Experimental blocks or cylinders have been made by casting hydrocal about similar electrode pairs. The electrodes in these cylinders are of copper and the leads are rubber-insulated electric cord. The inner electrode has dimensions of ½ by 1½ inches, the outer cylindrical electrode is 1 inch in diameter and 2½ inches long. Ordinary 14-mesh window screen was used to make the cylindrical electrodes. The completed cylinder is approximately 1¼ inches in diameter and 3½ inches long. The resistance of the cylinder at saturation is about 350 ohms, irrespective of whether the surrounding medium is water or air.

Some of these cylinders have been under field test for one season with favorable results. The results are no better or no worse than the results obtained from comparable installations of Bouyoucos and Mick blocks, consequently no claim can be made on the basis of present results of any marked improvement in resistance block design. The basis for the changed electrode design is, however, sound. Confinement of the conductance path to the space between the electrodes simplifies the procedures that are involved in critical testing of the blocks. Where a wide variety of conditions must be encountered in the field use of an instrument, the fewer the uncontrolled factors, the more reliable in general are the results obtained.

Since the inner electrode of the system is shielded by the outer electrode, only the outer can serve as a ground on alternating current bridges where one terminal is maintained at ground potential.—C. S. Slater, Soil Conservation Service, Maryland Agricultural Experiment Station, College Park, Maryland.

A DIRECT WEIGHING METHOD FOR SEQUENT MEASUREMENTS OF SOIL MOISTURE UNDER FIELD CONDITIONS

A NUMBER of types of instruments have been devised during the last several years for repeated measurement of soil moisture in the field. All the instruments to date, with the exception of the tensiometer which is limited to readings of film tension during relatively wet conditions, approach the problem through use of a porous medium permanently imbedded in the soil. Use of an absorbent foreign material has been found to be a necessary essential in moisture-measurement methodology to enable the establishment of a stable and standardized zone within which to secure the measurements of moisture change.

Departure between methods has been concerned largely with principles and procedures in securing a measure of the amount of moisture in the medium. Electrical resistance, thermal conductance, and dielectric readings have been used as indices of the amount of this moisture. In many cases these values have been found to fluctuate with respect to certain other conditions in the soil environment, as well as moisture change, or to be a function of refinement in equipment design and operation, hence are not always related directly to the actual moisture in the soil.

3A commercial gypsum product.