NOTES

2. The slides were then transferred to a solution of equal parts by volume of xylol, absolute alcohol, and ether, plus 1% celloidin, for five minutes; they were then passed through 95, 85, 70, 50, and 35% ethanol alcohol solutions successively for five minutes each and two changes of distilled water at 5-minute intervals.

3. Mordanting was necessary because hematoxylin did not stain by itself. Four per cent ferric ammonium sulphate solution was used for mordanting, colloquially known as "iron alum", although other substances may also be used. The crystals are clear violet in color and the ones which turned yellow should be discarded. Two hours for mordanting of older and thicker sections was necessary.

4. The mordanted specimens were washed thoroughly in running water for 10 minutes, rinsed in distilled water, and then placed in 0.5% aqueous hematoxylin solution for 24 hours.

5. The excess of the hematoxylin stain was washed out in tap water and the slides were removed to 1% Bismarck Brown Y. stain solution, prepared in 70% ethanol alcohol, for 3 to 4 hours.

6. After the excess stain of Bismarck Brown Y. was washed out in running water, the slides were first rinsed in distilled water and then were passed at 5-minute intervals through 5, 10, 20, 35, 50, 70, 85, and 95% of ethyl alcohol solutions, following this by 2 successive changes of absolute alcohol. Dehydrated tissue was cleared in xylol, mounted in "Permount" and dried for two days at 45–50° C. on an electric warming plate. At the completion of the stained process, the stone cells in the taproot and crown of alfalfa stained a cherry red, the bast fibers a brilliant orange, the ray cells and other parenchymatous tissue a chestnut-brown, and the middle lamellae a dark blue.

The method described for preparing serial sections of the old taproot and crown of the alfalfa plant has been found entirely satisfactory. Very good serial sections can be obtained for finer histological studies of woody taproot and crown of alfalfa.

The application of this method to other herbaceous plants may be successful.—C. K. LABANUSKAS, formerly Junior Horticulturist, Citrus Exp. Sta., University of California, Riverside, Calif.

A MOBILE INFILTROMETER

VARIOUS types of infiltrometers have been developed and used for determining water intake rates on range and cultivated lands. Some equipment presented limitations in mobile water required. Later Forest Service and the Soil Conservation Service developed equipment easily, and studies of water intake rates could be increased. The Soil Conservation Service developed a particularly mobile piece of equipment for simulating rainfall in studying splash-erosion factors. In 1950, this equipment was moved to Wyoming Soil Conservation Service. A few adaptations were made in measuring water-intake rates rather than splash-erosion. This equipment has been used extensively by the USDA for determining water-intake rates on range, Central and Northern Great Plains.

A need for more equipment to measure cultivated land led to the construction of equipment by the Wyoming Agricultural Experiment Station to move with the equipment previously in use led to several changes that may be of interest to others.

The basic principle developed by W. D. Ellison for the Texas infiltrometer involving use of a full-cone nozzle spraying onto a circular drip screen to obtain uniform drop size was used with only minor changes as described in this report. The tower shown in figure 1 encloses the nozzle and the drip screen. The nozzle is set at 1295 feet above ground and the drip screen is mounted 4 feet above the surface. The 2- by 2-foot test area is a circular plot approximately 13y2 square feet in which a 2 foot square metal frame is centered. The area is enclosed on the sides with a frame, 6 inches high, is forced into the ground and the drip screen is mounted in this arrangement, uniform drop size can be maintained over the entire area under the tower. The 4-inch-mesh chicken wire is pulled through a mesh cloth. The cloth is pushed into each mesh, and the area under the tower. The nozzle is mounted at the top and centered in the area of an iron frame circle, 4 feet in diameter, 1-inch-mesh chicken wire and four thicknesses of cheese cloth. The cloth is pushed into each mesh, approximately 1 inch deep. A piece of yarn 2 inches long is pulled through each pocket and knot is tied below this the drip screen is mounted. The tower of an iron frame circle, 4 feet in diameter, 1-inch-mesh chicken wire and four thicknesses of cheese cloth. The cloth is pushed into each mesh, approximately 1 inch deep. A piece of yarn 2 inches long is pulled through each pocket and knot is tied below this. The drops fall approximately 1 foot below the surface. The 2- by 2-foot test plot is centered in the 4 foot circle is surrounded by a larger area receiving an equal amount of rain. This eliminates the possible error of lateral losses.