kindly advice and assistance, and I wish to express my grateful thanks to him and acknowledge the many favors shown me.

STANFORD UNIVERSITY,
January 31, 1905.

Note.—The methods employed for the purification of the ammonia used in these experiments precludes the possibility of the presence of objectionable quantities of impurities other than possibly pyridine and its homologues. Tests for pyridine, by the method of H. Ost[1] failed to show more than traces of that substance in the liquid, which was not so highly purified as that used for the boiling-point determinations.

Franklin and Kraus[2] have shown the boiling-point elevation constant of ammonia to be 3.4, a value smaller than that of any other known liquid, whence it follows that nearly 3 per cent. of pyridine by weight must be present to produce a change in the boiling-point of the solvent of 0.1 degree. Since tests have shown that nothing approaching such a quantity was present, the conclusion is justified that the value given in this paper for the boiling-point of liquid ammonia can not be appreciably in error from the presence of impurities in the ammonia used.

I am indebted to Dr. William A. Noyes for the suggestion that tests for pyridine be made.

H. D. GIBBS.

FOOD LABORATORY,
SAN FRANCISCO, CALIFORNIA,
June 12, 1905.

[CONTRIBUTION FROM THE BUREAU OF CHEMISTRY, DEPARTMENT OF AGRICULTURE, NO. 58. SENT BY H. W. WILEY.]

CHEMICAL GLASSWARE.

BY PERCY H. WALKER.

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It is unnecessary to call the attention of the analytical chemist to the fact that all glass is more or less soluble in water and in various solutions. He simply accepts the fact and when working with the greatest care avoids, as far as possible, the use of glass. Of really greater practical importance than the difference in solu-

[1] "Commercial Organic Analysis," Allen, Vol. III, Part II, p. 104.

[2] *Amer. Chem. J.*, **20**, 846 (1898).