The sampler illustrated in Figs. 1 and 2 was made from a 1\(\frac{3}{4}\) by 8 inch steel shaft. The first step was to drill a 1\(\frac{1}{4}\) inch hole through the center of the shaft. Next the bore was increased to 1\(\frac{1}{2}\) inches from the top to within \(\frac{3}{8}\) inch of the bottom of the tube. By means of a still larger drill the bore was then increased to 1\(\frac{3}{4}\) inches for a distance of 4\(\frac{3}{8}\) inches from the top of the tube. The outside walls were then turned down to the dimensions shown in Fig. 2. Calibrations 1 inch apart were placed on the outside of the sampler to make it possible to take samples to a uniform depth. A \(\frac{1}{4}\)-inch hole was drilled through the top. A rod passed through this hole makes it easy to turn the tube as it is forced into the soil.

This sampler, constructed as described, has proved to be very durable. Fine-textured soils have been sampled when they were so dry that the sampler had to be driven into the soil by means of a hammer. The driving cap shown in Fig. 1 was made for this purpose. The heavier wall in the upper 1 inch of the tube was found to be necessary to avoid injury to the tube when being driven into dry soil. The lower end of the tube, turned down to form a cutting edge was tempered slightly.

When the sampler is turned or driven into the soil the core is not depressed and, except in the case of wet clay soils, it drops out readily when the tube is inverted. The plunger shown in Fig. 1 was designed to aid in removing the core from the sampler, but it is only required when the soil is wet and very sticky. The ease with which the core may be removed makes it possible to take a large number of samples in a short time.—R. L. Cook and B. J. Birdsall, Michigan State College, East Lansing, Mich.

WEATHER IN RELATION TO YIELD OF AMERICAN-EGYPTIAN COTTON IN ARIZONA

In studies incidental to a survey of production trends of American-Egyptian cotton the annual fluctuations in yields of this extra long staple cotton were compared with maximum, minimum, and average temperatures, with percentages of relative humidity, with dates of killing frost, and with evaporation. Of these six weather phenomena only date of killing frost and evaporation showed any consistent relationship with yield.

\[1\text{Contribution from the Division of Cotton and Other Fiber Crops and Diseases, Bureau of Plant Industry, U. S. Dept. of Agriculture.}\]