

in regard to the real character of Mr. Long's efforts to reveal 'a vast realm of nature outside the realm of science' in 'ideas above and beyond the world of facts'?

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THE METRIC SYSTEM.

TO THE EDITOR OF SCIENCE: It is now years since the metric system has been authorized and permitted in this country and yet very little progress has been made in its practical introduction. We still labor with the old system. We can never tell in statistics or contracts what a ton of coal means (long or short) unless it is explicitly stated. And so in water analyses, they are stated in three or

pints, and a gallon four such quarts, and a peck eight such quarts, and a bushel thirty-two such quarts, and no other measure of volume shall be permitted, the distinction between fluid and dry measure being abolished.

3.* The U. S. standard foot shall be the length of the edge of a cube which shall contain 1,000 U. S. standard ounces of water under certain conditions of temperature and pressure, *i. e.*, 62.5 U. S. standard pints. The popular use of the terms would not need be changed *at all*, and the actual change of units would be so slight (ten per cent. or less) that it would not popularly be noticed, as may appear from the following table:

United States Standard.				Metric.			
.985	present ton	=	1	proposed ton	=	1	metric ton.
1.102	" pounds	=	1	" pound	=	$\frac{1}{2}$	Kilo., German 'Pfund.'
1.102	" ounces	=	1	" ounce	=	$\frac{1}{32}$	Kilo. = 31 $\frac{1}{2}$ grams.
1.05671	" liquid pints	=	1	" pint	=	$\frac{1}{4}$	liter.
.9081	" dry pint	=	1	" quart	=	1	liter
.9081	" " bushel	=	1	" bushel	=	32	liters.
1.05671	" liquid gallons	=	1	" gallon	=	4	"
.984	" foot	=	1	" foot	=	{ 25 $\frac{3}{4}$ cm. 315 cm.	

four different ways, so that it is hard to compare them. Even if we know they are in grains per gallon, it remains to be determined whether the gallon is imperial or U. S.

Allow me to suggest a method of introducing the metric system which might meet much less friction and meet all practical purposes.

The proposed legislation would be as follows:

1. On and after January 1, 1906, the U. S. standard ton shall be the metric ton, which shall contain 2,000 U. S. standard pounds, each of which shall contain 16 U. S. standard ounces. No other ounce, pound or ton weights, or weights purporting to be fractions or multiples thereof, shall be used under penalty.

2. The U. S. standard pint shall be the volume of one U. S. standard pound of pure water under certain conditions of temperature and pressure, and shall be equivalent to one-half liter. A quart shall be two such

Moreover, the old proverb, 'A pint is a pound the world around,' will be strictly true, and in water analyses a nickel's weight in a pint will be the same as an ounce per cubic foot and, specific gravity apart, the same as parts per thousand.

Especially in ending the long wrangle over various tons, I think the proposed changes would be decided improvements, and the differences between wet and dry measure should be abandoned.

ALFRED C. LANE.

SEX DETERMINATION IN BEES AND ANTS.

IN SCIENCE for December 25, 1903, Professor W. M. Wheeler characterizes as lacking in critical caution and 'apodictic' the statement that 'the egg of the bee, if unfertilized, invariably develops into a male, but if fertilized into a female.' If Wheeler's objection is directed merely against the form of this statement and not against its general content, if he desires merely the eradication of the word

* This is not so essential to the scheme.