dustries under appropriate federal supervision. The conditions incident to the period of readjustment render imperative that all obstacles to reasonable co-operation be immediately removed through appropriate legislation."

International Standardization

Standardization is the keynote to convenience, comfort and efficiency. We are so accustomed to the use of our fundamental standards, weights and measures, expression in language, national currency, postage, etc., that we do not fully realize what the establishment of such standards means to us individually, and to our national prosperity. Were each state to have a different language, a different standard of weights and measures, etc., we would not now be united into a vast and prosperous country. There is nothing that will promote international trade co-operation and good fellowship so much as would the establishment of wise and mutually satisfactory standards, some of which may be classified as follows:—

1. *International Language.*—National jealousies would no doubt prevent the adoption of any of the existing languages, unless the power of the nations now using such language should become sufficiently strong to enforce it. Germany, in her deep-seated plans to rule the world, had done all in her power to establish the German language in schools and colleges of many lands. Had her plans succeeded, the German language would no doubt have been enforced upon the world as it was in Alsace-Lorraine after the war of 1870.

The English language has long been the prevailing language in the world of commerce, and with the now still greater alliance of the Anglo-Saxon races will no doubt be extended. The English language as a standard leaves much to be desired when compared with the ideal; simplified spelling would help materially. The commercial advantages which would accrue temporarily (one generation at least) to the English speaking people of the earth, were the English language to become standardized, would be so great that such adoption would be sure to be frowned upon by all other nationalities. This being a fact, two entirely neutral languages have been proposed; these proposed languages being purely artificial, one knows as Volapük, meaning "world speech," published in 1879, and the other Esperanti, named for its originator, proposed some years later.

Artificial World-Language Needed

The International Congress of Philosophy, which met in Paris in 1900, defined the following essentials with which such an artificial language must comply, namely:—

The language shall serve the needs of daily life and business as well as the requirements of science and learning.

The language shall be so simple that a person possessing an average common school education can acquire it readily.

No doubt efforts will now be renewed toward the establishment of a standard system of expression for world-wide use.

2. *International Religion.*—Two hundred and sixty-eight religious sects, past and present, are recorded. About one-third of the population of the globe are followers of Buddha. Many Christian denominations differ from one another mainly on interpretation of the Bible.

During the World's Columbian Exposition in Chicago in 1893, a Congress of Religions was held. It was attended by representatives of the Buddhists, Mohammedans and other Asiatic religions, as well as by all Christian denominations. No effort was made at that time toward the establishment of a universal religion, but the possibility of establishing such a religion has been much commented upon since that time, and especially since the beginning of the great world conflict, which was participated in mainly by the followers of the Christian religion, each of the contestants praying to the same God for victory.

The Utopian of yesterday is the commonplace of to-day, the dream of to-day is the reality of to-morrow. We are prone to forget that our own short life-time is but as a small fraction of a second in eternity and we strive, in our imagination at least, to crowd into that small period of one generation the reforms for which the world will be ready only many generations hence.

These two subjects for standardization, that I have just discussed, would hardly seem befitting in our present highly practical age, and especially before a society which deals only with the strictly concrete subject of engineering materials. The standardization of language and religion is looked upon to-day as absolutely idealistic, but I feel very safe in predicting that in some future generation they will surely be a reality. I will now proceed with the more concrete subjects for standardization.

3. *International System of Weights and Measures.*—All are agreed that the metric system is ideal. It is in use by every civilized nation with the exception of the United States and Great Britain and some of her colonial possessions. An association, having as its object the world-wide adoption of the metric system, is in existence. This association, known as the Metric Association, is at the present time taking advantage of the world-wide desire for closer co-operation by carrying on a strong campaign for the adoption of the metric system in England and in the United States.

"Metric System" British Invention

The old German Osterling-Hanseatic League, which for hundreds of years controlled the trade of England, introduced the British pounds, both sterling and avoirdupois. We fell heir to these standards, which had been forced upon the British, through the British possession of a large part of the United States prior to the revolutionary war.

It was James Watt, the eminent scientist of Great Britain, who invented a few years after the American revolution, the decimal system of weights and measures now embodied in the metric system. Unfortunately, we did not adopt the Watt system in the early days of our independent existence, neither did England adopt it notwithstanding the fact that it was a British invention. Germany, however, soon after the war of 1870 did adopt it. Germany, during its war with France, having acquired a closer familiarity with the decimal system, was brought to a realization of its superiority over their own system. The metric system is referred to as the French system because of the French unit (the meter) employed.

To change from one system of weights and measures to another is no easy matter and it is exceedingly costly. The advantages, however, to be gained are so far reaching that the loss occasioned would be soon wiped out. We are to-day suffering because of the unfortunate choice and adoption years ago of a cumbersome system. To rid ourselves of this is analogous to taking a large dose of quinine, bitter and disagreeable, but nevertheless effective, with the patient better off for having taken it.

4. *International Standard of Temperature.*—How absurd is our Fahrenheit scale, and how confusing to have one scale for scientific expression and another for commercial usage.

Other Suggested International Standards

5. *International Coinage System.*—Why not a system of coinage, as well as a system of weights and measures, based on the principle of the divisibility by ten?

6. *International Gauging System.*—How perfectly absurd are the various systems based upon numerals having no particular significance. The only scientific manner in which to express gauge thicknesses for sheet, wire, cable, etc., is in the decimal system, using preferably the metric unit.

7. *Miscellaneous Standards.*—In addition to the above standards, other standards such as screw threads, electrical rating, power rating, etc., can be internationally adopted. Already some progress in these directions has been made by the co-operation of the British Standards Committee and the American Society of Mechanical Engineers, American Institute of Electrical Engineers, and through other co-operative work.

8. *International Standards of Material.*—So long ago as 1898, there was organized in Philadelphia the American section of the International Association for Testing Materials, which section was later incorporated as our present