osculometer which he has developed for this purpose. In its simplest form, the osculometer consists of a series of arcs of circles drawn on a transparent plate, in which succeeding arcs of known curvature have a definite increase in curvature from one arc to the next. In use, the curvature is determined by selecting the arc which has the same curvature as the curve at the point under consideration. The instrument has been used with success to obtain the acceleration of a body from a displacement-time curve of its motion.

STANDARD BUFFER SOLUTIONS.

For the purpose of calibrating pH assemblies such as the hydrogen-calomel and the glass-calomel type, it is necessary to have on hand a number of salts of adequate purity from which buffer solutions of known pH can be prepared.

In the Symposium on pH sponsored in June 1946 by the American Society for Testing Materials in Buffalo, New York, George G. Manov presented details concerning the purification of potassium dihydrogen phosphate, disodium hydrogen phosphate (used together for the preparation of phosphate buffers), and borax (sodium tetraborate decahydrate). Each salt was purified by fractional recrystallization from water until it was evident that no error greater than 0.002 pH unit could be ascribed to residual impurities in the finished product. These salts were recently made available for distribution as NBS Standard Samples, 186-I, 186-II, and 187, respectively.

Analyses of commercial products were given showing the range of pH values for 0.1-m solutions of the ACS or reagent-grade chemicals.

Cells without liquid junction were used to measure the electromotive force of hydrogen and silver-silver-chloride electrodes immersed in a solution of the buffer to which had been added a known amount of sodium chloride. The pH values of the buffer mixtures were calculated from the data. The assumptions made in the method used at the Bureau in the calculation of pH were discussed, and a comparison was given of the pH values for the same buffers on the basis of cells with and without liquid junction.

Buffers covering the pH range from 1 to 9 were suggested for use in the calibration of pH equipment, together with data regarding their stabilities in aqueous solution over a long period of time.

PERMEABILITY OF BRICK-MORTAR ASSEMBLAGES.

Recent work on permeability of brick-mortar assemblages was described in a paper presented by John W. McBurney at the June meeting of the American Society for Testing Materials. For the purpose of this