Fig. 1—A diagram of the improved perfusion system. (1) air manifold; (2) air control capillary, 0.02 cm. I.D., 1 inch long; (3) liquid control capillary, 0.1 cm. I.D., 1 inch long; (4) tygon connector used to connect the upper part of the circulating system to soil tube head piece inlet; (5) ball joint 50/30; (6) air exhaust; (7) ST joint, 29/42; (8) tygon connector, connects lower part of the circulating system to the liquid reservoir outlet; (9) soil tube, 45 mm. O.D.; (10) coarse porosity fritted glass disk, 40 mm. diam.; (11) access to liquid in reservoir, ST 14/20 joint with penny head; (12) liquid reservoir, 50 mm. O.D., approximate volume 400 ml. (I.D. = inside diameter; O.D. = outside diameter.)

Where required, the slaking of most soils is prevented by placing a small piece of glass wool above the soil sample and by pretreating the soil sample with (formulation CRD-186). After thoroughly addition of krilium, when approximately the lower plastic limit, pushed through a four sieve and allowed to dry at room temperature before placed in the soil tube. No effect of krilium on microbial activity has been noted.

Twenty-four sets of this apparatus have been in continuous operation since November 1955 for the study of nitrification, nitrogen losses from soils, inhibition of nitrification, and solubilities of soil minerals. Using a wide variety of soils were percolated, it has been virtually nonexistent and the required repairs minimal.

The apparatuses were constructed for us by Scientific Glass Apparatus Co., 100 Lakewood Terrace, Bloomfield, New Jersey.—L. G. Moll and J. E. Dawson, Associate and Professor of Soil Science, respectively, Dept. of Agronomy, New York State Coll. of Agr., Cornell Univ., Ithaca, New York.

VARIATION OF OPAL PHYTOLITH DATA AMONG SOME GREAT SOIL GROUPS IN ILLINOIS

Opal phytolith data are helpful in characterizing the vegetative history of Illinois soils. Beneficial trees of Illinois contribute a very important source of opal to the soil in contrast to the large areas of grassland and forest vegetation. Because the deciduous trees contribute a very important source of opal to the soil in contrast to the large areas of grassland and forest vegetation, Illinois authors have noted an excellent test of the dependence of soil opal content on vegetation type. Using data from Illinois soils, the authors have reported here was supported by funds from the National Science Foundation (G-16020).