screw driver or other hard object, a small and large drop are piled up on the ends of the tube with a fine-pointed pipette. On releasing the pressure the large drop grows bigger at the expense of the small one. The whole apparatus may be projected with an ordinary lantern, or, if it is made very compact, with a low-power projecting microscope.

3. *Surface Tension and Solubility.*—This is a chemical application of the principle illustrated in Exp. 2. The increase in the solubility of gypsum caused by a fine state of division, first determined by Hulett[1] may be shown as a lecture experiment in either of the two following ways:

(*a*) The following materials are required: a "*normally saturated gypsum solution*," made according to Hulett's method, by stirring gently for some hours about 300 cc water with 30 grams coarsely powdered gypsum, from which the fine particles have been previously rinsed with water. This solution may be kept indefinitely, and shown in contact with the crystals. *Finely powdered gypsum*, made by grinding about a gram of the crystals to an *impalpable* powder in an agate mortar. *Sodium phosphate solution*; a solution is made up containing 100 grams sodium phosphate ($Na_2HPO_4.12H_2O$) and 2.5 grams sodium hydroxide per liter. About 29 cc of this solution (the exact amount must be found by trial) is colored dark pink with phenolphthalein and diluted with water to 100 cc.

The experiment is carried out as follows: To one of two beakers, each containing about 50 cc of normally saturated gypsum solution, is added a pinch (about 0.5 gram) of the finely powdered gypsum. This is shaken for a moment and then both[2] liquids are immediately filtered through previously arranged filters. The first filtrate may be poured through again if not perfectly clear. Twenty cc of each filtrate are then put in two projection cells in the lantern and shown on the screen. On adding 10 cc of the sodium

[1] Zeit. phys. Chem., **37**, 385 (1901).

[2] It is best to treat both liquids in exactly the same way, since the point of the experiment is to show a small difference in concentration.