Jain Laboratory Instruments

Product Code . JL-H-8013

Hopes Law Apparatus

Description

Hopes Law Apparatus

In winter, ponds and lakes are cooled from above.

Designed to show that water has a maximum density at 4°C.

Convection then occurs throughout until a dense layer of water at 4°C forms on the bottom.

The water above continues to cool until it freezes, then the ice provides an insulating layer that keeps the denser water beneath from cooliing as quickly The comparatively warm layer on the bottom enables aquatic life to survive.

Were water not to have its maximum density at a temperature above its freezing point, then ponds and lakes would freeze throughout and, because heat conduction between air and ice is such a slow process, possibly fail to thaw even during the summer months.