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NEW METHODS OF MEASURING THE SURFACE-TENSION OF LIQUIDS.

BY

T. PROCTOR HALL.

I. HISTORICAL.

THE common way of measuring the surface-tension of liquids by finding the height to which they will rise in capillary tubes is simple and convenient, and is applicable to nearly all liquids. The degree of accuracy attainable is limited by (*a*) the narrowness of the tube, or else the shortness of the elevated liquid column, which limits the accuracy of measurement; by (*b*) irregularities in the bore of the tube; by (*c*) the difficulty in securing a clean surface, particularly in very small tubes; and by (*d*) impurities, such as dissolved air, in the body of the liquid. It is to the last two causes that most of the differences seen in the following table are probably due. The table gives the values of the surface-tension of water as found by various observers by means of capillary tubes. All values are given in dynes per centimetre, and the numbers in the second column are, where necessary, deduced by Brunner's formula for the relation of surface-tension to temperature.