

THE STRUCTURE AND CIRCULATION OF OXYGEN-POOR
WATER OFF QUEEN MAUD-ENDERBY LANDS,
ANTARCTICA (Abstract)

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The structure and circulation of deep water off Queen Maud-Enderby Lands are analyzed using maps showing the depth, temperature, salinity and dissolved-oxygen content on the 33-cl/t isanosteric surface south of 35°S. The 33-cl/t surface approximately coincides with the vertical dissolved-oxygen minimum which marks the deep water. The sources of the warm, saline and oxygen-poor deep water are in the eastern South Pacific Ocean and in the western Indian Ocean. The cyclonic Antarctic Circumpolar Current takes largely part in the movement of both the ocean waters to the area of study. The Circumpolar Current which flows east with the eastern South Pacific Deep Water is largely deflected southward in a region between 30 and 40°E, probably because of the intrusion of the North Indian Deep Water flowing south along the east coast of Africa. Although part of the Circumpolar Current subsequently returns eastward, the remainder further flows south along a meridian of about 30°E, entraining some of the North Indian Deep Water. The southward flowing water, which is a mixture of the above two deep waters, advects into the area of study as a supply of upwelling which persistently occurs there because of the stay of highly developed atmospheric cyclones throughout the year.

(Received April 11, 1985)