

NON OLET.

THERE is no small about that, said *Vespasian*, as he handed a gold piece to his son who objected to his dealing with the sewerage of Rome, as a matter of Imperial Revenue. The proposed Joint Stock Company, about to be established in London, C. W., for the purpose of deodorizing crude petroleum, may repeat the expression, if we are credibly informed, with regard to deodorized oil.

The principal objection to Canadian petroleum in the English market, has been, the smell that is about it, and a Refining Company extensively established for the purpose of overcoming this difficulty will become a public benefit, in opening the markets of Europe to the sale of Canadian rock oil. It is impossible to estimate the commercial advantages likely to accrue to Canada from this new product. Springs of petroleum are to be found in many localities in Canada, and a large portion of the South-western part of the country is underlain by oil-bearing rock. Already at Eniskillen and Bothwell, the amount of capital employed is very large and continually increasing. Rock oil is found in the anticlinal region of the limestone, and it is the opinion of Sir William Logan that an inexhaustible amount exists in Canada. The great value of this source of wealth may be estimated from the amount and value of petroleum taken out of the oil-bearing regions of Pennsylvania, in the United States. In 1862 the United States exported eleven millions gallons; in 1863 twenty-eight millions of gallons and in 1864 thirty-two millions of gallons. The value of the export in 1864 being forty-five millions of dollars. The value of the oil consumed at home was about nineteen millions of dollars, and the same amount of light, which it gave as a burning fluid, would have cost thirty millions of dollars, had the light been supplied by any other known means. Petroleum has become so necessary, and in such general use as a lubricator of machinery, that it is superseding all other oils, almost warranting *Punch's* joke that it is the essential oil of the nineteenth century. As an article in the commerce of the United States, its value has become enormous, and almost equals that of the coal or iron yield of Pennsylvania.

The Petroleum wells of Canada are only beginning to be opened. The development of this mine of wealth has only begun. We are told some one in England wrote a book about the oil discoveries in Canada, and forthwith a Company came over with one hundred thousand pounds to fetch oil over for the enlightenment of Europe. We have no knowledge of this enterprise but can assure any one that such a capital well employed will speedily develop an oil trade which will render a surer and larger dividend than any European stock now offering in the London market. The great want to the development of the rock oil interest in Canada is capital formed by Companies. As there is of necessity some risk in the undertaking, and as it may be attended with heavy expenses at first, before a return yield begins to come in, the business will never be likely to be successfully prosecuted by individual enterprise. The formation of Companies for the purpose is absolutely necessary. We are pleased to notice the formation of this new Refining Company at London. Any new agency by which Petroleum can be rendered more acceptable as a useful burning fluid and lubricating oil, will bring it into more general use, and attract attention to the mines of wealth which European capitalists are allowing to sleep almost untouched in Canada.

SYSTÈME MÉTRIQUE.

(From *Hunt's Merchants' Magazine*.)

MODERN commerce has encountered no greater obstacle to its progress than the system of weights, measures and moneys used in its prosecution. Not alone the great nations of the world, but every petty principality and power, until recently had their own denominations and values, differing greatly from one another, and only translatable through the aid of voluminous dictionaries compiled from elaborate comparisons. Such a condition of affairs might be tolerated in the primitive eras of nations, before travel and national interchanges of products became the great business of the human race; but in the present era, when the railroad and steamship carry passengers and freight with the swallow's pace, and when the comingling of nations makes the world as a single brotherhood, something more simple and universal in its functions is demanded, which the denizens of each and every nation, however foreign to each other in language, can easily comprehend. The great want has been, and still continues in a measure to be, a universal system, with a nomenclature, founded on the ancient Greek and Latin, languages in universal use. The adoption of such a system was one of the first

acts of the French Revolutionary government, which in 1790 proclaimed the *Système Métrique*. It has since been adopted either wholly or partially, and its use become permissive or obligatory in almost every civilized country. We ourselves have for many years used it in scientific processes, and are now about to bring it into general use. A bill to this effect is before Congress, and has already been sanctioned by the Representatives; and there appears to be little doubt but that the bill will finally become a law, and the system in a short time be popularized throughout the Union. The change demanded by the new system will come easier to ourselves than to nations wholly accustomed to multiply and divide by the binary process. We have learned the decimal mode of proceeding from our own money system, and hence to carry its application to weights and measures will soon become familiar. Otherwise than this, the change contemplated by the present law is without complexity, being simply the substitution of one unit of value for another. What follows will explain the whole subject.

HARMONY OF THE FRENCH SYSTEM.

Though decimal weights and measures will be new to this country, they are not new to the world. They originated in France three quarters of a century ago, where they have been fully tested in the crucible of commerce, and the system there adopted has been proved to be the best that it is possible for man, aided by science to devise. In France it has had the best trial it is possible that it could have, for it is only in a country where the monetary and metrical systems are both decimalized that it could be thoroughly tested. When the United States created its decimal currency, and left its weights and measures unaltered, it did not even carry out a half measure of reform. *Stoer's* proverbial dictum, that "they do these things better in France," was never a greater truism than in the matter of her change to a decimal system. She did not pull down and rebuild the half of an edifice, and present a structure, one half of which did not accord with the other, but tore down the entire of the old fabric, and erected a new one that harmonized in all its parts.

THE ADVANTAGE OF ADOPTING THE FRENCH SYSTEM.

It is the French system of weights and measures that we are about to introduce. By adopting its units, which are founded on scientific data, there is no placing an additional cog in the wheels of commerce, which would undoubtedly be the case if a new system were introduced with other units, although that system were a decimal one.

It is evident that the French system must, in the course of time, become universal, and the sooner we thoroughly adopt it—that is, make its use compulsory—the sooner we shall place ourselves on the smooth road upon which all nations must eventually travel. The nomenclature, too, being derived from the Greek and Latin, renders it applicable to every modern tongue, and thus prevents the necessity of each country drawing from its own lingual store names for new weights and measures which would not be understood beyond its boundaries. The advantage in commercial transactions of a universal system with a universal nomenclature is obvious.

THE ORIGIN OF THE DECIMAL SYSTEM.

The history of the invention and introduction of the metric system is a matter of much interest. It imparts to us a knowledge of the substantial foundation upon which it rests, and the care which was bestowed to arrive at a system in strict accordance with the laws of science. We have no space, however, to enter into a detailed account of the difficulties that beset the path of those who were engaged in reducing the theory into practice; but when we state it at the requisite surveys and experiments were carried on in the most exciting period of French history, the result proves how successfully earnest and intelligent men are able to overcome, what to others would be insurmountable, obstacles. Their labors began a year or two before the commencement of the revolutionary struggle, and did not terminate until the last year of the century.

The ancient French system of weights and measures presented no uniformity, there was no relation between the *pes*, used as the unit of the measure of length, and the *livre*, as that of weight; and even although those measures bore the same denominations in all provinces, they were very different in their proportions in particular districts—the diversity being, to use the epithet of *Delamare*, scandalous. Local consumers did not feel the whole disadvantage which arose, but merchants often experienced great difficulties in converting to their own local standard the qualities expressed according to another rule.

One of the first objects which engaged the attention of the general States in 1788, was to find a remedy for this defect. It was then agreed that some principle should be established, on which a new system should be founded. It was desirable to find a natural and invariable standard, and it may be observed that mankind, in all ages, have been endeavoring to obtain some such result, though they may have proceeded without accurate scientific knowledge. Without science it is impossible to find an invariable standard in nature, for there is such infinite variety in the individual character of her productions that no portions of animal or vegetable matter can be found of equal or unchanging dimensions. It was therefore the object of the French to establish, "as the fundamental unity of all measures, a type taken from nature itself, a type as unchangeable as the globe upon which we dwell, to prepare a metrical system, of which all the parts should be intimately connected, and of which the multiples and subdivisions follow a natural progression, which would be simple, easy to comprehend, and worthy of the enlightened age in which they lived."

THE UNIT DECIDED UPON.

The Académie des Sciences was first requested to determine the length of a pendulum, vibrating seconds according to given rules, under certain circumstances. But this was objected to, because it was thought that

the result, depending upon the weather and arbitrary division of time, was not susceptible of the requisite accuracy. It was then agreed to adopt the ten-millionth part of the fourth part of the meridian, or of the quadrant comprised between the Equator and the North Pole, for the unity of this measure of length, and to derive all others from this standard.

PRINCIPLES OF THE METRICAL SYSTEM.

It was then proposed that the new system should be founded upon the following principles:

1. That all weights and measures should be reduced to one uniform standard of linear measure.
 2. That this standard should be an aliquot part of the circumference of the globe.
 3. That the unit of linear measure applied to matter in its three modes of extension, length, breadth, and thickness, should be the standard of all measures of length, surface, and solidity.
 4. That the cubic contents of the linear measure in distilled water, at the temperature of its greatest contraction, should furnish at once the standard weight and measure of capacity.
 5. That, for every thing susceptible of being measured or weighed, there should be only one measure of length, one weight, one measure of contents, with their multiples and subdivisions exclusively in decimal proportions.
 6. That the whole system should be equally suitable for the use of all mankind.
 7. That every weight and every measure should be designated by an appropriate, significant, characteristic name, applied exclusively to itself.
- It will be observed, according to this scheme, the unit of linear measure is the basis of the whole system. For the purpose of obtaining the value of the unit, it was resolved that an arc of the meridian should be actually measured. M. Méchain and Delambre were therefore appointed to ascertain, with the utmost precision, the length of the arc comprised between Dunkirk and Rhodes, in France, a distance of nearly 550,000 toises, or about 550 miles. M. Méchain died in Spain from excessive fatigue in attempting to extend his labors to Barcelona, a distance much further than had been required of him. The result of the operations in which these savans were engaged was, that a quadrant of the meridian lying between the Equator and the North Pole measured 6,130,470 toises, and that the ten-millionth part of this quantity, which was to form the standard unit, was therefore equal to 443,236 toises.

THE NEW NOMENCLATURE.

The unit of the measure of length, thus ascertained, was discriminated a *mètre*, and being established as the legal standard upon which all other weights and measures were to be predicated, the Academy proceeded to devise a new nomenclature. The *mètre* is almost exactly the length of the seconds' pendulum at Paris, or about 39 English inches.

The unit of measures of capacity is a cube, whose side is one-tenth of a *mètre*. It is called a *litre*, and is equal to about 2½ pints.

The unit of weights is the *gramme*. It is the weight in *vacuo* of a quantity of pure water, at its maximum of density, that shall exactly fill a cubical vessel, each side of which is one-hundredth part of the *mètre*. It is equivalent to about 15½ grains, Troy.

In land measures, the unit called the *are*, is a square surface, each of whose sides is ten *mètres*. It is nearly equal to four perches.

The unit of measure for fire-wood, denominated the *stère*, is a cubic *mètre*, comprising about 5½ English cubic feet, or somewhat more than one-fourth of a cord.

In order to express the decimal proportions the following vocabulary of names has been adopted:

For Multiples.	
the word <i>Deca</i> —prefixed signifies	10 times;
the word <i>Hecto</i> —prefixed, signifies	100 times;
the word <i>Kilo</i> —prefixed, signifies	1,000 times;
the word <i>Myria</i> —prefixed, signifies	10,000 times;
On the contrary, for Divisors	
the word <i>Deci</i> —expresses the	10th part;
the word <i>Centi</i> —expresses the	100th part;
the word <i>Mili</i> —expresses the	1,000th part;

It may assist the memory to observe that the terms for multiples are Greek and those for divisors Latin, thus, *Deca-meter* means ten metres, *Deci-meter* the tenth part of a metre, *Hecto-meter* one hundred metres, *Centi-meter* the hundredth part of a metre, and so on for the rest.

"The theory of this nomenclature," it is justly remarked, "is perfectly simple and beautiful. Twelve new words, five of which denote the things, and seven the numbers, include the whole system of metrology, give distinct and significant names to every weight and measure, multiple, and subdivision of the whole system, discard the worst of all the sources of error and confusion in weights and measures, the application of the same name to different things, and keep constantly present to the mind the principle of decimal arithmetic which combines all the weights and measures, the proportion of each weight and measure, with all its multiples and divisions, and the chain of uniformity which connects together the profoundest researches of science with the most accomplished labors of art, and the daily occupations and wants of domestic life, in all classes and conditions of society."

Such was the principle of the new system proposed by the Academy of Sciences in France, and the adoption of which, in that country, was enjoined by a law enacted December 8, 1793, and which is now in a fair way of being introduced into the United States.

Fire in Buffalo.

The steamer "City of Buffalo," which arrived at Buffalo from Chicago on Saturday last, was burnt on Monday while unloading at Sturgess' elevator. She was valued at \$75,000, insured for \$45,000. The fire communicated to the elevator, which, with its contents, about 150,000 bushels of grain, mostly oats, was entirely consumed. Loss on elevator and grain estimated at \$250,000.