

JOINT COLLOQUIA

17 April, 1958

Erratum

A summary of this colloquium was given in the preceding (June) issue of the Australian Meteorological Magazine. However, Dr. Schwerdtfeger has pointed out that the studies of the semi-annual pressure oscillation were undertaken jointly by Dr. F. Prohaska and himself. This was indicated in the manuscript submitted to the Editor, but was omitted in error, giving the impression that Dr. Schwerdtfeger alone was the author of the studies referred to. The error is regretted and this statement is being made at Dr. Schwerdtfeger's request. Ed. (A.M.M.)

29 May, 1958

Time scales of oceanic circulation

by R.B. Montgomery

Professor Montgomery, who is Associate Professor of Oceanography from Baltimore, U.S.A., and at present a Fullbright Research Scholar at the C.S.I.R.O. Division of Meteorological Physics stated that the atomic age was providing results and raising questions in terms of the time involved in various branches of oceanic circulation and mixing, whereas previously oceanographers had concentrated their attention on velocity and flux.

Radiocarbon analysis of sea water had been used as a basis for estimating the time elapsed since the water was in equilibrium with atmospheric carbon dioxide. For instance, Brodie and Burling (Nature, London, 181, 107, 1958) had reported elapsed times of 2500 yr and 1900 yr for two samples of deep water taken south of New Zealand.

The ratio of distance to speed yielded time. As an example, the length of the Antarctic Circumpolar Current (10800 n mi) divided by the estimated geostrophic speed at the core (0.25 kt) gave 5 yr as the (minimum) time for a water particle to complete the circuit around Antarctica. Krummel (1911, p. 677) had mentioned a drift bottle that may have completed this circuit in 7 yr. As another example, Wüst (Deep-Sea Res., 1955) estimated 5.3 yr for the ice-cold bottom water to travel the length of the South Atlantic Ocean from the Weddell Sea to the equator.