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A Simple Demonstration of the Maximum Density of Water

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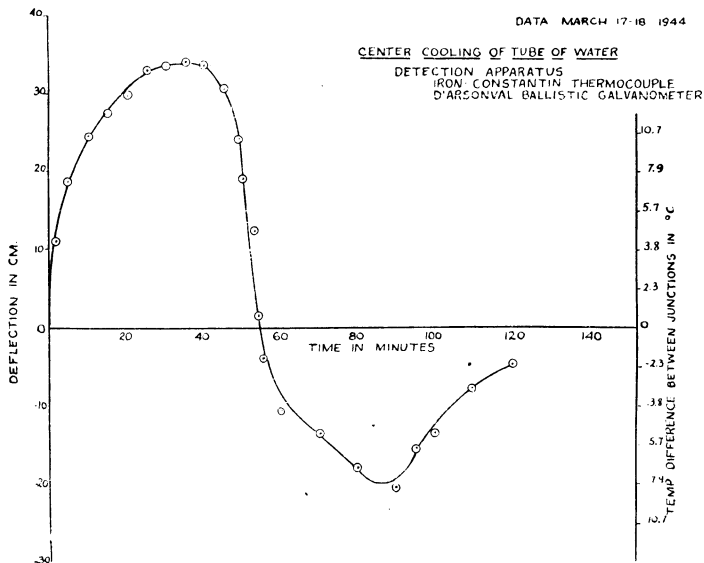
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A SIMPLE DEMONSTRATION OF THE MAXIMUM DENSITY OF WATER

GRANT O. GALE

The usual Hope apparatus was used with thermo-junctions of iron and constantan replacing the thermometers. The advantage of this method over thermometers is apparent for demonstration purposes as the students can actually watch the temperature change by observing the deflection of a reflecting type galvanometer. The accompanying graph shows the deflection plotted against time. Be-



ginning with tap water, the warm water rises. As the temperature drops due to the ice pack, the top and bottom temperatures come to the same temperature. At this point the thermo-electric current reverses, indicating that the top junction is colder. For demonstration purposes, it is sufficient to observe deflections, the galvanometer and couple could be calibrated in degrees difference of temperature. These data were taken by Miss Gerry Ross, a major student in the Department.

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