found in drug stores, would be about two ounces of chemically pure oxalic acid, the same quantity of chemically pure sodium hyposulfite, and very small quantities, say, one eighth ounce each or even less, of the important indicators, such as phenolphalein, methyl orange, rosolic acid, etc., the total cost of chemicals being about fifty cents. I would recommend a pill tile as an excellent base to place beakers or graduates on to note color changes and end reactions. Prof. J. U. Lloyd has suggested to me the use of a capillary glass tube as an excellent method to note color changes; he says he has found that by the use of this method duplicate tests can be made to exactly equal each other. The suggestion is well worth a trial.

If a few pharmacists in the same town would meet once a week or twice a month for two or three hours they could, with a little outside aid, or even unaided, learn sufficient of volumetric quantitative analysis in six or eight lessons to be of great value in many directions.

Suintine and its Uses.

Suint, suintine, and lanoline are three very nearly related appellations given to a certain animal grease, of which the useful properties are hardly sufficiently Suintine is sheep suint widely known. separated from the soluble products of the sudorific glands and from the extrancous dirt from the fleece. It is a sebaceous secretion, a special waxy substance which lubricates the skin and covers the threads of the wool with a protecting and impervious coating. It is got on a large scale in many places. The method employed at Roubaix, in France, is the following :

The waters in which the wool has been washed are beaten up in a series of agitators. The whitish froth resulting from this proceeding contains the grease, and is skimmed off and filtered to free it from the water which still clings to it. The grease still remains charged with earthy matter and is hot-pressed. The grease running from the presses is clarified twice with water. It is then ready for sale. Suintine has a dark brownish color and a disagreeable, sheepish smeil. It is of a firm consistency, though rather soft in hot weather. Its fusion point is very uncertain, as it is composed of different greases having different melting points. In fact, its composition is very complex and variable. It is neutral, and

composed of fatty acids combined with cholesterine, and also of alcohols of the fatty acid series. It contains a large percentage of lanoline and also a wax resembling beeswax. Lanoline is only purified suintine, from which both color and smell have been removed. It is much used in pharmacy, as it gives the skin great power in absorbing drugs. Suintine has the same power of penetrating the skin, and is coming to be used as a cosmetic for smoothing and softening the skin. It never goes rancid if properly made. In making lanoline the smell of the suintine is removed by adding to it one-fiftieth of its weight of essence of mirbane, a perfume constantly used in soapmaking. Judging by the effect of lanoline on wounds, the mirbane strengthens the antiseptic power of the lanoline, which is an ideal dressing for wounds. Soldiers use it for blistered feet and small abrasions.

The price of suintine is low, viz.: about two-thirds of a penny per pound. This is partly due to the fact that the woolcombers have to extract it from the wool whether they can sell it or not, partly to the fact that suintine is not so well known as it should be, and is consequently not much in demand. Essence of mirbane costs about a shilling per pound. Suintine is a very economical cold cream, and, besides the advantages we have enumerated above, it has the very important one of both preventing and curing chilblains. The non medicinal uses to which suintine can be applied are numerous. It keeps leather footgear free from hardness and cracks and makes it waterproof, on account of the great quantity of waxy matter in the suintine. Mixed with five or six per cent. of lampblack it makes excellent blacking, and, unlike ordinary blacking, does not injure the leather. Another very important property of suintine is that of making textile fabrics waterproof while retaining all their porosity for air. The use of suintine in waterproofing is thus to be preferred to the employment of india rubber or alumina salts. Dr. Berthier found that the clothes of Arabs, made of raw wool, were waterproof, and the result of his observations is that a solution of lanoline in from five to ten times its weight of petroleum essence has been tried for waterproofing clothing. The method, which has met with complete success, is as follows: The clothing is cleaned thoroughly, and all soap is perfectly rinsed out of it. It is then steeped for a short time in the

lanoline solution, removed, wrung, and allowed to dry, or the solution may be applied to the stuff with a sponge. It is probable that the goods are stronger after undergoing this waterproofing than they were before. They should not be washed with soap, which will probably remove the lancline and the waterproofness with it. Benzine may, however, be used for cleaning fabrics waterproofed with lanoline, and the benzine seems to make them still more waterproof. The cost of the process is insignificant, with lanoline at half-a crown a pound. It must also not be forgotten that waterproofing a stuff with lanoline makes it more supple than at first, and leaves any dyes it may contain absolutely unchanged.-La Na ture (Oils, Colours and Drysalterics)

How to Make Ground Glass Chemically.

Lainer recommends the following process in the Chemiker Zeitung :-- Mix 240 c.cm, of commercial hydrofluoric acid of 1.258 specific gravity with 600 grammes of pulverized soda crystals, then dilute with 1,000 c.cm. of water. A ter standing for some time a sediment is formed and over it a clear solution. The thoroughly cleaned glass pane is provided with a wax edge (prepared by kneading yellow wax with tallow, colophony and asphalt powder) and pre-etched with common hydrofluoric acid (1:10) for some minutes to obtain an absolutely clean glass surface. Then wash with water and wipe the plate with a clean soft sponge until the surface is only slightly moist. Stir up the paste of the etching acid and pour the mass 1 cm. to 1 cm. high upon the pane. With this mixture a nice normal deadening is obtained after one hour. If the acid is old, having been used often, it may be made to act longer upon the plate of glass. The liquor is poured back into the vat and the glass is rinsed off with water. Then the water is allowed to remain upon the pane until a skin, formed from the surface of the glass, can be removed with the finger or a brush. The strong deadening obtained by this method can be fixed to any desired degree of transparency by etching with hydrofluoric acid.

A good selling line is small bottles of ammonia, slightly colored, for cleansing hair brushes and sponges. It is not a bad idea to make each customer who buys a sponge or a hair brush a present of a small sample bottle of such a preparation; it usually results in their coming for a full-sized bottle.