonic and cyclonic system and sea ice extent. The difficulties in resolving the effect of CO₂ concentration upon atmospheric temperature and sea ice coverage were also discussed and some evidence of a recent atmospheric warming was presented.

The remainder of the talk was devoted to the description of a glaciology model developed to study ice sheet movement in North America over the past 120 000 years. Included in the model were representations of

the continental topography, radiation variations, precipitation distributions and elevation and latitude dependent ablation rates. The model was able to reproduce known characteristics of the ice movement and when run forward predicted another ice maximum in 7000 years time. Professor Budd emphasised the importance of feedback effects between ice cover albedo and radiation variations in controlling the overall development.

In answering a question on the value of the glaciology model in other regions, the speaker stated that the model could be applied once the new bedrock and precipitation distributions had been digitised for input to the model. On the development of MOS systems and the future direction of meteorology within his department, Professor Budd considered that it was essential to make better use of new technology, having access to satellite data, in-line computer facilities and the mesoscale observational network. The objectives of meteorological training were then briefly discussed. The view put was that the university should continue to offer a wide range of basic training with some avenues for research, while the Bureau of Meteorology could possibly concentrate on training for operational needs.

T.K.