

## WEIGHTS AND MEASURES.

## ENGLAND.\*

We find in the great Charter of Henry III, which was a confirmation of the famous Magna Charta of King John, his predecessor, an express enactment having for its object the establishment of *uniformity* in weights and measures. This was in 1266. Avoirdupois and Troy weights do not at this time appear to have been the standards of weight in England. The first mention of avoirdupois weight in the English statutes is to be found in a statute of Edward III, anno 1335.

The weight of the *silver penny* sterling, was the basis of the system of 1265. This penny was the one-two hundred and fortieth part of the Tower pound, and was equal in weight to 32 kernels of wheat. (51 Henry III.) But the language of the law itself is so singularly precise, and the system of uniformity as to coins, weights and measures, which it prescribes, is so ingenious, that the words themselves deserve quotation:—

“By the consent of the whole realm of England, the measure of the King was made; that is to say; that an English penny called a sterling round, and without any clipping, shall weigh 32 wheat corns in the midst of the ear, and 20 pence do make an ounce, and twelve ounces one pound, and eight pounds do make a gallon of wine, and eight gallons of wine do make a London bushel which is the eighth part of a quarter.”

The fundamental law of weight and measures in England at this day is the statute 5 Geo. IV, cap. 74, which is in a great measure a declaratory act, but of which the provisions are so important that they are here recapitulated.

Sec. 1.—Declares that from and after the 1st May, 1825, the straight line or distance between the centres of the two points in the gold studs in the straight brass rod now in the custody of the Clerk of the House of Commons, whereon the words and figures “Standard Yard 1760” are engraved, shall be, and the same is hereby declared to be, the original and genuine standard of that measure of length or lineal extension called a yard; and that the same straight line or distance between the centres of the said two points in the said gold studs in the said brass rod, the brass being at the temperature of 62° of Fahrenheit’s thermometer, shall be and is hereby denominated the “Imperial Standard yard,” and shall be, and is hereby declared to be, the unit or only standard measure of extension wherefrom or whereby all other measures of extension whatsoever, whether the same be lineal, superficial, or solid, shall be derived, computed and ascertained; and all measures of length shall be taken in parts or multiples, or certain proportion, of the said standard yard and that one third part of such yard shall be a foot, and the 12th part of such foot shall be an inch, and that the pole or perch shall contain five such yards and a half, the furlong 220 such yards, and the mile 1760.

Sec. 3.—This section provides that the yard, if lost, &c., may be restored by reference to the length of pendulum vibrating seconds of mean time in the latitude of London, in a vacuum at the level of the sea, in the proportion of 36 inches to 33 inches, and one thousand three hundred ninety three ten thousandths parts of an inch.

Sec. 4.—Standard brass weight of one pound Troy weight made in the year 1758, shall be the Imperial standard Troy pound, and is declared to be the unit or only standard measure of weight, from which all other weights shall be derived, computed and ascertained; 1-12th part an ounce, 1-20th of the ounce 1 pennyweight, and 1-24th of such pennyweight shall be 1 grain, so that 5760 such grains shall be a Troy pound, and 7000 such grains shall be a pound avoirdupois, 1-16th of the said avoirdupois pound shall be

\*The articles on the weights and measures of England, the United States, Canada and France are condensed from a paper by R. S. M. Bouchette, Esq., Commissioner of Customs, Ottawa.

1 ounce, and 1-16th of the said avoirdupois ounce 1 dram. Sec. 5.—Standard pound Troy if lost, &c., to be restored by reference to a cubic inch of distilled water weighed in air, by brass weights at the temperature of 62° Fahrenheit’s thermometer, the barometer being at 30 inches, the weight of which is equal to 253 grains 458-1000 of a grain, of which the Imperial Troy pound contains 5760.

Sec. 6.—The measure of capacity as well for liquids as for dry goods, not measured by heaped measure, shall be the gallon containing 10 pounds avoirdupois weight of distilled water weighed in air, temperature 62° Fahrenheit’s thermometer, barometer 30 inches—unit of all standard measures of capacity the Imperial standard gallon, as well for wine, ale, beer, spirits, and all sorts of liquids, as for dry goods not measured by heaped measure—and parts and multiples—quart  $\frac{1}{4}$ , pint  $\frac{1}{2}$ —2 such gallons a peck, 8 such gallons a bushel, and 8 such bushels a quarter of corn or other dry goods, not sold by heaped measure.

Sec. 11.—Copies and models of the said standards to be deposited in the office of the Chamberlain of the Exchequer at Westminster, and to be sent to the Lord Mayor of London, &c.

Sec. 12.—Magistrates in Counties, Cities and Towns, &c., in England, Scotland and Ireland, to purchase models, &c., for their respective Counties, &c.

Sec. 14.—Bulk of 10 lbs. avoirdupois weight of water equal to 277 cubic inches, and 274-1000ths of an inch, constituting the capacity of a gallon, and so forth for parts and multiples.

Sec. 23-56 Acts or parts of Acts relating to divers weights and measures in Great Britain repealed.

This act was followed by the 4th and 5th William IV Cap. 49, which appears chiefly to have been intended to provide for the means of distributing standard weights and measures; but its provisions seem to have been insufficient or imperfect, since it was repealed the following year by the 5th and 6th William IV Cap. 63, (1835.) This last act renders unnecessary identity of shape or form in standards, and provides for their adjustment. One of its most important features is that it abolishes, the *Winchester bushel*, a measure traced back to the reign of Edgar, anno 972, which derives its name no doubt from the fact that the standard was by law kept at Winchester; the *Scotch ell*, and ALL LOCAL AND CUSTOMARY measures. *Imperial measures* as established by the 5th George IV, are the only legal measures recognized or “parts and multiples thereof.” The binary division is affirmed; and the  $\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{8}$  1-16th and 1-32nd are specifically designated as the only legal aliquot parts. But there is a somewhat singular proviso attached to the 6th clause, it is this:—“Provided always that nothing herein contained shall prevent the sale of any articles in any vessel where such vessel is not represented as containing any amount of Imperial measure, or of any fixed local or customary measure heretofore in use.”

The evidence given before the Committee of the House of Commons, the report of which Committee was presented to the House so recently as the 15th July last, (1862,) would tend to the inference that notwithstanding the strenuous efforts of all legislation to reduce weights and measures to positive and practical uniformity, extreme irregularity and disorder still prevail upon this subject in Great Britain.

## UNITED STATES OF AMERICA.

When British settlers colonized Virginia in the reign of Elizabeth, and the Pilgrims emigrated to New England in 1620, the weights and measures of the parent state were naturally imported by them, and afterwards universally adopted in the then North American Colonies.

Deriving their system from such a source, it is scarcely to be expected that any wide differences should exist between the British

and the American systems of weights and measures—indeed both countries have a common standard of extension, the *yard*, and a common standard of weight.

They had also a common standard of capacity until 1826, when an Act of the British Parliament, excluding all other measures of this order, adopted as the standard unit of capacity the “Imperial Standard Gallon,” equal to 277 (274-1000) cubic inches, both for