

WEIGHTS, MEASURES, AND GAS.

So much delay took place in the manufacture of the Dominion Standards for Weights and Measures, that a postponement for six months beyond the time originally proposed for carrying the law regulating these into effect became necessary. It was not till the 30th of September, 1874, that the first two of the Standard Yards were delivered in London, and they did not reach Ottawa till December.

The Measures, &c., received, and the date at which they were received, were as follow:—

October 8—Three platinum-iridium avoirdupois lbs. A, B, C; and three platinum-iridium troy ounces, A, B, C. November 12—Three standard gallons of gun metal, respectively marked A, B, C; and the Standard Yard C. December 3—The Standard Yards A and B.

The Gas Standards were delivered as follows:—

July 27—The model photometer and testing apparatus. October 25—The standard ten and five feet gas-holders, and two standard meters, one for one hundred and one for twenty lights. December 10—The standard cubic foot measure.

One of these primary standards was placed in the custody of the Speaker of the Senate, and another in that of the Speaker of the Commons. The laws respecting them took effect after July 1st, 1875. The lineal standards consist of three bars of Baileys Metal; each bar about 38 inches long, the section being a square, the side of which is about one inch. The Standards of Weight are three Avoirdupois pounds and three Troy ounces of platinum-iridium, each is contained in an inner casing of silver, gilt, and this again in a bronze box, the cover of which is secured by four screws with countersunk heads. In addition to these a Standard Kilogram has been obtained and placed in the strong box of the Department of Inland Revenue with the other standards. The Standards of Capacity consist of three Standard Gallons enclosed in iron fire proof boxes with a brass plate on the lid. They are of gun metal, cylindrical in form. The internal diameter is 7.5 inches, and the depth 6.25 inches. They are made with two handles cast solid with the measure, and have the following relations to the Imperial Standards.

	Grains.	Ascertained Errors.
A contains of Standard Water, the corrections for temperature and barometer pressure being made.	69981.03	—13.07
B contains of Standard Water.....	69961.71	—38.29
C contains of Standard Water.....	69972.26	—27.74
The true Standard contains of Standard Water.....	70000.	

The Gas Standards consist of a Model Photometer, with an apparatus for testing for Sulphuretted Hydrogen; a set of Chemical apparatus for testing for Ammonia and Sulphur, a cubic foot bottle to test the accuracy of gas-holders or meters, by passing through them such number of cubic feet of air as may be deemed expedient; a 10 foot gas-holder, a 5 foot gas-holder, and test meters for 100 lights and for 20 lights. These are deposited in the Department. The Platinum Iridium Standards are only to be used for the verification or restoration of the Departmental Bronze Standards which approximate very nearly in density to the average density of the material commonly used for commercial weights, and may be used for verifications. The Imperial Standard for the gallon is 70,000 grains or 10 lbs., avoirdupois; the weight of standard water the measure should contain, clean rain water at a temperature of 60 to 65 degrees, will give results very nearly accurate for this. Besides the Dominion Standards, there are the following sets of Departmental or Secondary Standards: Two 10 feet bed and 2 rods, 16 feet bed and 1 rod;—2 sets of avoirdupois weights, 20 in number, being 10, 20, 30 and 50 lbs. with their decimal parts; 2 sets of 10 avoirdupois weights each from $\frac{1}{4}$ lb. to $\frac{1}{4}$ dram, 2 decimal sets of Grain Weights from 1,000 grains down to the 1,000th part of a grain; 2 sets of Decimal Troy Weights of 24 weights each; 1 set of Metric Weights; 2 sets of Measure and Capacity, with glass Discs from a Bushel to Half Gill. Some of the instruments for the Departmental equipment are not yet delivered. There are also Gas Standards for Departmental use. Standard Thermometers and Barometers, Weighing and Comparing Apparatus of various kinds. The District Inspectors, when appointed, will be furnished each with a set of Avoirdupois Weights from 50 lbs. to $\frac{1}{4}$ dram; 3 Balances of 50, 5 and 1 pound; 1 Divided Yard Line Measure; 1 ten feet end Measure bed and 2 Rods; 1 chain, 100 feet, divided in feet; 1 chain, 66 feet, divided in 100 links; 1 set of Weights for Decimal Division of the Pound; 1 Set Troy Weights, from 500 oz. to 1-1000th of an oz.; 1 Box Grain Weights, from 1000 grains down to 1-10th of a grain; 1 Set Measures of Capacity from $\frac{1}{4}$ Bushel to Gill and 1 comparing apparatus for end or line measures.

It is hoped that a complete system of inspection will be established at all places of importance in the Dominion by the 1st January, 1876, but the verification of all the weights and measures over so great an extent of territory, involves so much labour that considerable time must necessarily elapse before they can be in universal use. The change to the new standards is not compulsory till 1880, so that parties may be able to accommodate themselves to the changes except Newfoundland the United States is the only country in which the wine gallon and Winchester bushel are retained as the legal standards for liquid and dry measures. The adoption of the Imperial Standard by Canada effects nearly complete uniformity throughout the English speaking portion of the Empire, a population of 50,000,000 souls. The use of the metric system has been permissive in Canada since 1871, but there seems no probability of its becoming generally used, except among scientific men. It has been legalized in Italy, Germany and some other States, but