

R E P L Y

by A. Garriock

Central Meteorological Bureau, Melbourne

25th November 1955

This suggested analysis meets all the observational data, and is better than mine in respect to the sequence at Amsterdam Island. The origin of the warm front occlusion postulated by Mr. Clarke is however not explained.

JOINT COLLOQUIA

On the 3rd November Professor P.A. Sheppard of the Department of Meteorology, Imperial College, London delivered a lecture on "The General Circulation of the Atmosphere" and on the 15th December he spoke on "The Department of Meteorology, Imperial College, London." Summaries of his two talks are given below.

The General Circulation of the Atmosphere

The general circulation is defined as the mean value of the zonal (east-west), meridional (north-south) and vertical motion of the atmosphere as a function of latitude and height, the means round latitude circles being taken over time intervals of order a season. Associated with the mean motion so defined there is a field of turbulence extending in scale from the energy - dissipating motions of order a centimetre up to the largest scale disturbances commonly referred to as long waves in the westerlies.

The broad features of the latitude, height distribution of zonal motion in the troposphere and lower stratosphere are reasonably well defined - surface easterlies and westerlies; upper westerlies with the sub-tropical jet stream - but the pattern and intensity of meridional and vertical motion remain to be determined except in lower latitudes where there is equatorward motion below and poleward flow aloft, no net meridional flow occurring across any latitude circle. The important problem posed is to determine how the observed pattern of mean zonal motion is self-maintaining in the presence of the other components of mean motion and of the associated fields of turbulence. The dynamics must be related with the thermodynamics and with the field of radiation, solar and terrestrial. The system is one of multiple feed-back, but at the expense of some over-simplification it may be inferred that radiation,