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TESTING OF APPARATUS USED.

(a) *The Standard Bottle.* As the only unit for the measurement of gas is the cubic foot as defined by section (4) of the Act, it was necessary that the standard cubic foot "bottle" should be tested. This was done by filling it with distilled water between the marks limiting the cubic foot, and then weighing this water and correcting the result for difference of temperature. I found that the bottle held 62.172 lbs. of distilled water at a temperature of 74° F., which when corrected for temperature to correspond to the standard of 62° F., gave a weight of 62.257 lbs., which differs from the standard weight of 62.321 lbs. by about one-tenth of one per cent. The bottle was, therefore, assumed to be correct.

(b) *The Gasholder.*—As all the meter tests described in this report were made at the Gas Inspection Office in the rear of 10 Toronto Street, the holder in this office was very carefully calibrated by means of the standard cubic foot bottle. I found during the tests that this holder was somewhat out of adjustment; but, as it worked with perfect freedom and gave quite uniform results, I decided to continue the tests and afterwards to calibrate the holder under the exact conditions under which it had been used. I found that certain corrections had to be made on this account, but, allowance has been made for all these in the results.

I next examined the divisions on the scale on the gasholder by means of a steel scale divided into hundredths of an inch, and I found that the divisions had not been accurately made and were irregular in many places. For example, I found that in certain cases divisions were 0.05 in. and in others 0.08 in. apart, whereas they should have been .064 in. apart. The scale on this holder is not good; in some places the markings are almost illegible, and there are frequent errors of division of the kind mentioned. These inaccuracies have been allowed for in the tests.

This holder is not in good condition mechanically, and there are clear indications that it is frequently out of adjustment. It should be put in first-class condition and provided with a new scale at once.

I think it only fair to point out that the holder is not used on regular work, meters for the general city service being tested at the Government Office on the Consumers' Gas Company's premises.

THE TESTS.

In making the tests, the procedure was as follows:—The meter to be tested was first placed upon a level bench and its inlet connected by means of a pipe to the gasholder. In the case of five and three light meters, provisions was made for taking the temperature of the air as it left the holder, as it entered the meter and as it left the meter, special attachments being provided at the meter for the purpose. The temperatures of the room and of the water in the holder were also taken. In the case of the ten and