

pound was placed in the exchequer, and a standard of the troy pound was placed in the exchequer, Goldsmith's Hall, and the Mint. Nothing seems to have occurred in regard to the standard of weight till 1758, when a committee of the House of Commons was appointed to investigate the subject of weights and measures. On comparing the troy pound in the mint with that in the exchequer, it was found that the former was  $1\frac{1}{8}$  grains heavier than the latter. As the exchequer pound had been in use 170 years, the committee concluded that it had become somewhat worn.

It was then considered whether the English standard should be troy or avoirdupois in the future, and they resolved upon the former for the reason that that weight was best known to the English law; it was that which had been the longest in use, and that by which coins were measured; it was best known to the world; it was that to which their countrymen had referred and compared ancient and modern weights; and it was the weight which had been subdivided into the smallest parts. The committee then proceeded to obtain, with the utmost possible exactness, the standard weights of the several parts of the troy pound, in which they were assisted by a balance constructed by a Mr. Bird, which would turn with the two-thousandth part of a grain. One copy of the standard troy pounds was delivered to the House of Commons, and another to the king's assay master of the mint, in whose possession there was, and we believe still is, Mr. Bird's weighing apparatus. The troy pound consists of 5,760 grains, and should it be destroyed can be re-established from the fact that according to its standard a cubic inch of distilled water, at a temperature of 62 degrees Fahr., and 30 degrees bar., weighs 252.458 troy grains.

In the year 1816, it was decided that the avoirdupois pound should be 7,000 grains troy. Thus we have two standards in England. It is useless here to go into the details of these differences, which are both technical and practical, and which may be illustrated by the assertion that in some places 112 lbs. of potatoes are one cwt., in others 120, in others again 132; and at no point on record is 100 lbs. of potatoes a hundred-weight of potatoes. This divergence runs through commerce in every direction, and would form an interesting subject for further research, but must be omitted.

We next come to the establishment of the metric system, for which we are indebted to France. The distance from either pole to the equator is mathematically equal to one-fourth of the circumference passing through both poles, and is therefore called a quadrant. It was determined to make the ten-millionth part of this quadrant the standard of measure from which a standard of weight might be deduced. The next point, therefore, was to determine the exact number of units of measure of any given system which this quadrant contained. This required the

researches of the astronomers and mathematicians. It was found that the distance from the North Pole to the Equator was 10,936,578 English yards, or, to put it in a less scientific and rather more amusing form, it would take exactly this number of arms exactly the same length as that of Henry the First to cover the distance. We are, therefore, obliged to admit that although Henry has for over six hundred years slumbered, this remarkable arm of his is still as useful a standard of measurement as heretofore. But the French did not follow in the footsteps of the English, except in so far as to ascertain an expressible distance, for they divided these 10,936,578 English yards by 10,000,000, which added something over three inches to the arm of Henry; and should the metric system, which looks probable, ever conquer the world, the disciples of Henry will be proved guilty of giving short measure. From this measure of length were deduced measures of weight. The one-hundredth part of a metre is called a centimetre. Suppose, then, that we have a centimetre cube of distilled water at its point of greatest condensation, about 39.36 Fahr. The weight of this cube is the unit or standard weight, and is called a gram. The silver coinage of France rests on this basis, a franc being five grams of silver nine-tenths pure.

The weights and measures used for the simple traffic of original or primitive nations are always simple, and are usually of early origin. We find that the metric system, however, is based upon scientific and easily ascertained facts, and has the advantage of being estimated by a decimal system, which is an extraordinary simplification. The earliest standards of measure were the length of the foot or of the palm, a pace, a span, or the distance from point to point of the extended arms, all of which were subject to radical and irreconcilable differences in the individual. The standardizing of weights and measures by government is usually the first indication of the advancement of civilization, and a history of the enactments of the various governments would be interesting in the extreme, but we must leave this subject, after mentioning the fact that, among other means of ascertaining a fixed standard, it has been attempted to establish a unit of length of a pendulum vibrating seconds in the mean latitude of 45 degrees. In the last hundred years there seems to have been rapid improvement in the methods of ascertaining weights by means of balances, not that the highest possible attainment in the simple balance much exceeds the marvel of Bird, whose balance turned with the two-thousandth part of a grain, but that the balances and scales used for ordinary commercial transactions are so much nearer the high standard of perfection. This is due to the modern inventive genius of the times, which has manifested itself in this and many other directions. It is not that new principles have been introduced, but that greater progress in

mechanical operations has been made possible by the greater perfection in machinery. Even in the working and finishing of metals many advantageous points of advancement have been seized upon by the manufacturer of balances and scales and applied successfully, so that the standard of perfection in scales to-day is inconceivably in advance of the crude efforts of the early world.—*Omaha Druggist*.

### Chances for Enterprising Druggists.

Because the druggist must surrender a part of what was formerly his, it by no means follows that the loss is irretrievable, or that he is without means of effective retaliation against his despoilers. The process of merchandise distribution is undergoing incessant change and readjustment. Every branch of retail trade must expect some losses, but to the enterprising and alert there are usually corresponding gains. If perfumes must go, why not replace them with school books and school supplies generally? If toilet articles, why not introduce a select line of artists' materials, engravings, etchings, frames, and related supplies? Anything of cleanly and ornamental character, if adapted to the space limitations of a drug store, and particularly if its advantageous sale be largely dependent upon the information and personal judgment and reliability of the merchant, will find an especially appropriate place in the druggist's stock. To this class belong also lamps, glassware, fine wall paper, watches, clocks, the better class of jewelry, fine cutlery, and a variety of other articles quite as germane to the drug business as soda water and cigars, and quite as dignified and profitable. Optical supplies are peculiarly appropriate, provided the druggist be familiar with the art of fitting glasses; the same is true of trusses and similar goods. In short, anything that will not detract from the dignity of the store and that is associated with education, home decoration, popular sanitation, and physical comfort, and that can be made to *sell*, merits the consideration of every druggist to the limit of his facilities. Insurance agencies, carefully chosen agencies for bicycles (with one or more samples to keep the soda fountain company), agencies for society engraving comprising specimens of styles and facilities for prompt estimates and execution of orders—all these can be made to contribute generously to the store revenues, and to fill in most agreeably and profitably many a leisure moment of the proprietor or clerk. We mention these additions not as desirable accessions to the "practice of pharmacy," but as proper extensions of the retail drug business in localities where an exclusively prescription or medicine trade would fail of adequate returns for all of the druggist's time and his incidental expenses.—*Western Druggist*.