

determination of the specific gravity of Portland cement, as for example, with the Le Chatelier apparatus, open to the objections of choking of the tube, inaccuracies of volumetric glassware, and the difficulty of maintaining a constant temperature during the operation, the modified form of the Westphal balance has commended itself most highly as an easy, rapid and accurate means for the determination of the specific gravity of cement and all other solids, whose composition is changed by immersion in water. With this instrument it is only necessary to weigh the substance in air, and then in some liquid such as kerosene, carbon tetrachloride, or carbon bisulphide, after which the specific gravity of the liquid used is determined in the ordinary way by means of the thermometer plummet.

For the specific gravity of minerals it has been found very rapid and accurate, permitting the substance to be in either the form of a fragment or powder.

It will be seen that the instrument combines in compact and portable form all the advantages of the original Westphal balance and the Jolly balance.

It may also be used as a portable analytical balance for loads up to 10 grams with a sensibility of 0.5 mg.

A PERCOLATOR FOR USE IN ASSAYING DRUGS.

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THE percolator here described has been in use in this laboratory for two years, during which time it has proved to be a very useful piece of apparatus.

Moistening or macerating a drug in one vessel and then transferring to another for extraction is a tedious operation always involving danger of loss. The dry drug can be placed in this percolator and the entire operation of maceration and extraction can be conducted without transfer.

In using this percolator (Fig. 1), a plug of cotton is packed tightly below the constriction A, by means of a wire which may be sharpened on one end and provided with several barbs for removing the cotton. The dry drug is placed in the percolator, the solvent is then added, the stopper inserted, and the whole thoroughly shaken. During the maceration the stopper is held

in place by a spring clip. If the stopper is removed carefully when the maceration is finished, the small amount of solvent which may be forced up around the stopper can be retained in the



funnel-shaped top, *C*, and washed down by a jet of the solvent, most conveniently produced by a Schuster's dropping-bottle, the heat of the hand being sufficient to expel a volatile solvent such as ether or chloroform. A plug of cotton is then inserted and pressed down with a glass rod, thus removing the particles of drug from the sides of the percolator and packing the drug for percolation. The rate of flow of the percolate can be regulated by the stop-cock, while the funnel top serves to hold the stopper in an inclined position, thus preventing undue evaporation of the solvent.

The percolators in use in this laboratory have a total length of about 30 cm., and a capacity of about 100 cc.