NOTE

AN AUTOMATIC WATERING SYSTEM FOR POT CULTURES

An automatic watering system that maintains a definite degree of saturation, unaffected by transpiration rates, is highly desirable in pot culture experiments which are used extensively for the investigation of the factors concerned in plant growth.

Sand or soil in a vertical tube having one end in contact with water becomes wet for a considerable distance above the level of the water. The moisture content at any point in the tube is a function of the distance above the water level and the particle size of the sand or soil. The water content of the sand or soil at any specific point along the length of the tube is affected by any change in the water level. The water system described in this paper operates on these principles.

The system consists essentially of an open tube, filled with sand, having one end extending into a water supply and the other in contact with the culture. For convenience in filling the tube, and elimination of air pockets, the tube is extended above the surface of the culture, and contact with the culture made through holes in the wall of the tube at a point near the bottom of the pot. Fig. 1 shows the assembly of the parts.

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FIG. 1.—Vertical tube method for the automatic control of the moisture content in sand cultures.

FIG. 2.—A modified U-tube.