Measuring the Oil and Fat Industry by the Metric System

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AN Englishman, who differed somewhat from the proverbial Englishman whom we like to portray in that he possessed a sense of humor, being much impressed, on visiting this country, by the countless automobiles, telephones, adding machines, and the many and various other time-saving devices, asked the very pertinent question: "What do you do with all the time you save?" This question seemed a poser, but it is not unanswerable. Time is gained for other forms of work which is not purely labor or mental calisthenics; time is gained for play, for the pleasant things of life, and for the pursuit of our favorite pastimes or hobbies.

This is not a philosophical essay on the worthwhileness of living. However, we must consider that we are here to do our part to make the world a better place to live in, according to the light in which we see our task. Life at least denotes progress, and it is altogether fitting to strive to attain the end that our generation will have more knowledge than the preceding one and may learn to accomplish its tasks better and in a shorter space of time.

Our existence is not necessarily happier than that of our forebears of a few generations back because of the fact that we can get into an automobile or an express train and arrive at a point hundreds of miles away in a few hours that would have taken them weeks to reach. Yet we are willing slaves of progress and would not want to return to their time-consuming modes of travel.

The same thing is true of mental distances. We desire to progress, to take short cuts to arrive at conclusions. To do this, we need the best forms of tools. Of these tools, our language is one of the most important. Probably one of the great advantages the Germans have had is their language with which they spend very little time learning to spell, while few ever really master the spelling of English.

Tables of weights and measures are another form of useful tool. We are prone to overlook to what a great extent these are used in every human activity. In our monetary system, in common with most civilized countries, we have recognized the advantages of a simple decimal system. Our tables of weights and measures, however, are cumbersome, besides being time-consuming to learn and to apply. They are in constant use in all activities of life and give rise to all manner of calculations, consuming time that ought to be free for other important matters.

The day of hero worship of the Germans has probably passed, and yet the record remains of their great advance in all scientific and technical work, in intellectual pursuits, art, music, and military science, in fact, in nearly all human activities. It would not be possible to point to any one cause for Germany's preeminence in so

many different lines of endeavor, for there were probably many causes; but, no doubt, one of these is the fact that they do not have to waste time as children and continuing as adults on such elementary studies as spelling and learning the various antiquated tables of weights and measures—under which English-speaking people are handicapped—and making the many calculations which they involve. It is not possible to say how much time is thus consumed in the average life of the individual. Spelling we are always learning and there appears to be little hope of any relief from this task. Life is so full of interesting subjects that we should seek relief, wherever possible, from its drudgery. Just as the desire to do this has given us all the great labor-saving devices, so it has given us also the metric system of weights and measures which, although it was proposed one hundred and fifty years ago, the American people, who have been so keen to see the practicability of other labor-saving tools, have lacked the foresight to apply.

We have undergone a vast mental evolution. We have learned step by step to accomplish many tasks in a few minutes which it would take a less enlightened generation weeks to perform. Such mechanical manifestations of this as the spinning of thread and weaving of cloth, the telephone, automobile, aeroplane, and radio had first to be conceived in the mind.

The Chinaman, slowly figuring with his abacus, cannot see the value to him of any higher mathematical knowledge, merely because he has not arrived at the point where he has the vision to foresee its usefulness. The same thing is true with the English-speaking people with regard to weights and measures—or else it is inertia.

How much time we actually waste is a question difficult to answer and depends very much on the viewpoint of the individual. Time spent in the most trivial pursuits may sometimes be well spent. Time spent in acquiring any useful knowledge may be regarded as well spent. As children, we spend much time learning to read. We can readily see the value of this, because we continue to use the knowledge thus acquired throughout life. It is time well spent. Is this equally true of the time devoted to learning the antiquated tables for long, square, and cubical measures, of avoirdupois and troy weights, liquid and dry measure? For most of the inhabitants of continental Europe, it would be time sadly wasted; for the English and Americans it is time well spent because they have to apply them constantly. They involve considerable calculation, which is also time well spent because such calculations have to be made. But at what a disadvantage we are compared to those who do not have to spend any time in this manner!

Nearly a century and a half ago, our forefathers had the courage to break away from a clumsy, unwieldy monetary system and to substitute dollars and cents for the traditional pounds, shillings and pence. Tradition is strong, however, and that is as far as they were able to go, so we still have the pound weight, the bushel, the yard. the gallon, and a great lot of other weights and measures. Agitation has been carried on to a considerable extent, but after 130 years of successful use of a sensible monetary system, no change has been made in any of the weights and measures. Scientists, even English and American, have had to adopt metric weights and measures, since with the many calculations they

have to make the old systems would be too burdensome. Even at that, those scientists who are connected with industry have their troubles, since they frequently have to express themselves in unscientific language, and paradoxical as it may seem, must translate their simple terms into complicated ones in order to be understood by the layman. One of the commonest instances of this is in the measurement of temperature, although it is perhaps in this particular case that the layman has received the most education. The chemist in industrial organizations has to use both the Fahrenheit and the centigrade or Celsius scale, and nearly always, in describing work at certain temperatures, he has to state which scale is meant or else calculate from one to the other.

Just as in other industrial enterprises, we find both scales are used in the oil industry. In refining, the Fahrenheit scale is employed in the plant, and in the laboratory the centrigrade scale is used.

Even Germany, in doing away with antiquated systems, failed to eliminate all of them. While adopting the metric systems of weights and measures, the Germans still use the Réaumur scale for measuring temperatures, except, of course, for scientific purposes, so they have the confusion of two scales. It seems odd, in doing this, that they do not use the scale of their compatriot, Fahrenheit; but this scale, invented by a German, is used by all English-speaking people. Instead, the Germans use the Réaumur scale. Although Réaumur was a Frenchman, his method of measuring temperature is not used in France; but the French very sanely use only one scale for measuring temperature, namely, the Centigrade scale, which was conceived by a Swede named Celsius. So we have the English using a German scale which is scorned by the Germans and the Germans using a French scale which the French repudiate in favor of one introduced by a Swede.

Fahrenheit took as his zero point the coldest temprature he could get with a mixture of ice and salt. The temperature of the body was the other point taken, and the interval was divided into 12 degrees. Later, in order to indicate the temperature more accurately, he divided each degree into eight parts, making the body temperature 96 degrees (which has since been found not to be quite correct). Extending the scale upward at the same ratio, the boiling point of water was found to be 212°. Réaumur took the freezing point of water as his zero point and made each degree one one-thousandth of the volume occupied by a liquid up to the zero point. The boiling point of water was then found to be 80°. Placing the boiling point at 80° was purely accidental and was due to the particular grade of alcohol he used.

The Celsius or centigrade scale, on the other hand, is thoroughly scientific, with the freezing point of water taken as zero and the boiling point at 100°. Its use should be universal. But this is much less important than other measurements, since there would be no confusion or complicated calculations provided we had only one scale, and it would make little difference which one was used.

There is also confusion in the oil trade in the weights and measures used. Gallons are not confusing in themselves if we would only stick to the gallon, but sometimes we have to convert gallons to cubic feet or pounds. Then again, we may have business relations with

Great Britain or Canada, and to the English and Canadians a gallon means something quite different from what it means to us.

Fortunately we have the same kind of avoirdupois pound as Great Britain, but in common with Great Britain, we have, beside the avoirdupois pound, also the troy pound, and the troy pound, instead of having sixteen ounces, has only twelve, and these troy ounces in turn are different from the avoirdupois ounces.

We even have two kinds of ton, the short ton of 2000 pounds and the long ton of 2240 pounds. To add to the confusion, both of these are in use in the oil industry, for cottonseed products for domestic consumption are sold by the short ton, but for export trade the long ton is used.

One of the untoward circumstances met in the oil industry has to do with oil coming from England or her colonies. In the United States, except for export, we have only the short ton and we have a hundredweight which, sensibly enough, is 100 pounds. The British, however, have a hundredweight of 112 pounds. Instead of marking a cask of oil with the number of pounds it contains, they divide this weight by 112 and show the number of hundredweight. Not content with this, any amount above an even hundredweight is divided into quarters and finally into pounds, so that a cask containing 1210 pounds would be marked as containing 10 hundredweight, 3 quarters, and 6 pounds. It would seem that this is a lot of unnecessary trouble or would be if the destination of the oil were known to be America, for the American purchaser simply has to unscramble the mess again and express the result in pounds. We presume, however, that if the oil goes to an English purchaser, he takes it as it is and is satisfied to have the purchase expressed in hundredweights that are 12 pounds more than 100 pounds. But we have little cause to rally the Britisher for his shortcomings when we, who pride ourselves on our practicability, have made so few improvements.

It does seem that with all the confusion in our weight and measure we have been able to blunder along somehow for quite a long time, about 140 years, in fact, as a nation, and, in face of the fact that we have known better all this time and in spite of the fact that the change was urged at the very beginning of our country's career and was championed by some of the most prominent men of the time, among them Washington and Jefferson, we are apparently no further advanced in this respect today than we were then.

What will be the outcome? Will we blunder along for another century or more in the same haphazard way? This does not seem probable, for there are already hopeful signs. The advocates of the metric system are pushing along slowly but surely. Already some of the scientific societies refuse to accept for publication in their journals papers in which weights and measures are expressed in any other than metric terms.

There is more agitation for sensible standards than ever before. There is now a society, called the Metric Association, organized for the purpose of bringing about the use of metric weights and measures.

We believe the agitation is too strong in its forward movement and is gaining too many adherents ever to go back. It may take a long time yet and considerable education

There is no question as to the desirability of the change. That is agreed by practically all who have given it any thought. Perhaps the greatest barrier is conservatism, or is it simply inertia? It is always difficult to throw off old habits and form new ones, and it is difficult to set the machinery in motion to make the change. The question also presents itself as to the expediency of scrapping present standards and the cost of doing this. There is also the question of adequate organization to bring about the desired end. As to the scrapping of present standards, there is no doubt that the cost in the aggregate would be considerable. That it would be more than offset by the saving in time and convenience to ourselves and generations to come may be regarded as certain. There are some industries where there would be a certain amount of confusion for a time and perhaps considerable expense. Probably the automobile industry would feel its effects as much as any other, and yet Elwood Haynes, whose name was one of the earliest connected with the automobile industry, was, until his recent death, one of the staunchest advocates of the metric system.

America has been highly endowed by nature with vast resources and wealth, but we need every advantage in our competition with the world, and should make every possible effort to remove the handicap of old methods of measurement which have long been abandoned by most of the countries of the world as obsolete.

E. L. Patch Expands

The E. L. Patch Company, Boston, Mass., have installed many new plants along the Atlantic coast during the past year. The increasing sales for the company's cod liver oil has made necessary a larger supply of livers, which it is the function of these plants to supply. The company also has developed a new type of cooker which is being successfully operated on the large steam trawlers while they are far out at sea.

As soon as the nets are hauled in, the fish are immediately cleaned. The fresh livers are taken by our men who ship with the crew, directly to the cooker where the oil is extracted at once.

The crude oil thus produced right at the source of the fresh liver supply is taken to the main plant at Gloucester, Mass., where it is chilled to remove the stearin. Officials of the company say that it is only by giving this close attention to the matter of fresh liver supply can they maintain the high quality of their Cod Liver Oil.

BUYS THE COTTON OIL PRESS

Louis N. Geldert, Editor of the Cotton Oil Press, has purchased that publication from the Interstate Cotton Seed Crushers Association. Commiting on the change of ownership, a contemporary says:

"As long as the publication was owned and issued by the association, it was, strictly speaking, a house organ. Of late, there has been a growing tendency to discount the editorial importance of legitimate educational propaganda appearing in association owned bulletins. The products of the cotton seed crushers are such, and their sale so combated by foolish legal measures, as to necessitate a deal of educational propaganda, and it is of utmost importance that no stone be left unturned in the effort to make the association's research work appear entirely free of prejudice."