

No. 796

A Science Service Feature

Nov. 28

? WHY THE WEATHER ?

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OCEAN TEMPERATURES ACROSS EQUATOR

Land temperatures are highest near the equator, of course; one might expect the oceans also to be warmest in the equatorial region. Yet a cross section of the North and South Atlantic shows a rather curious temperature distribution. Except near the surface, the water is warmer between latitude 20 and 30, both north and south, than at the equator. Dr. W. J. Humphreys of the Weather Bureau points out that "at every depth from 50 to 1000 meters the equatorial water is approximately 5 degrees Centigrade colder than the warmest water at that level both north and south". The reason for this difference seems to be an upwelling at the equator, and a sinking of surface water at about latitude 30. Everywhere the ocean is colder below than at the surface. A rising current therefore brings up cool water, and a downward motion carries down warmer. At the equator it is cloudy and rainy much of the time, the surface water becomes somewhat diluted and less salt, while at 30 degrees north it is relatively clear, evaporation exceeds precipitation and saltiness increases. This favors sinking of surface water at 30 degrees and upwelling at the equator. The wind systems which draw water away from the equator and pile it up at latitude 30 have a similar effect.

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