## A SIMPLE APPARATUS FOR MEASURING EVAPORATION RATE

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A simple apparatus has been designed for evaporation rate from natural water surfaces under calm or windy conditions. A special feature of the apparatus is the provision of a spiral tube to damp the effect of ripples or waves.

The control of evaporation loss from water surface has received wide attention<sup>1</sup> and various types of evaporimeters have been developed for measuring evaporation rates. In the standard Pan Type Evaporimeter<sup>2</sup>, the rate of loss is measured by means of a centrally fixed gauge. Spherometers have also been used for reading evaporation rate after damping the ripples; for the latter purpose, water from the main pan is carried to a smaller pan and tube<sup>3</sup>.

Chaudhuri and Bhati<sup>4</sup> recorded evaporation also from circular glass troughs (dia. 30 cm) by means of a float needle moving freely up and down within a glass tube graduated

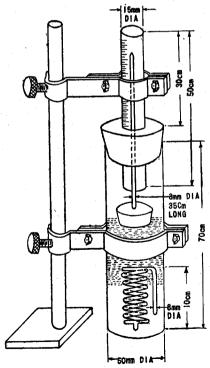


Fig. 1.—Spiral float for evaporation measurement.

in mm. The float needle system was, however, found to be unsuitable when evaporation experiments were conducted in aluminium pans<sup>2</sup> (4' dia., 10" height) and in specially constructed concrete tanks  $(20' \times 10' \times 5')$ . It was observed that the ripple effect becomes pronounced when the expanse of water surface increased, and the simple float system had, therefore, to be discarded. It was found that the ripples could be damped before reaching the float by using a spiral float system. An evaporimeter, incorporating a spiral float, has since been developed.

The apparatus consists of a spiral glass tube (dia. 8 mm) having one end fixed to the bottom of a cylindrical glass tube (dia. 50 mm); the other end is bent vertically downwards so that its tip lies at about 1.5 cm from the bottom of the cylinder. The float needle consists of an aluminium pointer (dia. 3 mm, length 55 cm), having one end embedded in a velvet cork (dia. 35 mm) soaked in lacquer. The needle enters a narrow glass tube (fitted to the main cylinder), on the exterior of which is pasted a mm graph paper. The complete assembly can be dipped to the desired level in a concrete tank or in a natural reservoir. When the apparatus is dipped above the top level of the spiral tube, water enters through

the spiral and rises slowly into the main tube. The apparatus is rigidly fixed with clamps on a stand resting on a platform. The floating needle tip is set to zero. As water evaporates the needle moves downwards gradually.

The dimensions of the apparatus can be modified to suit any specific requirement. In natural reservoirs and for prolonged periods, the apparatus may be made of copper and a transparent, rigid, plastic graduated tube may be used. The velvet cork is to be replaced by a suitable copper float. This method of recording evaporation loss in natural reservoirs takes no account of seepage. The apparatus is being modified to make it an automatic recorder.

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