The importance of viscosity of water has not hitherto been considered in relation to lake temperatures, but it is a well-established fact that the viscosity of water at 25° C. is only about one-half that of water at 0° C. Biologists have recognised the importance of this in regulating the forms and disposition of plankton animals. It seems likely that this change of viscosity with temperature is equally important in the circulation of lakes. Whenever there is a discontinuity in temperature there is a mobile liquid resting on a relatively viscous liquid. The tendency of this must be to confine wind-produced currents to water above the discontinuity, and so to strengthen the effect of the difference in density between the upper and lower layers of water. The difference in viscosity may, in fact, be as important as the difference in density in determining the circulation.

While we are in the region of speculation, I may be permitted further to suggest that there is an analogy between the temperature seiche in lakes and the movements in the upper air. There again we have two layers of different density one above the other, and the rapid changes in temperature at great heights may be due to causes similar to those which produce large variations of temperature in the neighbourhood of the discontinuity layer in lakes.

BIBLIOGRAPHY

The following is a list of papers dealing with the fresh-water lakes of Scotland. There is also a considerable literature dealing with salt-water lakes, but as the conditions in salt-water basins are quite different from the conditions in fresh-water basins, I have restricted the bibliography to the fresh-water lakes. The chief contributions to the study of the temperature of salt-water basins have been made by Sir John Murray and Dr H. R. Mill.

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